I/O-System – *SPEEDWAY*

◄◄ Section 4

I/O-System – 750 and 753 Series

- Highly versatile
- More than 500 modules available
- Functional Safety
- Ex i

◄ Section 5

I/O-System – 750 XTR Series

For demanding applications where the following are critical:

- Extreme temperature stability
- Immunity to interference and dielectric strength
- Vibration and shock resistance

I/O-System – *SPEEDWAY*

- Uncompromising protection, even in the harshest environments outside the control cabinet
- Degree of protection: IP67
- Fully encapsulated

I/O-System – *SPEEDWAY*
General Product Information

For Cabinet-Free Data Acquisition
Where previously discrete wiring was once required, fieldbuses now provide communication between the control and field levels. Depending on the application, cabinet-free automation systems help minimize costs for planning, start-up and maintenance.

In addition to requiring a high degree of protection, a robust design and standardized connection technology, there is an increasing demand for advanced IP67 features that were once reserved only for IP20 systems, including:

- Real-time capability for isochronous data acquisition/output
- Parameterizable
- Diagnostic capable
- Upgradable

From the cabinet directly to the field level without sacrificing functionality – *SPEEDWAY* for perfectly tailoring machines to meet specific, decentralized needs. Configuration is both easy and flexible, with changes being made safely and quickly (plug & play).

Uncompromising Protection, Even in the Harshest Environments
Every module utilizes IP67-grade protection and robust construction. These fully encapsulated modules safeguard system operation, even when subjected to temperature extremes and prolonged periods of vibration. When combined, these robust design elements ensure long-term electronic circuit protection. Additionally, moisture cannot penetrate the units to cause damage (e.g., hairline cracks).
Electromagnetic shielding consisting of a metallized housing and shield plating guarantees optimal electromagnetic compatibility within the housing. Potential on-machine interferences are directly deflected via the modules' brackets or system's mounting rail. Even in sub-zero temperatures, the WAGO *SPEEDWAY* I/O-System performs reliably.

Modular Design
WAGO *SPEEDWAY 767* is a fieldbus-independent modular IP67 I/O system. It is linked via a fieldbus coupler with a higher-level controller. The fieldbus coupler already has digital inputs. An integrated system bus interface connects to other I/O modules. Fieldbus couplers and I/O modules can be extensively parameterized, allowing direct field-side acquisition and transmission of signals depending on the application needs.

Up to:
- 64 I/O modules per station
- 8 channels per module
- 520 channels per station
- 50 m between two modules
- 500 m total extension per station

Ergonomic Design
Standardized M8, M12 and M23 connections (metal design) ensure easy and safe wiring. The fieldbus, system bus, power supply and sensors/actuators are connected via several coded connectors. This streamlined approach prevents wiring errors.
To accommodate custom marking, the modules have marking strips and a WMB plate. Both the LEDs and marking field are uniquely assigned to the connection.

Flexible Assembly
The modules can be directly mounted on machines. Extensive engineering ensures compliance with standardized specifications from CNOMO guidelines regarding the spacing of assembly drill holes that are often used in passive distributor or sensor/actuator boxes. Adapters for both rails and machine-mount brackets are also available.

Exceptional Degrees of Freedom
Featuring **update capability**, the *SPEEDWAY* I/O-System makes it easy to update fieldbus couplers and I/O module firmware to incorporate new functions.
Integrated **system parameter handling** stores and loads parameter settings and checks that the replacement module is correct when installed.
With **option handling**, variable I/O station configurations, which can occur when tools are changed in a machining center, can be implemented without engineering via PROFIBUS.

- Fully encapsulated for harsh environmental conditions
- Fieldbus-independent – compatible with all standard fieldbus protocols & ETHERNET standards
- Real-time capability up to isochronous mode for selected ETHERNET-based fieldbuses
- Exclusive use of standard pluggable connectors
- Flexible mounting options

Explanation of the components for the item number key

Series

Item No. : 767-yyxx

1yxx: Fieldbus Coupler (FC)
- 1xx: PROFIBUS
- 2xx: PROFINET
- 3xx: ETHERNET, sercos
- 4xx: DeviceNet
- 5xx: CANopen
  - xx: Consec. number

3yxx: Digital Input Modules (DI)
- 8xx: 8 channels
  - 01: Connector 8 x M8, high-side switching
  - 02: Connector 4 x M12, high-side switching
  - 03: Connector 8 x M8, low-side switching
  - 04: Connector 4 x M12, low-side switching
  - 05: Connector 8 x M12, high-side switching
  - 06: Connector 4 x M12, high speed

4yxx: Digital Output Modules (DO)
- 8xx: 8 channels
  - 01: Connector 8 x M8, 0.5 A, high-side switching
  - 02: Connector 4 x M12, 0.5 A, high-side switching
  - 03: Connector 8 x M8, 2 A, high-side switching
  - 04: Connector 4 x M12, 2 A, high-side switching
  - 05: Connector 8 x M8, 0.5 A, low-side switching
  - 06: Connector 4 x M12, 0.5 A, low-side switching
  - 07: Connector 8 x M12, 0.5 A, low-side switching
  - 08: Connector 4 x M12, 0.1 A, high speed

5yxx: Digital Input/Output Modules (DIO) DI/DO
- 4xx: 4 channels
  - 01: Connector 4xM12, 0.2 A, high speed
- 8xx: 8 channels
  - 01: Connector 8 x M8, 0.5 A, high-side switching
  - 02: Connector 4 x M12, 0.5 A, high-side switching
  - 03: Connector 8 x M12, 0.5 A, low-side switching

5yxx: Function and Technology Modules
- 2xx: 2 channels + 4 DIO
  - 01: TTL Incremental Encoder/SSI Encoder
  - 02: HTL Incremental Encoder/Counter

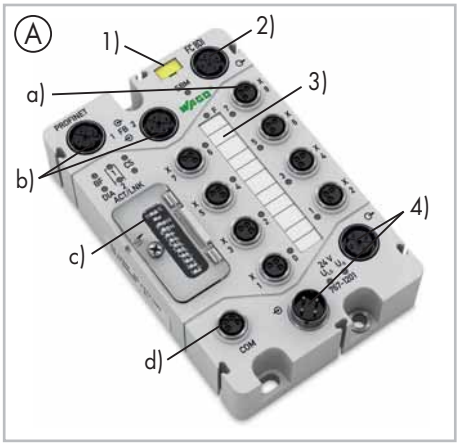
5yxx: Communication Modules
- 2xx: 2 channels + 4 DIO
  - 03: Serial Interface RS-232, RS-422/-485
  - 04: MOVILINK® Interface RS-232, RS-485

6yxx: Analog Input Modules (AI)
- 4xx: 4 channels
  - 01: Voltage/Current (U/I)
  - 02: Resistance Measurement (RTD)
  - 03: Thermocouple (TC)

7yxx: Analog Output Modules (AO)
- 4xx: 4 channels
  - 01: Voltage/Current (U/I)

9yxx: Supply Module
- 1xx: M23 Connector
  - 01: Power Divider

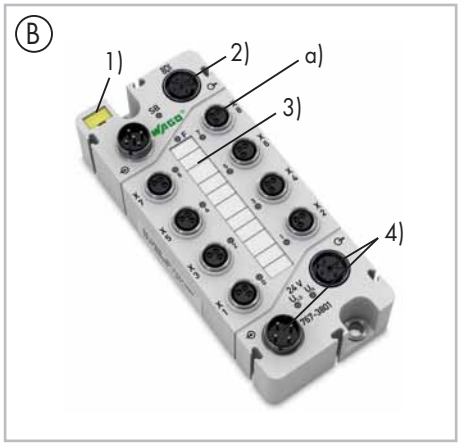
.../0000-0800: Modules with interference-free outputs

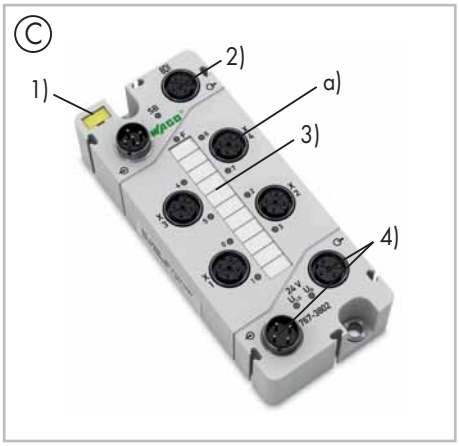


(1) Module marking WMB
(2) System bus connection M12
(3) Sensor/actuator marking
(4) Supply connections M12

Housing design fieldbus coupler (A)
- Sensor/actuator connections M8 (a)
- Fieldbus connections M12 (b)
- Control panel (c)
- Service connection M8 (d)
- W x H x L (mm) 75 x 35.7 x 117

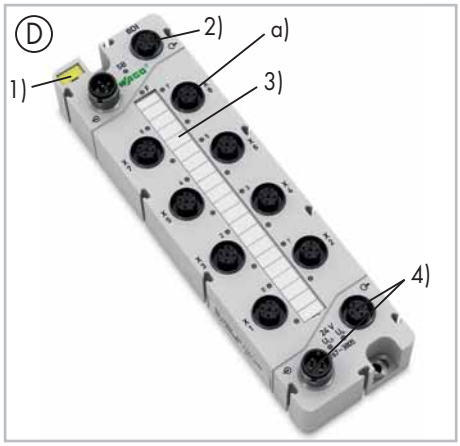
Housing design I/O module 8 x M8 (B)
- Sensor/actuator connections M8 (a)
- W x H x L (mm) 50 x 35.7 x 117

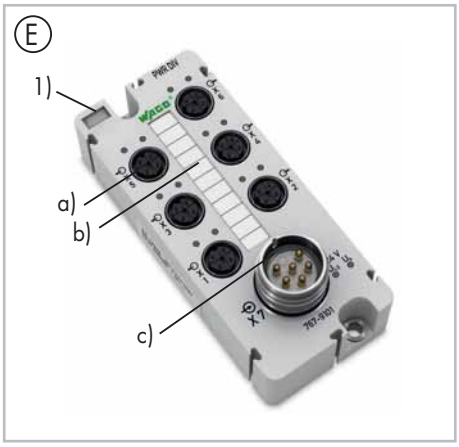




Housing design I/O module 4 x M12 (C)
- Sensor/actuator connections M12 (a)
- W x H x L (mm) 50 x 35.7 x 117

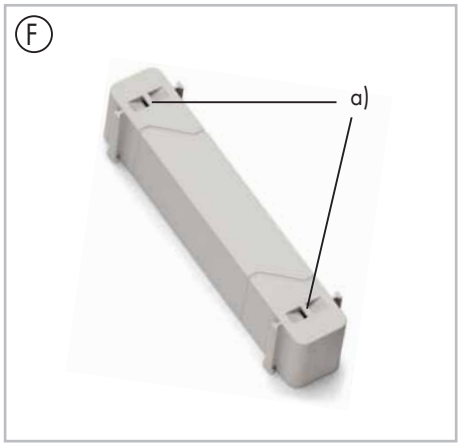
Housing design I/O module 8 x M12 (D)
- Sensor/actuator connections M12 (a)
- W x H x L (mm) 50 x 35.7 x 170



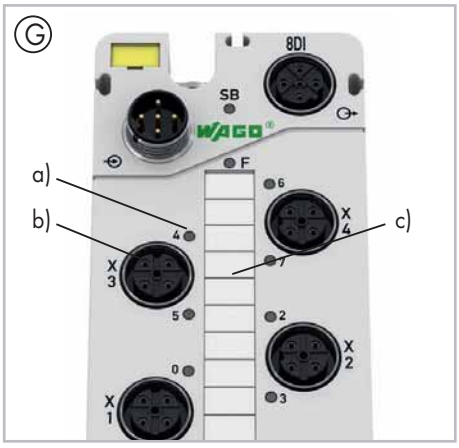


Power divider housing design (E)
- Supply outputs M12 (a)
- Supply output marking (b)
- Supply input M23 (c)

W x H x L (mm) 50 x 35.7 x 117



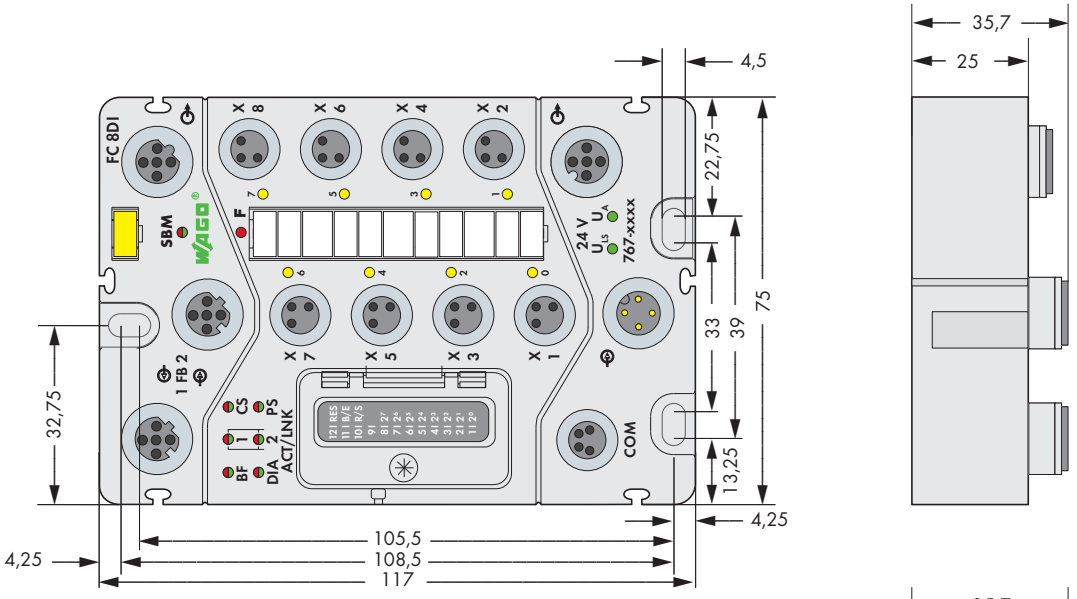
Spacer module (F)
- Cable tie mounts (a)
- W x H x L (mm) 20 x 25 x 117



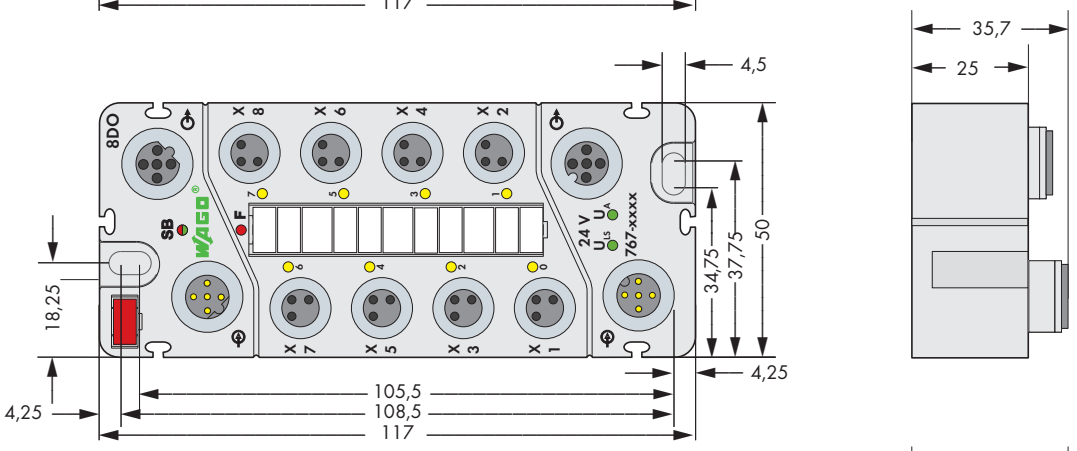
Signaling (G)
- Per channel 1–2 LEDs (a)
- Unique assignment to the connector (b)
- Unique assignment to the marking (c)

Degree of protection (H)
- All modules are fully encapsulated
- Degree of protection: IP67
- Printing on back of unit details pin assignment

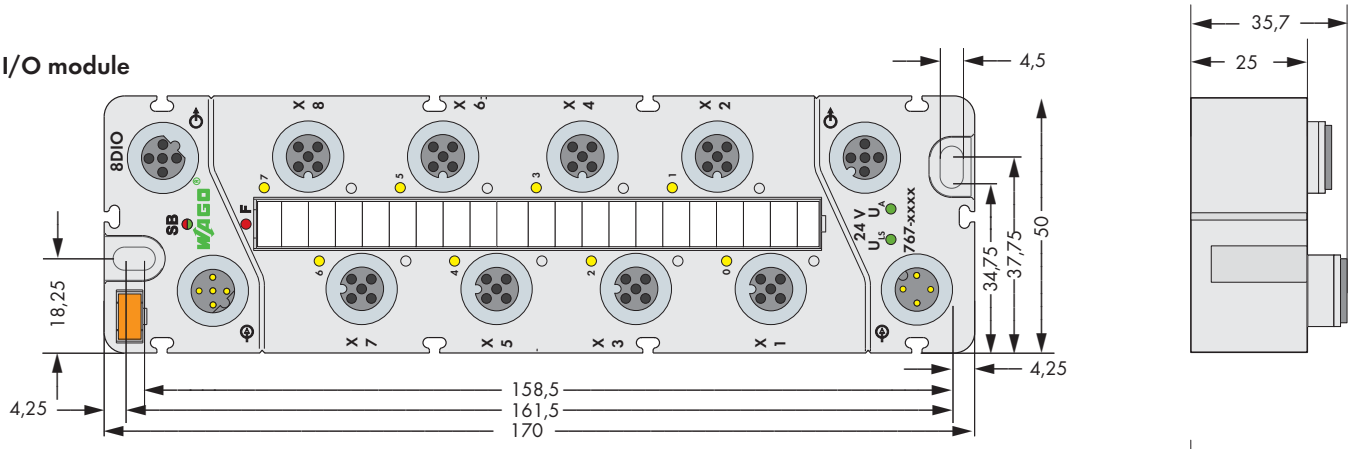
Fieldbus coupler



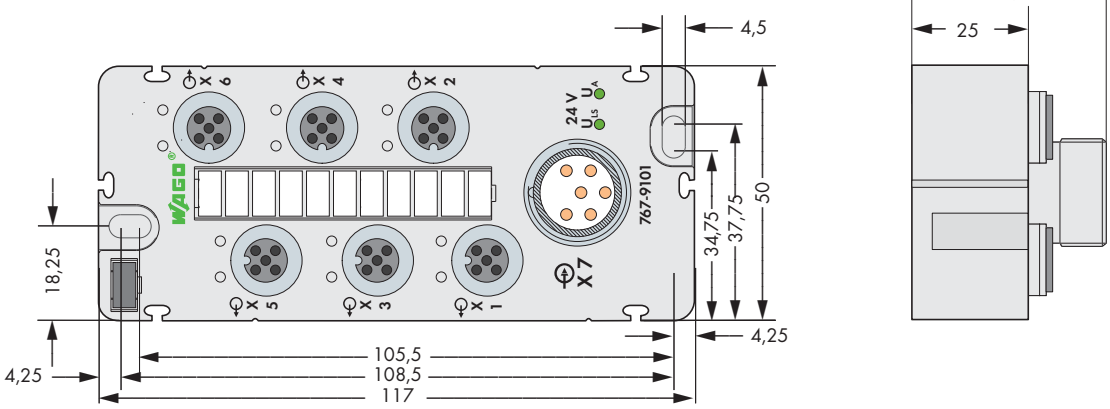
I/O module



I/O module



Power divider

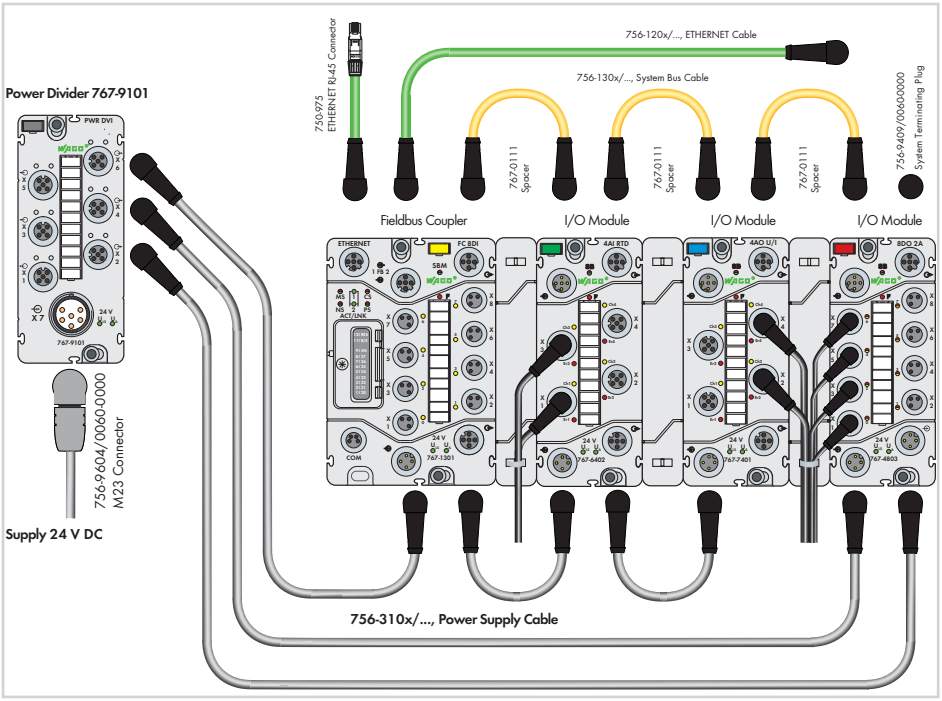


Power supply

The modular structure permits both individual supply of I/O modules and aggregation to supply groups (e.g., for implementing emergency stop groups). Thus, each supply group and each individual supply can be operated using different power supplies at the same potential. Two supply lines are routed within the supply lines (gray). U_{LS} for logic and sensor supply is always electrically isolated from U_A for the actuator supply.

You can connect additional I/O modules until the highest permissible current load of 4 A for one supply line (U_{LS} and/or U_A) is reached. To connect other *SPEEDWAY* modules, you have to reconnect the power supply. An exception are the 2 A output modules which cannot route the power supply due to an increased power demand.

By using a power divider, it is possible to distribute the U_{LS} and U_A power supplies over six M12 connectors. The combination of point-to-point power distribution and linear power distribution/ routing offers the greatest flexibility to optimize the supply lines for the respective application and to supply power over large distances.



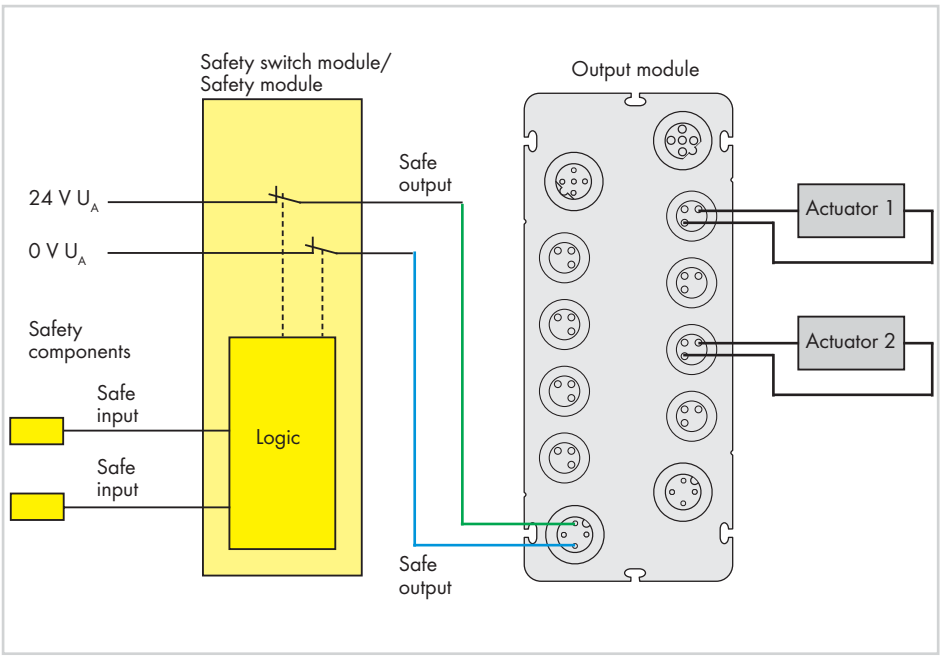
Interference-free in safety-related applications

To safely and easily perform cost-effective, centralized deactivation of complete actuator groups, the actuator's power supply can be switched off using a safety switching device. This can either be performed for each individual actuator or by turning off the power supply to a group of control outputs.
In the event of failure, ensure that no interference from other current or power circuits occurs – even when the control voltage is switched off – so the defined safety function properties (logic and time response) remain unchanged.

Some modules are designed to provide interference-free safety functionality. These modules comply with safety requirements up to Category 4 of DIN EN ISO 13849-1:2007. Safety category and performance level depend solely on the safety components and their wiring.

Attention!
Interference-free WAGO I/O modules have no active influence on the safety function, they are not an active part of the safety application and are not a substitute for the safety switching device! When using the components in safety functions, the corresponding notes must be observed in the corresponding manual.

Attention!
For interference-free operation, it is necessary to lay the power cables separately or to use shielded supplied lines. Please observe the notes in the manual!

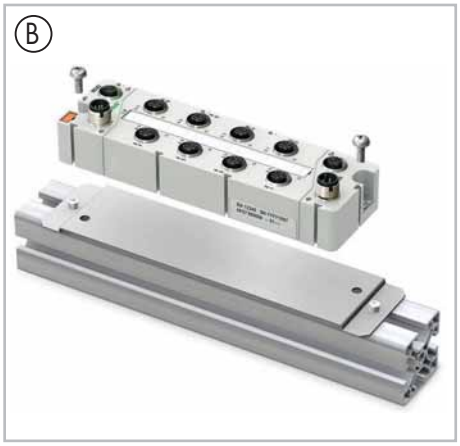


Example: Two-pin shutdown of the power supply of all digital outputs

(A) Carrier rail adapter

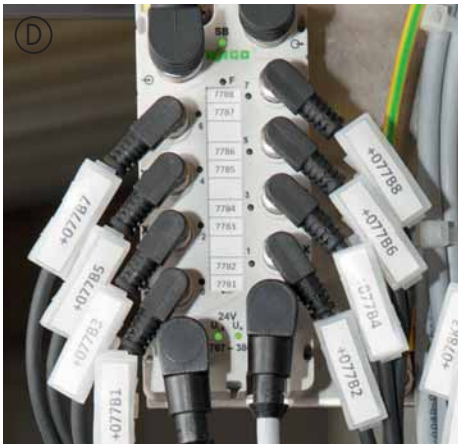
(B) Profile rail adapter

Available for fieldbus couplers and I/O modules as accessories



(C) Various versions of drag chain compatible, pre-assembled cables for power supply, system bus, fieldbus and separate pluggable connectors available as accessories

(D) Cable marking via marker sleeves in different lengths for various core diameters (211 Series)

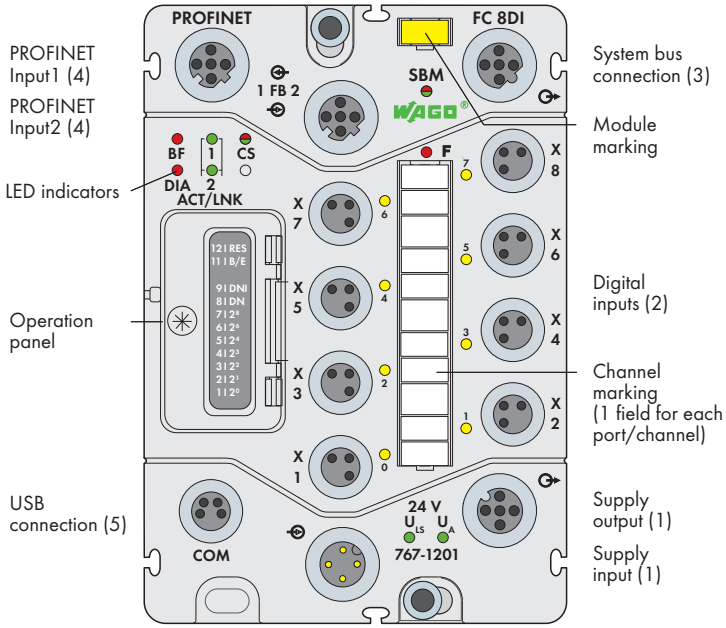


Standards and Rated Conditions

General Specifications	
Operating voltage	24 VDC (-25 % ... +30 %)
Operating temperature	-25 °C ... +60 °C; temperature change 3 K/s
Storage temperature	-40 °C ... +85 °C
Relative humidity (without condensation)	5 % ...95 %
Operating altitude	-1000 m ... 2000 m; air pressure 1080 ... 795 hPa
Altitude at storage/transport	-1000 m ... 3500 m; air pressure 1080 ... 660 hPa
Free fall	≤ 1 m acc. to EN 61131-2
Degree of contamination	3 acc. to IEC 60664 (IEC 61131)
Protection class	III acc. to IEC 60536 (VDE 0106, Part 1)
Vibration resistance	5g acc. to IEC 60068-2-6
Shock resistance	short-term: 50g/11 ms/half-sine acc. IEC 60068-2-27 long-term: 30g/6 ms/half-sine acc. IEC 60068-2-29
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4
Protection type	IP67 (NEMA 6&6P) acc. to DIN 40050 (EN 60529)
Mounting position	any
Housing material	Polyamide (PA), light gray (RAL7035); Makrolon (address switch cover), transparent; Flammability acc. to UL94-V0; halogen, silicon-free Potting: Polyurethane (PUR), halogen/silicon-free
UV resistance	1000 h UV continuous light acc. to DIN EN ISO 4892-2B
Maximum contaminant concentration	SO2 < 0.5 ppm; H2S < 0.1 ppm
Current carrying capacity of supply connections	max. 8 A (U_{LS}: 4 A; U_A: 4 A)

PROFINET IO Fielbus Coupler

incl. 8 digital inputs (8 x M8)



Short description:
PROFINET IO is the ETHERNET-based, manufacturer-independent and open fieldbus standard from PROFIBUS & PROFINET International (PI). This standard offers solutions for manufacturing/process automation and safety applications in addition to covering an entire range of needs from drive technology to synchronous motion control applications.
The fieldbus coupler links the WAGO SPEEDWAY 767 I/O modules to PROFINET IO. The fieldbus coupler creates a process image of all inputs and outputs depending on the station's module structure and the configuration data transmitted by the IO controller. In addition, the coupler provides the connected I/O modules with the parametrization data provided by the device description (GSDML file) and transferred by the IO controller. The device signals existing module and channel errors as diagnostic alarms.

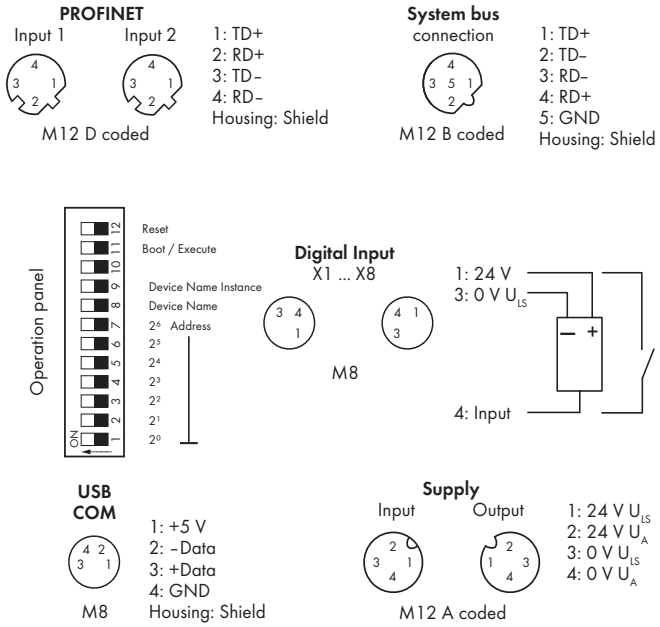
Characteristics:
- Integrated switch
- 8 digital 24VDC inputs included
- Modular and extendable up to 64 I/O modules (via system bus connection)
- USB interface for servicing purposes
- Parametrization via GSDML or FDT/ DTM (incl. diagnostics and simulation)
- Enclosed operation panel (operating mode and address switch)

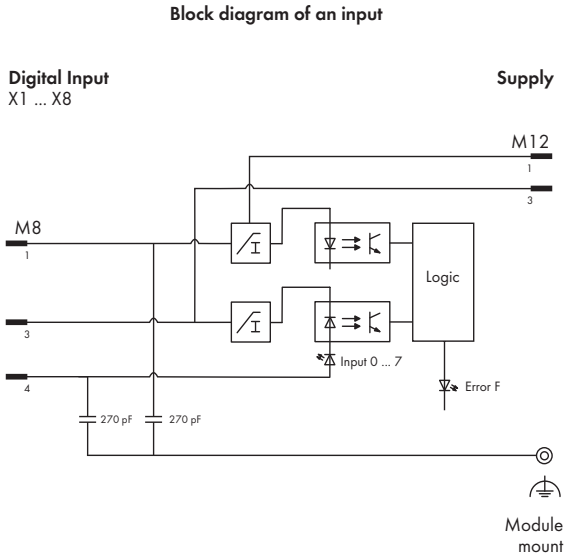
Included:
- Module WMB marker card, yellow (1 pcs)
- Channel marker strips (1 pcs)
- M8 protective caps (2 pcs)

Description	Item No.	Pack. Unit
FC PROFINET IO 8DI 24V DC	**767-1201**	1

Accessories	Item No.
PROFINET cable + accessories	see pages 510 + 517
System bus/power supply cable + accessories	see pages 502 ... 507 + 516
General accessories	see pages 520 ... 521
GSDML file	Download: www.wago.com
DTM (Device Type Manager)	Download: www.wago.com

Technical Data	
Fieldbus:	
Device type	PROFINET IO device
Connection type (4)	M12 connectors, D coded, 5 poles
Baud rate	100 Mbit/s, full duplex
Transmission medium	100Base-TX, twisted pair copper cables
Station name	Adjustable via operation panel or DCP
Protocols	PROFINET IO, DCP, LLDP, SNMP
Additional data	see PROFINET specification
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %);
	Also required for power supply transmission
Supply current	
Logic and sensor current I_{LS}	typ. 125 mA + sensors (max. 400 mA)
Actuator current I_A	5mA
Protection	Reverse voltage protection for U_{LS} + U_A;
	short circuit protection for sensor supply





Technical Data

Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
System bus:	
Number of expendable modules	64
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus, fieldbus	500 V DC each
Service:	
Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles
Standards and approvals:	
PROFINET	IEC 61158
Conformity marking	CE
Korea Certification	
UL 508	
Configurable functions:	
Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit/overload of sensor supply Undervoltage (U_{LS} + U_A)

Technical Data

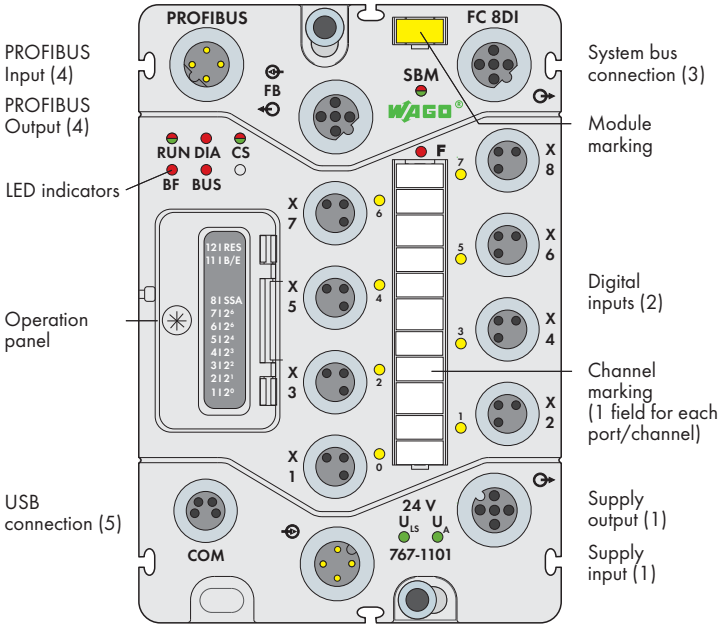
Process image:	
Input process image	1024 bytes
Output process image	1024 bytes
LED indicators:	
BF : PROFINET IO bus error	LED (red)
DIA : PROFINET IO diagnostics	LED (red)
ACT/LNK 1 : Network connection, fieldbus 1	LED (green)
ACT/LNK 2 : Network connection, fieldbus 2	LED (green)
CS : Fieldbus coupler status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	377.1 g

PROFIBUS DP-V1 Fieldbus Coupler

incl. 8 digital inputs (8 x M8)



Short description:
PROFIBUS DP is the manufacturer-independent and open fieldbus standard from PROFIBUS & PROFINET International (PI). This standard offers solutions for manufacturing/process automation and safety applications in addition to covering an entire range of needs from drive technology to synchronous motion control applications.
The fieldbus coupler links the WAGO SPEEDWAY 767 I/O modules to PROFIBUS DP. The coupler creates a process image of all inputs and outputs depending on the station's module structure and the configuration data transmitted by the DP master. In addition, the coupler provides the connected I/O modules with the parametrization data provided by the device description (GSD file) and transferred by the DP master, if required. In DP-V0 operation mode, the device provides device, identification and channel related diagnostics as well as module status. In DP-V1 operation mode, status messages and optional diagnostic alarms are provided instead of identification and channel based diagnostics.

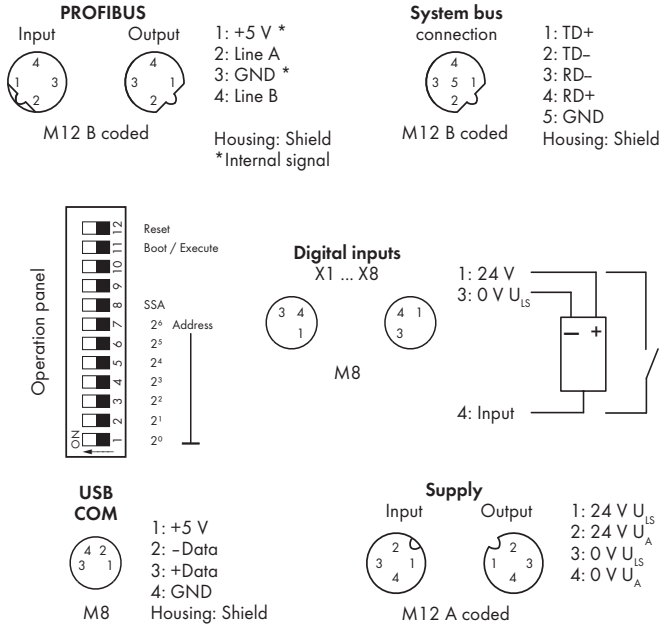
Characteristics:
- 8 digital 24VDC inputs included
- Modular and extendable up to 63 I/O modules (via system bus connection)
- USB Interface for servicing purposes
- Parametrization via GSD or FDT/ DTM (incl. diagnostics and simulation)
- Enclosed operation panel (operating mode and address switch)

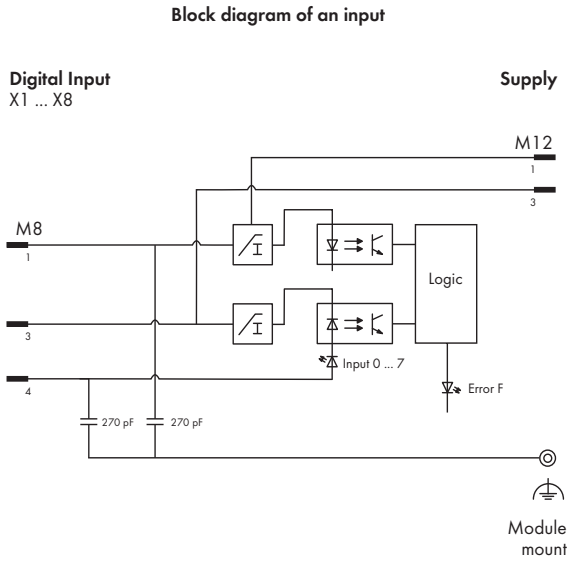
Included:
- Module WMB marker card, yellow (1 pcs)
- Channel marker strips (1 pcs)
- M8 protective caps (2 pcs)

Description	Item No.	Pack. Unit
FC PROFIBUS DP 8DI 24V DC	**767-1101**	1

Accessories	Item No.
PROFIBUS cable + accessories	see pages 508 ... 509
System bus/power supply cable + accessories	see pages 502 ... 507 + 516
General accessories	see pages 520 ... 521
GSD files	Download: www.wago.com
DTM (Device Type Manager)	Download: www.wago.com

Technical Data	
Fieldbus:	
Device type	PROFIBUS DP-V1 slave
Connection type (4)	M12 connectors, B coded, 4 poles
Baud rate	9.6 kBd ... 12 MBd (automatic recognition)
Transmission medium	RS-485 / 2-core copper cable acc. to IEC 61158 and EN50170
Station address	0 - 125 (adjustable via operation panel or PROFIBUS)
Protocols	PROFIBUS DP
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %); Also required for power supply transmission
Supply current	
Logic and sensor current I_{LS}	typ. 110 mA + sensors (max. 400 mA)
Actuator current I_A	5mA
Protection	Reverse voltage protection for U_{LS} + U_A; short circuit protection for sensor supply





Technical Data

Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
System bus:	
Number of expendable modules	63
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus, fieldbus	500 V DC each
Service:	
Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles
Standards and approvals:	
PROFIBUS	IEC 61158
Conformity marking	CE
Korea Certification	
UL 508	
Configurable functions:	
Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit/overload of sensor supply Undervoltage (U_{LS} + U_A)

Technical Data

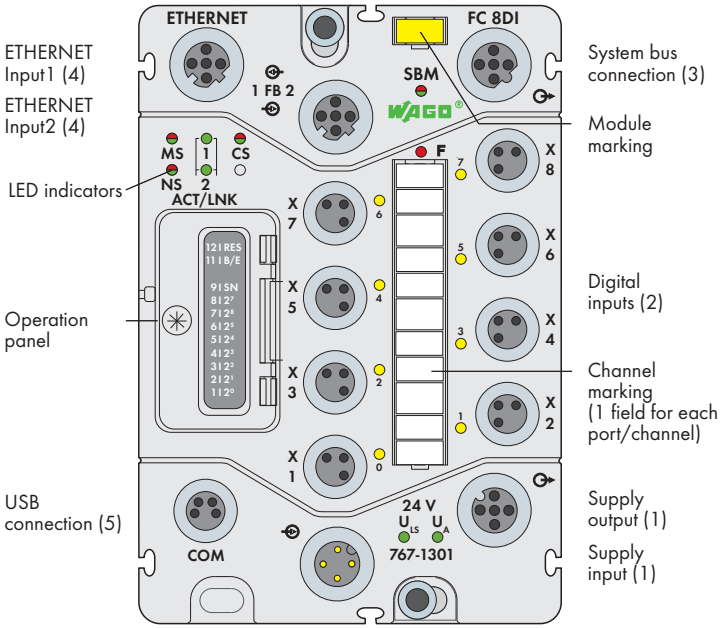
Process image:	
Input process image	244 bytes
Output process image	244 bytes
LED indicators:	
RUN : Fieldbus coupler initialization	LED (green/red)
BF : PROFIBUS DP bus error	LED (red)
DIA : PROFIBUS DP diagnostics	LED (red)
BUS : PROFIBUS DP projecting error	LED (red)
CS : Fieldbus coupler status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	405 g

ETHERNET Fieldbus Coupler

incl. 8 digital inputs (8 x M8)



Short description:
In addition to MODBUS/TCP, the ETHERNET/IP protocol has proven itself as an industrial communication standard over ETHERNET.
The fieldbus coupler links the WAGO SPEEDWAY 767 system to ETHERNET. When initializing, the buscoupler determines the station's module structure and creates a process image of all inputs and outputs. The application protocols MODBUS/TCP and ETHERNET/IP are available for process data and the protocol services Http, BootP, DHCP, DNS, SNTP, FTP and SNMP (on request) for the system administration and diagnostics.

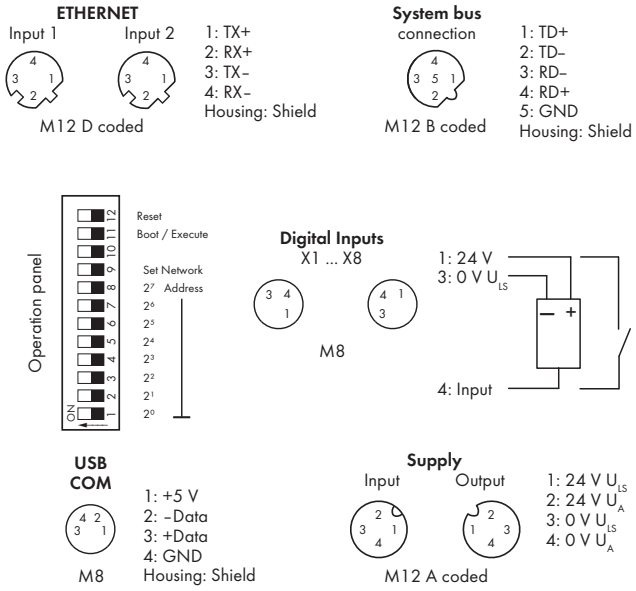
Characteristics:
- Integrated switch
- 8 digital 24VDC inputs included
- Modular and extendable up to 64 I/O modules (via system bus connection)
- USB interface for servicing purposes
- Parametrization via FDT/DTM (incl. diagnostics and simulation)
- Enclosed operation panel (operating mode and address switch)

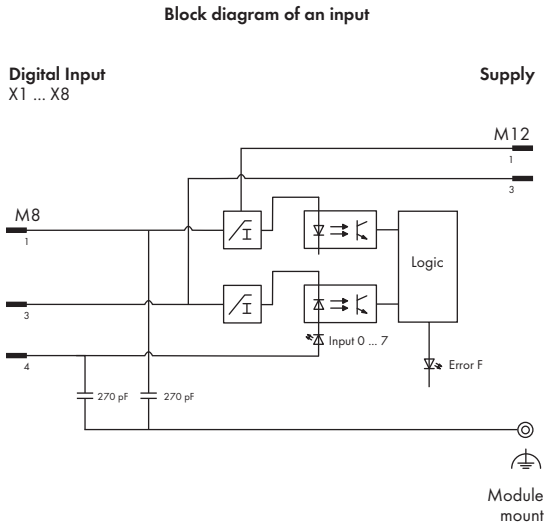
Included:
- Module WMB marker card, yellow (1 pcs)
- Channel marker strips (1 pcs)
- M8 protective caps (2 pcs)

Description	Item No.	Pack. Unit
FC ETHERNET 8DI 24V DC	**767-1301**	1

Accessories	Item No.
ETHERNET cable + accessories	see pages 510 + 517
System bus/power supply cable + accessories	see pages 502 ... 507 + 516
General accessories	see pages 520 ... 521
DTM (Device Type Manager)	Download: www.wago.com

Technical Data	
Fieldbus:	
Device type	ETHERNET device
Connection type (4)	M12 connectors, D coded, 4 poles
Baud rate	10/100 Mbit/s
Transmission medium	Copper cable
Station address	1-255 (last byte of IP address adjustable via operation panel)
Protocols	MODBUS/TCP (UDP), EtherNet/IP
Additional data	see manual
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %); Also required for power supply transmission
Supply current	
Logic and sensor current I_{LS}	typ. 125 mA + sensors (max. 400 mA)
Actuator current I_A	5mA
Protection	Reverse voltage protection for U_{LS} + U_A; short circuit protection for sensor supply





Technical Data

Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
System bus:	
Number of expendable modules	64
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus, fieldbus	500 V DC each
Service:	
Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	
Configurable functions:	
Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit/overload of sensor supply
	Undervoltage (U_{LS} + U_A)

Technical Data

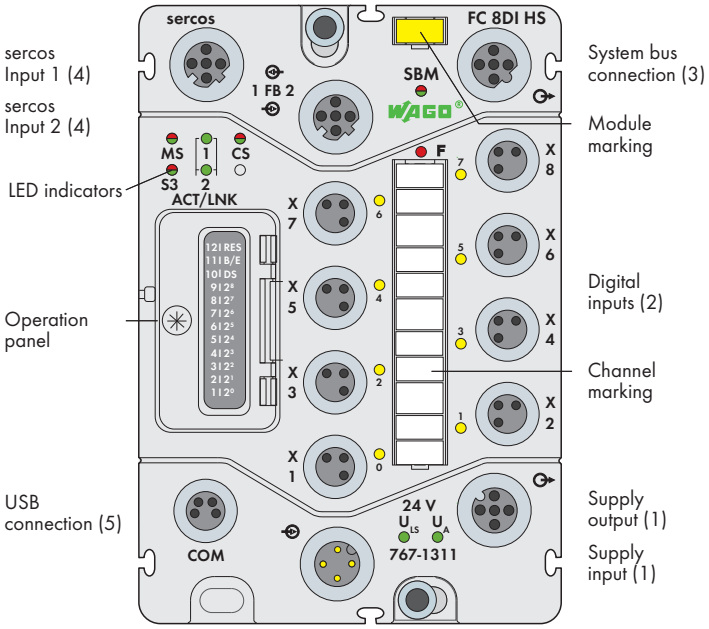
Process image:	
Input process image	2048 bytes
Output process image	2048 bytes
LED indicators:	
MS : ETHERNET module status	LED (green/red)
NS : ETHERNET network status	LED (green/red)
ACT/LNK 1 : ETHERNET data exchange/network connection	LED (green)
ACT/LNK 2 : ETHERNET data exchange/network connection	LED (green)
CS : Fieldbus coupler status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	400 g

sercos Fieldbus Coupler

incl. 8 digital high-speed inputs (8 x M8)



Short description:
This fieldbus coupler links the WAGO SPEEDWAY 767 system to the sercos network. It determines the structure of the station and generates the required process images of the configured inputs and outputs. Setting up the station can involve a mixed arrangement of analog, digital or complex I/O modules. The fieldbus coupler application allows access to the device as a sercos I/O device on the network. The sercos service channel (SVC), real-time channel (RTC) and IP channel (NRT) are supported for standard TCP/IP communication.
Two integrated ETHERNET ports allow easy creation of a line and ring structure without requiring additional components. Each port supports Auto MDI/MDI-X and automatically detects the direction of transmission, allowing both patch and crossover cables to be used. Assigning the sercos address can be performed via switch 10, either using the operation panel (switches) or software (retentive memory). In addition, the fieldbus coupler has 8 digital inputs to capture binary signals from switches and sensors.

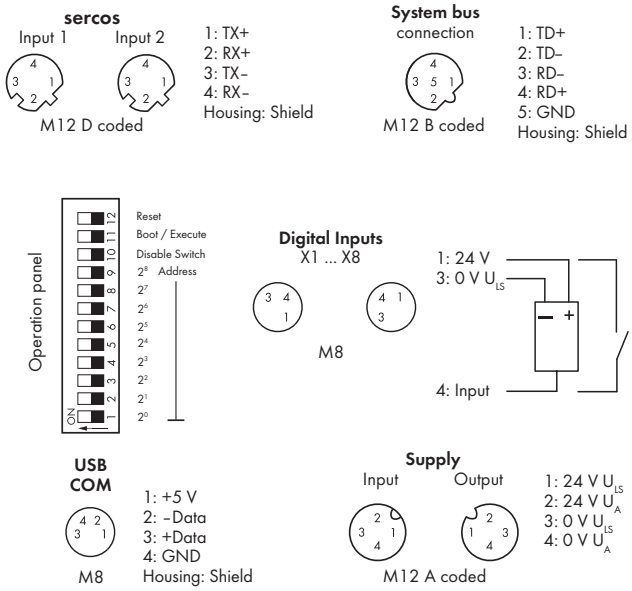
Characteristics:
- 8 digital high-speed inputs, type 1 (IEC 61131)
- Hardware delay: 10 µs
- Modular and extendable by up to 64 I/O modules (via system port)
- USB interface for service purposes
- Configuration and parameter setting via SDDML device description file
- Parameter setting via FDT/DTM (incl. diagnostics and simulation)
- Sealable operation panel (operating mode and address switches)

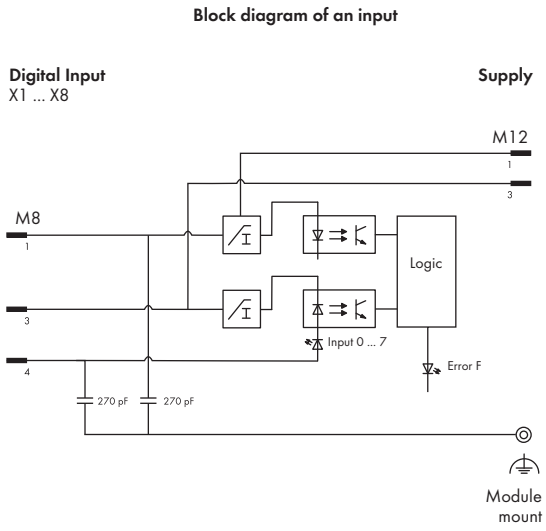
Included:
- 1 x WMB marker, yellow
- 1 x channel marking strip
- 2 x M8 protective cap

Description	Item No.	Pack. Unit
FC sercos 8DI 24V DC HS	**767-1311**	1

Accessories	Item No.
ETHERNET cable + accessories	see pages 510 + 517
System bus/power supply cable + accessories	see pages 502 ... 507 + 516
General accessories	see pages 520 ... 521
DTM (Device Type Manager)	Download: www.wago.com
SDDML files	Download: www.wago.com

Technical Data	
Fieldbus:	
Device type	sercos I/O device
Connection type (4)	M12 connectors, D coded, 4 poles
Baud rate	100 Mbit/s, full duplex
Transmission medium	Copper cable (Cat. 5e, Class D)
Station address	0 – 511 (adjustable via operation panel or software)
Protocols	sercos v1.1.2, TCP/IP, FTP, HTTP
sercos services	SVC, RTC, CC, IP
sercos profiles	GDP_Basic, SCP_VarCfg, SCP_Sync, SCP_Diag, SCP_WD, SCP_NRT, FSP_IO
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 VDC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %); Also required for power supply transmission
Supply current	
Logic and sensor current I_{LS}	typ. 140 mA + sensors (max. 400 mA)
Actuator current I_A	5mA
Protection	Reverse voltage protection for U_{LS} + U_A; short circuit protection for sensor supply





Technical Data

Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Input filter	Hardware: ≤ 10 µs, software parametrizable
	depending on operating mode
Hardware delay up to fieldbus	10 µs (direct mode)
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-3 VDC ... +5 VDC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 VDC (-30 VDC < U_{IN} < +30 VDC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
System bus:	
Cycle time	min. 250 µs
Number of expendable modules	64
Connection type (3)	M12 connectors, B coded, 5 poles,
	shielded
Distance between two modules	20 m
Total extension per station	200 m
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus, fieldbus	500 VDC each
Service:	
Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles
Standards and approvals:	
Conformity marking	CE
cULus UL 508	
Configurable functions:	
Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	depending on operating mode
	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit of sensor supply
	Undervoltage (U_{LS} + U_A)

Technical Data

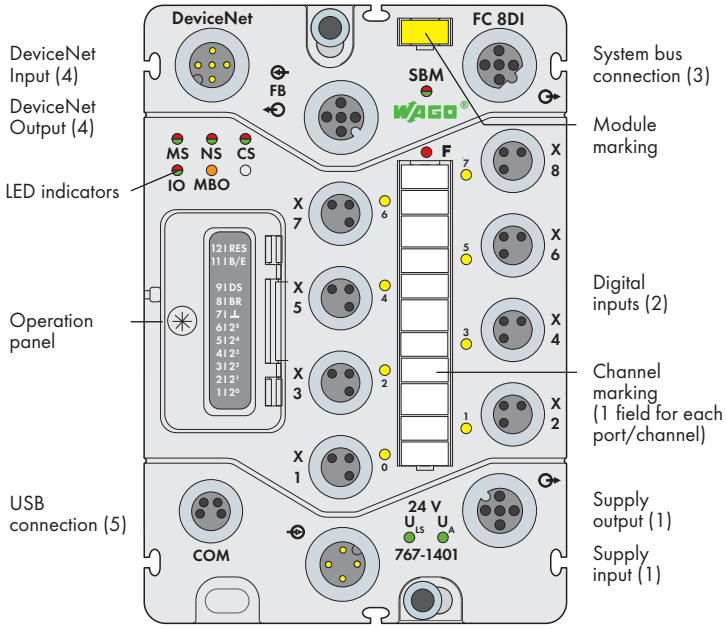
Process image:	
Input process image	2048 bytes
Output process image	2048 bytes
LED indicators:	
MS: Module status	LED (green/red)
S3: sercos status	LED (green/red)
ACT/LNK 1 : ETHERNET data	
exchange/network connection	LED (green)
ACT/LNK 2 : ETHERNET data	
exchange/network connection	LED (green)
CS : Fieldbus coupler status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching
Advanced features:	
Operating hours counter	Values in [h]
High-speed inputs	parametrizable, depending on operating
	mode (see manual)

General Specifications

Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	400 g

DeviceNet Fieldbus Coupler

incl. 8 digital inputs (8 x M8)



Short description:
DeviceNet is a manufacturer-independent, open CAN-based fieldbus protocol typically used for networking sensors and actuators with higher-level automation devices. It operates in both master-slave and multi-master modes, while active participants communicate via a point-to-point or a multipoint connection.
As a slave, the fieldbus coupler links the WAGO SPEEDWAY 767 system to DeviceNet. When initializing, the buscoupler determines the station's module structure and creates a process image of all inputs and outputs.

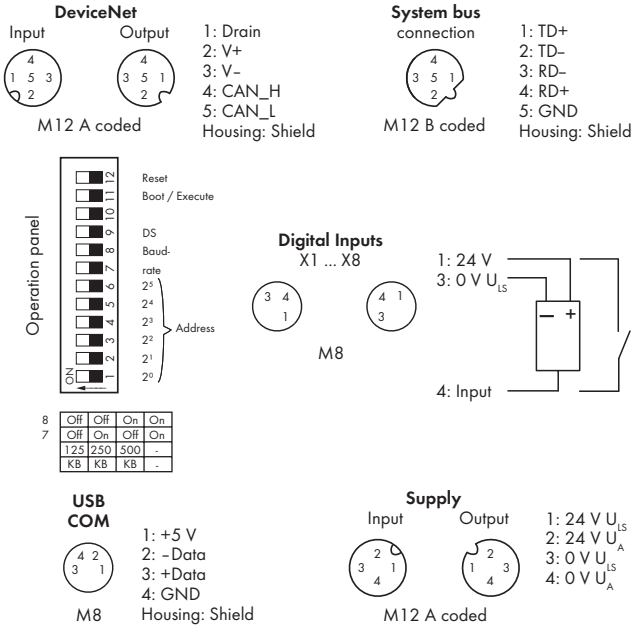
Characteristics:
- 8 digital 24VDC inputs included
- Modular and extendable up to 64 I/O modules (via system bus connection)
- USB interface for servicing purposes
- Parametrization via FDT/DTM (incl. diagnostics and simulation)
- Enclosed operation panel (operating mode and address switch)

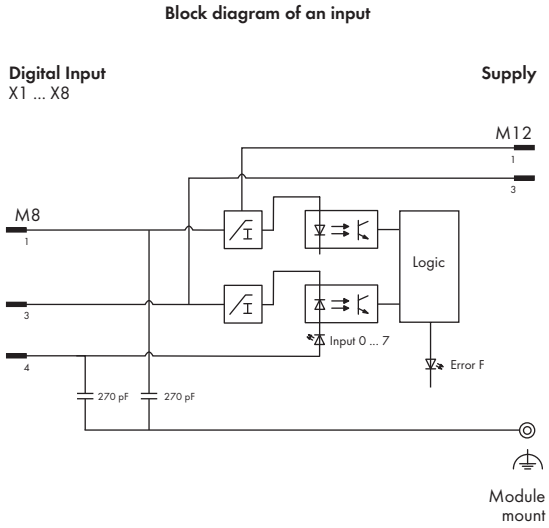
Included:
- Module WMB marker card, yellow (1 pcs)
- Channel marker strips (1 pcs)
- M8 protective caps (2 pcs)

Description	Item No.	Pack. Unit
FC DeviceNet 8DI 24V DC	**767-1401**	1

Accessories	Item No.
DeviceNet cable + accessories	see pages 500 ... 501
System bus/power supply cable + accessories	see pages 502 ... 507 + 516
General accessories	see pages 520 ... 521
EDS files	Download: www.wago.com
DTM (Device Type Manager)	Download: www.wago.com

Technical Data	
Fieldbus:	
Device type	DevieNet Slave
Connection type (4)	M12 connectors, A coded, 5 poles
Baud rate	125/ 250/ 500 Kbit/s
Transmission medium	Copper cable
Station address	0-63 (adjustable via operation panel)
Additional data	see manual
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %);
	Also required for power supply transmission
Supply current	
Logic and sensor current I_{LS}	typ. 80 mA + sensors (max. 400 mA)
Actuator current I_A	5mA
Protection	Reverse voltage protection for U_{LS} + U_A;
	short circuit protection for sensor supply





Technical Data

Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
System bus:	
Number of expendable modules	64
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus, fieldbus	500 V DC each
Service:	
Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles
Standards and approvals:	
DeviceNet	IEC62026-3, EN50325-2
Conformity marking	CE
Korea Certification	
UL 508	
Configurable functions:	
Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit/overload of sensor supply Undervoltage (U_{LS} + U_A)

Technical Data

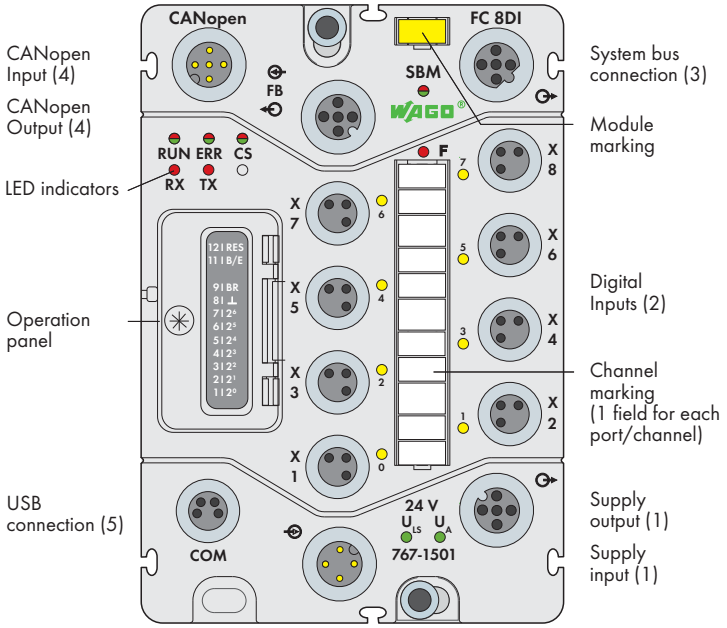
Process image:	
Input process image	2048 bytes
Output process image	2048 bytes
LED indicators:	
MS: DeviceNet module status	LED (green/red)
IO: IO status	LED (green/red)
NS: DeviceNet network status	LED (green/red)
MBO: MAC-ID/Baud rate overwritten	LED (orange)
CS : Fieldbus coupler status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	388 g

CANopen Fieldbus Coupler

incl. 8 digital inputs (8 x M8)



Short description:
CANopen is an industrial fieldbus protocol based on the Controller Area Network (CAN) system. CANopen links the WAGO SPEEDWAY 767 system as a slave to the master.
Data is transmitted using PDOs and SDOs. When initializing, the buscoupler determines the station's module structure and creates a process image of all inputs and outputs.
The process image is divided into two data zones containing: data received and data to be sent. Process data is available to the bus participants via object directory.

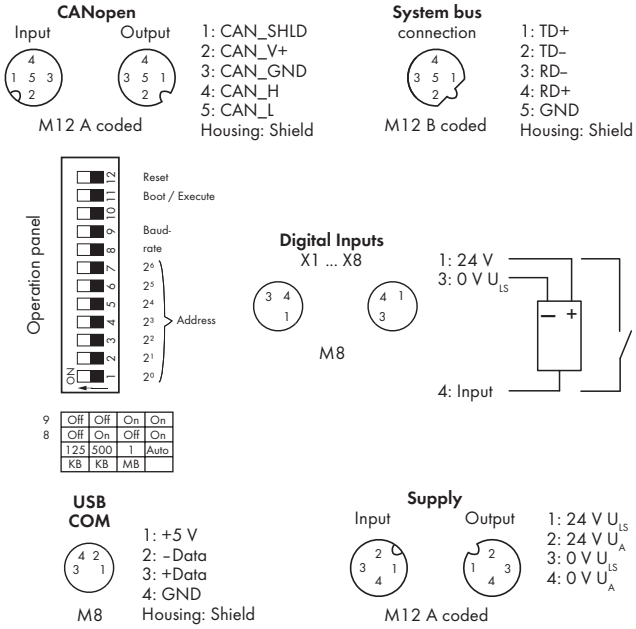
Characteristics:
- 8 digital 24VDC inputs included
- Modular and extendable up to 64 I/O modules (via system bus connection)
- USB interface for servicing purposes
- Parametrization via FDT/DTM (incl. diagnostics and simulation)
- Enclosed operation panel (operating mode and address switch)

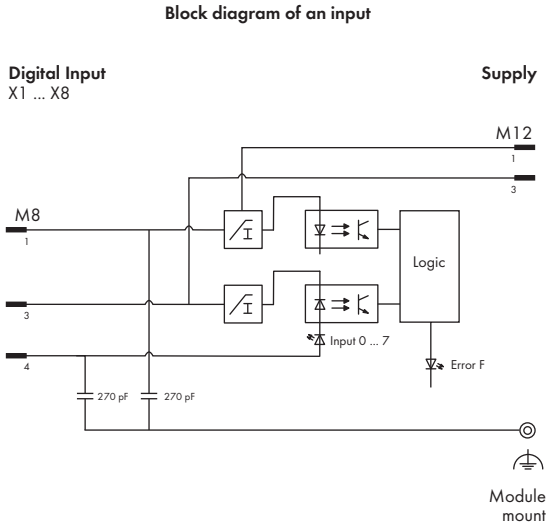
Included:
- Module WMB marker card, yellow (1 pcs)
- Channel marker strips (1 pcs)
- M8 protective caps (2 pcs)

Description	Item No.	Pack. Unit
FC CANopen 8DI 24V DC	**767-1501**	1

Accessories	Item No.
CANopen cable + accessories	see pages 512 ... 513
System bus/power supply cable + accessories	see pages 502 ... 507 + 516
General accessories	see pages 520 ... 521
EDS files	Download: www.wago.com
DTM (Device Type Manager)	Download: www.wago.com

Technical Data	
Fieldbus:	
Device type	CANopen slave
Connection type (4)	M12 connectors, A coded, 5 poles
Baud rate	125/ 500/ 1000 Kbits
	Auto-baudrate detection
Transmission medium	Copper cable
Station address	1-127 (adjustable via operation panel)
Protocols	CANopen acc. to DS-301 V4.01
Additional data	acc. to device profile DS 401 V2.0
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %);
	Also required for power supply transmission
Supply current	
Logic and sensor current I_{LS}	typ. 85 mA + sensors (max. 400 mA)
Actuator current I_A	5mA
Protection	Reverse voltage protection for U_{LS} + U_A;
	short circuit protection for sensor supply





Technical Data

Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
System bus:	
Number of expendable modules	64
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus, fieldbus	500 V DC each
Service:	
Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	
Configurable functions:	
Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit/overload of sensor supply
	Undervoltage (U_{LS} + U_A)

Technical Data

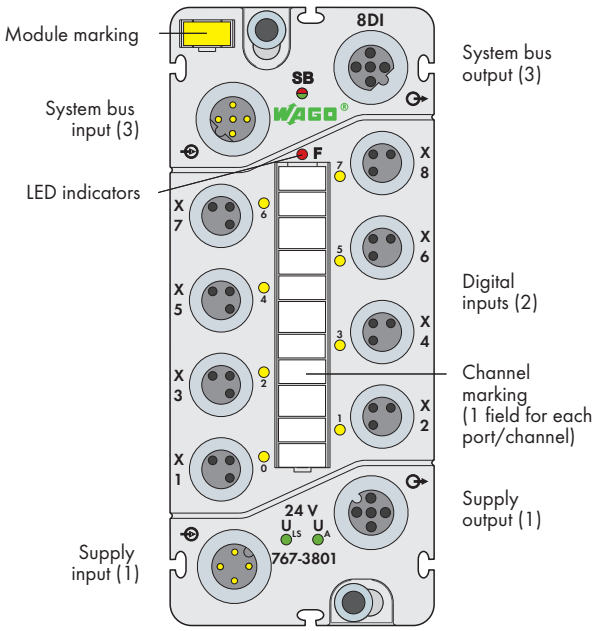
Process image:	
Input process image	512 bytes
Output process image	512 bytes
LED indicators:	
RUN: CANopen status	LED (green)
RX: CANopen receiver buffer	LED (red)
ERR: CANopen bus error	LED (red)
TX: CANopen transmit buffer	LED (red)
CS : Fieldbus coupler status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	377 g

Digital Input Module 24 V DC

8 inputs (8 x M8)



Short description:
This digital input module records binary signals from switches, sensors and proximity switches (BEROs).

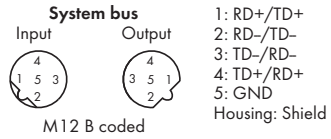
Included:
- 1 x WMB marker, yellow
- 1 x marking strip
- 2 x M8 protective cap

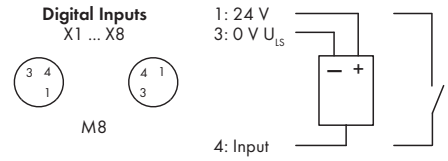
Characteristics:
- 8 digital inputs, 24VDC
- Diagnostic capable (per module)
- Parametrizable (filter, inversion, online simulation and diagnostics)

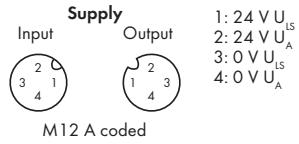
Description	Item No.	Pack. Unit
8DI 24V DC (8xM8)	**767-3801**	1

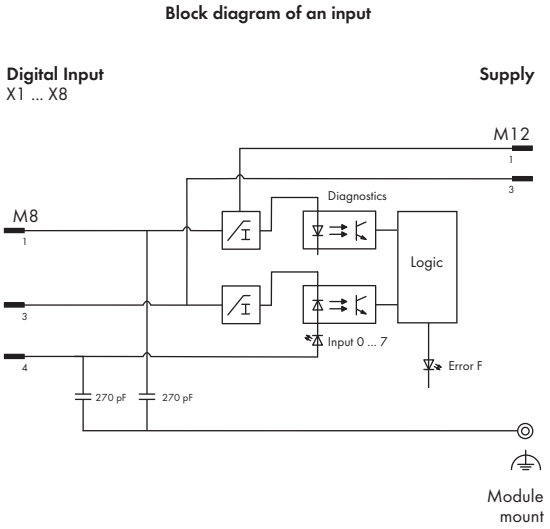
Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %);
	Also required for power supply transmission
Supply current	
Logic and sensor current I_{LS}	typ. 40 mA + sensors (max. 400 mA)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{LS} + U_A;
	short circuit protection for sensor supply
Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Input filter	Hardware: ≤ 80 µs
	Software: parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+11 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	7.3 mA
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect









Technical Data

Input characteristic:	
Input voltage	Typical input current
-30 V DC < U_{IN} < 0 V DC	0
5 V	2.4 mA
11 V	6.4 mA
24 V	7.3 mA
30 V	7.4 mA
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	

Technical Data

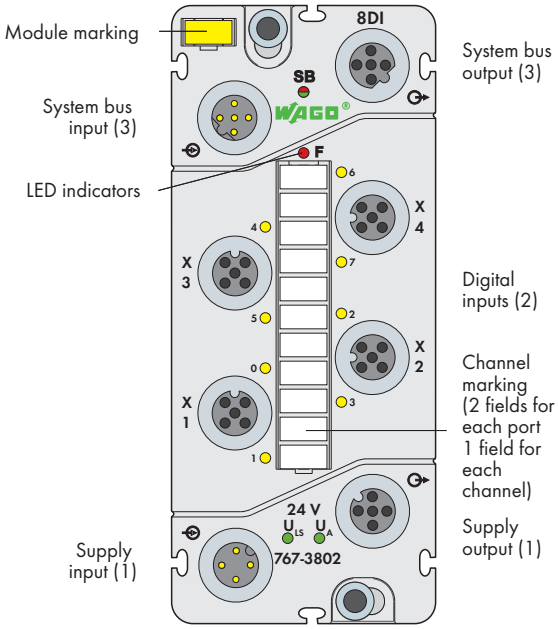
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit/overload of sensor supply
	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

Digital Input Module 24 V DC

8 inputs (4 x M12, two outputs per connector)



Short description:
Digital input module records binary signals from switches, sensors and proximity switches (BEROs).

Characteristics:
- 8 digital inputs DC 24 V
- Diagnostic capable (per module)
- Parametrizable (filter, inversion, online simulation and diagnostics)

Included:
- Module WMB marker card, yellow (1 pcs)
- Marker strips (1 pcs)
- M12 protective caps (2 pcs)

Description	Item No.	Pack. Unit
8DI 24V DC (4xM12)	**767-3802**	1

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %);
	Also required for power supply transmission
Supply current	
Logic and sensor current I_{LS}	typ. 40 mA + sensors (max. 400 mA)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{LS} + U_A;
	short circuit protection for sensor supply
Digital inputs:	
Number of inputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Input filter	Hardware: ≤ 80 µs
	Software: parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+11 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	7.3 mA
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect

System bus

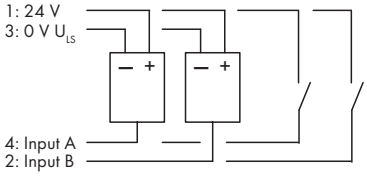
Input Output

M12 B coded

1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield

Digital Inputs X1 ... X4
(two intputs/connector)

M12 A coded



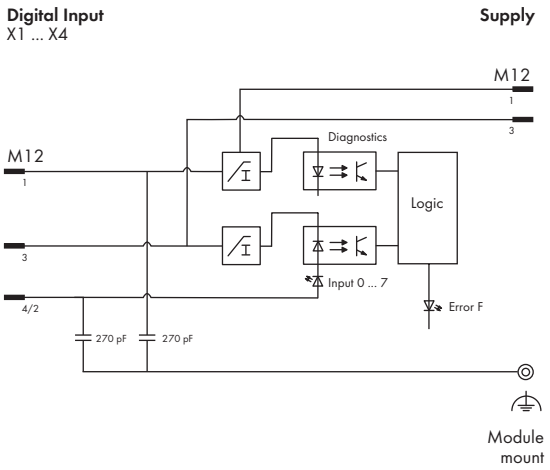
Supply

Input Output

M12 A coded

1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an input



Technical Data

Input characteristic:	
Input voltage	Typical input current
-30 V DC < U_{IN} < 0 V DC	0
5 V	2.4 mA
11 V	6.4 mA
24 V	7.3 mA
30 V	7.4 mA
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	

Technical Data

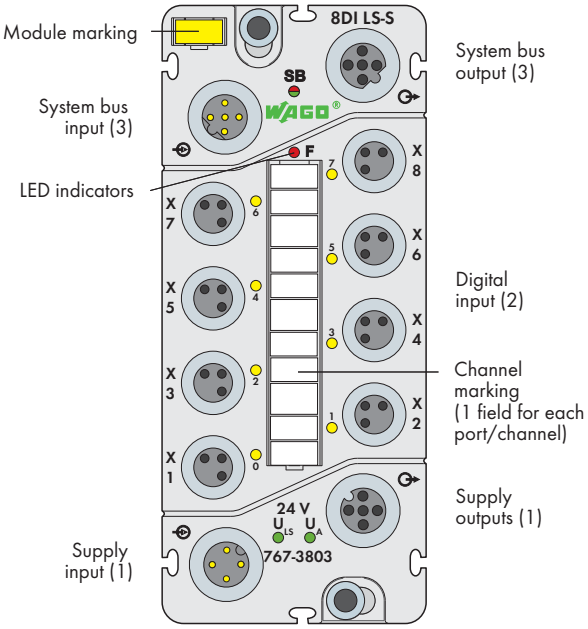
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit/overload of sensor supply
	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	282 g

Digital Input Module 24 V DC

8 inputs (8 x M8), low-side switching



Short description:
This digital input module records binary signals from switches, sensors and proximity switches (BEROs).

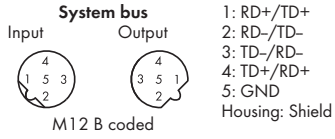
Characteristics:
- 8 digital inputs DC 24 V, low-side switching
- Diagnostic capable (per module)
- Parametrizable (filter, inversion, online simulation and diagnostics)

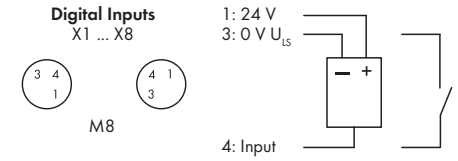
Included:
- Module WMB marker card, yellow
- Marker strip
- M8 protective caps (2 pcs)

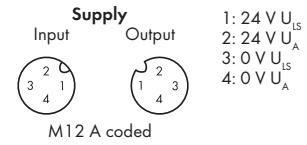
Description	Item No.	Pack. Unit
8DI 24V DC LS SWITCH (8xM8)	**767-3803**	1

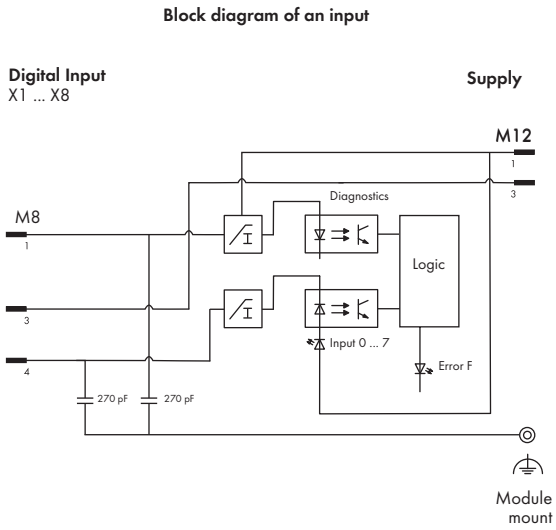
Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %);
	Also required for power supply transmission
Supply current	
Logic and sensor current I_{LS}	Typ. 40 mA + sensors (max. 400 mA)
Actuator current I_A	5mA
Protection	Reverse voltage protection for U_{LS} + U_A;
	Short circuit protection for sensor supply
Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Input filter	HW: ≤ 80 µs
	SW: parametrizable
Signal voltage (0)	(U_{LS} - 5V) ... U_{LS}
Signal voltage (1)	- 3V ... (U_{LS} - 11V)
Input wiring	Low-side switching
Input voltage	24 V DC (-3 V DC < U_{IN} < +30 V DC)
Input current (typ.)	7mA
Connection of 2-wire BEROs	Permitted bias current: max. 1.5 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect









Technical Data

Input characteristic:	
Input voltage	Typical input current
U_{IN}	0mA
U_{IN} - 5V	2.2 mA
U_{IN} - 11V	6.1 mA ... 6.3 mA
-3 V < U_{IN} < 0 V	7mA
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	

Technical Data

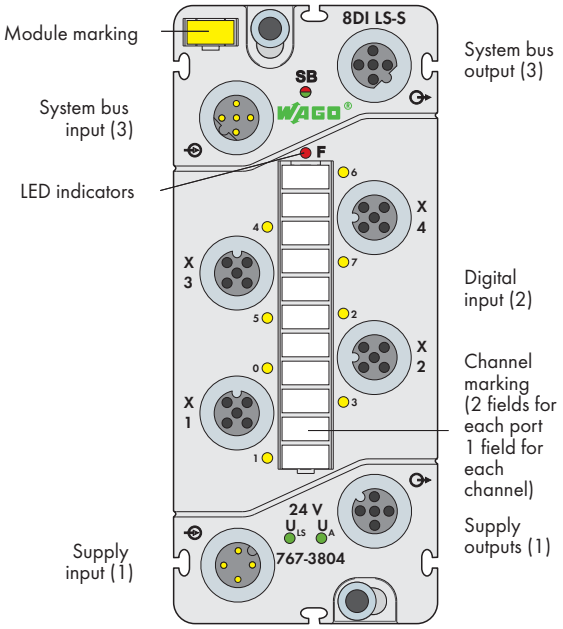
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit/overload of sensor supply
	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

Digital Input Module 24 V DC

8 inputs (4 x M12, two inputs per connector), low-side switching



Short description:
This digital input module records binary signals from switches, sensors and proximity switches (BEROs).

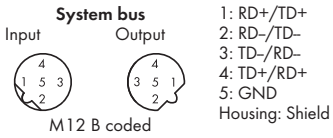
Characteristics:
- 8 digital inputs DC 24 V, low-side switching
- Diagnostic capable (per module)
- Parametrizable (filter, inversion, online simulation and diagnostics)

Included:
- Module WMB marker card, yellow
- Marker strip
- M12 protective caps (2 pcs)

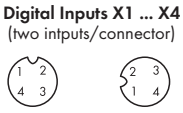
Description	Item No.	Pack. Unit
8DI 24V DC LS SWITCH (4xM12)	**767-3804**	1

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %);
	Also required for power supply transmission
Supply current	
Logic and sensor current I_{LS}	Typ. 40 mA + sensors (max. 400 mA)
Actuator current I_A	5mA
Protection	Reverse voltage protection for U_{LS} + U_A;
	Short circuit protection for sensor supply
Digital inputs:	
Number of inputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Input filter	HW: ≤ 80 µs
	SW: parametrizable
Signal voltage (0)	(U_{LS} - 5V) ... U_{LS}
Signal voltage (1)	- 3V ... (U_{LS} - 11V)
Input wiring	Low-side switching
Input voltage	24 V DC (-3 V DC < U_{IN} < +30 V DC)
Input current (typ.)	7mA
Connection of 2-wire BEROs	Permitted bias current: max. 1.5 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect

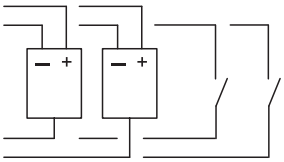


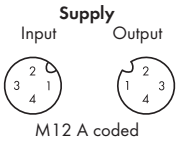
1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield



1: 24 V
3: 0 V U_{LS}

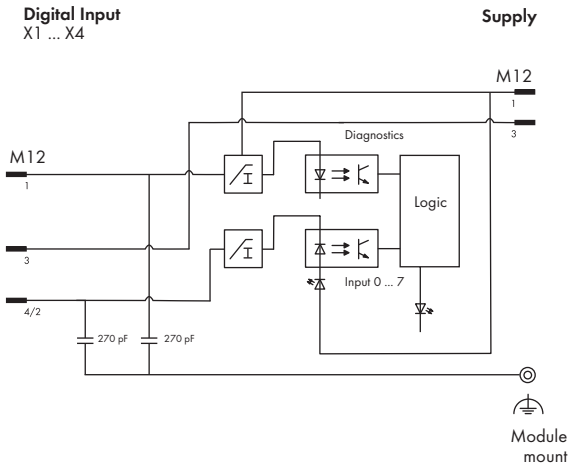
4: Input A
2: Input B





1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an input



Technical Data

Input characteristic:	
Input voltage	Typical input current
U_{IN}	0mA
U_{IN} - 5V	2.2 mA
U_{IN} - 11V	6.1 mA ... 6.3 mA
-3 V < U_{IN} < 0 V	7mA
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	KC
cULus UL 508	

Technical Data

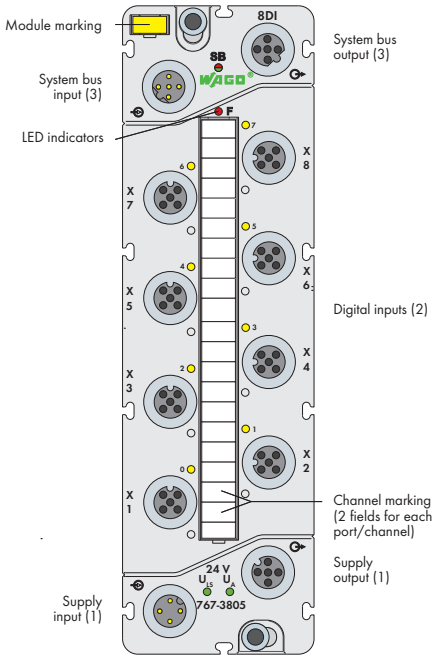
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit/overload of sensor supply
	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

Digital Input Module 24 V DC

8 inputs (8 x M12)



Short description:
This digital input module records binary signals from switches, sensors and proximity switches (BEROs).

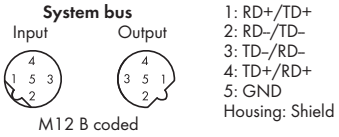
Included:
- 1 x WMB marker, yellow
- 1 x marking strip
- 2 x M12 protective cap

Characteristics:
- 8 digital inputs, 24VDC
- Diagnostic capable (per module)
- Parametrizable (filter, inversion, online simulation and diagnostics)

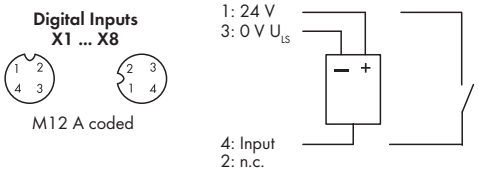
Description	Item No.	Pack. Unit
8DI 24V DC (8xM12)	**767-3805**	1

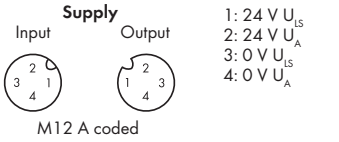
Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %);
	Also required for power supply transmission
Supply current	
Logic and sensor current I_{LS}	typ. 40 mA + sensors (max. 400 mA)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{LS} + U_A
	Short-circuit protection for sensor/actuator
	supply
Digital inputs:	
Number of inputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Input filter	Hardware: ≤ 80 µs
	Software: parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+11 V ... +30 V DC
Input wiring	High-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	7.3 mA
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect



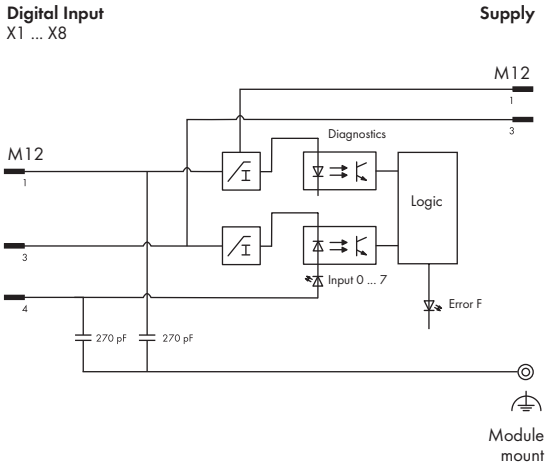
1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield





1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an input



Technical Data

Input characteristic:	
Input voltage	Typical input current
-30 V DC < U_{IN} < 0 V DC	0
5 V	2.4 mA
11 V	6.4 mA
24 V	7.3 mA
30 V	7.4 mA
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	

Technical Data

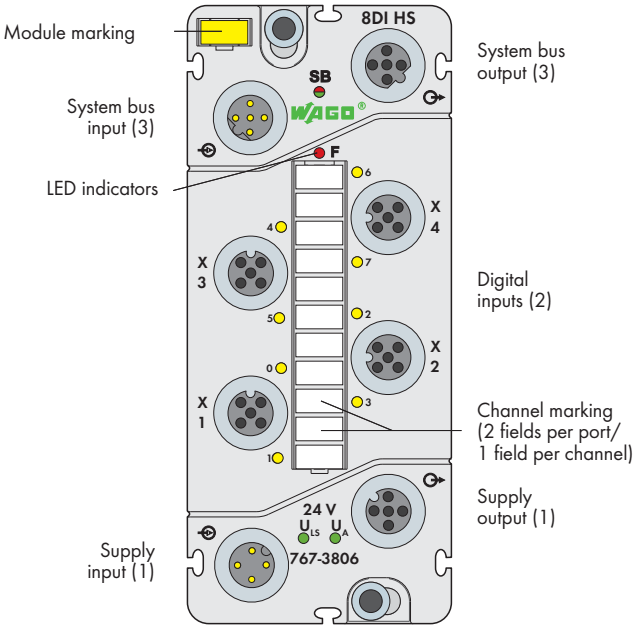
Isolation:	
Channel – Channel	no
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit/overload of sensor supply
	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 170
Weight	387 g

Digital Input Module, 24 VDC, High Speed

8 inputs (4 x M12, two inputs per connector)



Short description:
This digital input module records binary signals from sensors with short response times.
The 767-3806 Module features high-speed inputs, making it ideal for use with fast ETHERNET-based fieldbus systems (e.g., sercos).

Included:
- 1 x WMB marker, yellow
- 1 x marking strip
- 2 x M12 protective cap

Features:
- 8 digital inputs, 24 VDC
- Front-end cycle time (hardware) max. 6 µs
- Diagnostic-capable (module by module)
- Parametrizable (filter, inversion, online simulation and diagnostics)

Description	Item No.	Pack. Unit
8DI 24VDC HS (4xM12)	**767-3806**	1

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %);
	Also required for power supply transmission
Supply current	
Logic and sensor current I_{LS}	typ. 45 mA + sensors (max. 1.0 A)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{LS} + U_A;
	short circuit protection for sensor supply
Digital inputs:	
Number of inputs	8
Connection type (2)	M12 connectors, A coded, 5 poles,
	shielded
Wire connection	2- or 3-wire
Front-end cycle time (hardware)	max. 6 µs
Front-end jitter/skew (input)	< 2 µs
Input characteristic	Type 3, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+11 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 VDC (-3 VDC < U_{IN} < +30 VDC)
Input current (typ.)	2.8 mA
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect

System bus

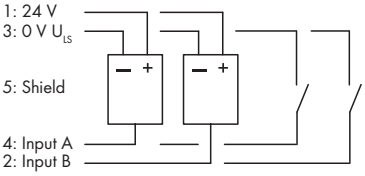
Input Output

M12 B coded

1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield

Digital Inputs X1 ... X4
(two intputs/connector)

M12 A coded



1: 24 V
3: 0 V U_{LS}
5: Shield
4: Input A
2: Input B
Housing: Shield

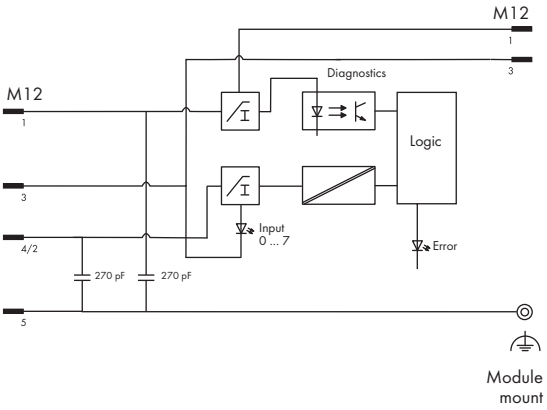
Supply

Input Output

M12 A coded

1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an input



Technical Data

Input characteristic:	
Input voltage	Typical input current
0 V	0 mA
5 V	1.6 mA
11 V	2.7 mA
24 V	2.8 mA
30 V	2.8 mA
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
Conformity marking	CE
cULus UL 508	

Technical Data

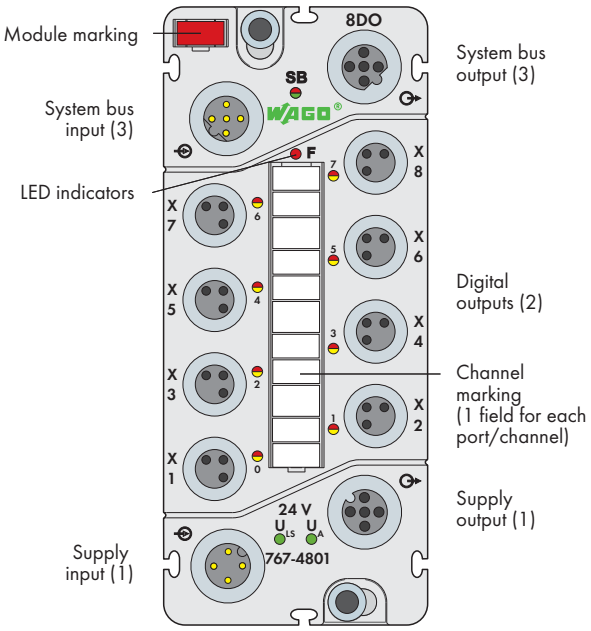
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus	500 VDC each
Configurable functions:	
Input filter (per channel)	10/ 25/ 50/ 100/ 200 µs/ 1/ 3 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit/overload of sensor supply
	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

Digital Output Module 24 V DC / 0.5 A

8 outputs (8 x M8)



Short description:
Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

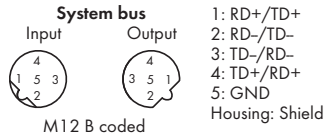
Features:
- 8 digital outputs, 24 VDC / 0.5 A
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, manual mode, online simulation and diagnostics)

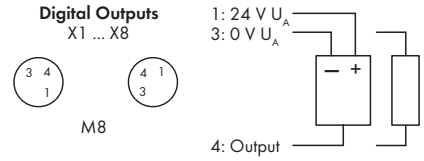
Included:
- 1 x WMB marker, red
- 1 x marking strip
- 2 x M8 protective cap

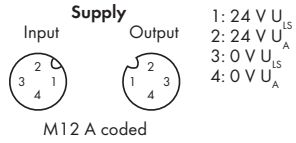
Description	Item No.	Pack. Unit
8DO 24V DC 0.5A (8xM8)	**767-4801**	1
8DO 24V DC 0.5A IF (8xM8)*	**767-4801/000-800**	1
* Interference-free for safety function applications (see manual)		

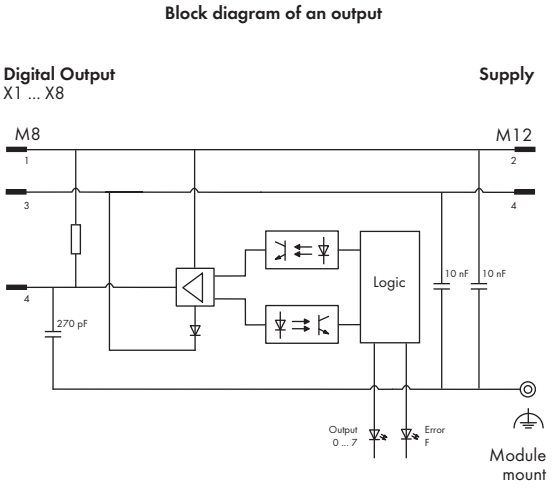
Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 45 mA (only logic part)
Actuator current I_A	typ. 25 mA + actuators
Protection	Reverse voltage protection for U_{LS} + U_A
Digital outputs:	
No. of outputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Output voltage	≤ U_A
Output current (per channel)	0.5 A (max. 0.6 A),
	short-circuit/overload proof
	(thermal disconnection)
Voltage drop against U_A at 500 mA	Max. 0.2 V DC
Output current (module)	max. 4 A
Leakage current in OFF state	typ. 150 µA
Output circuit	High-side switching









Technical Data

Information on actuator selection:	
Delay time hardware from "0" to "1"	
(0 – 90%)	Typ. 75 µs (resistive load)
Delay time hardware from "1" to "0"	
(0 – 90%)	Typ. 270 µs (resistive load)
Rise time from "0" to "1"	typ. 40 µs (resistive load)
Fall time from "1" to "0"	Typ. 50 µs (resistive load)
Cable length, unshielded	≤ 30 m
Protection against reverse voltages	≤ 0.5 A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz
	Resistive load approx. 500 Hz
	Lamp load approx. 500 Hz
Parallel connection of 2 outputs	for power boost
	for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Fieldbus disruption	Acc. to substitute value strategy
S-bus (system bus) disruption	0 V status
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles,
	shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	

Technical Data

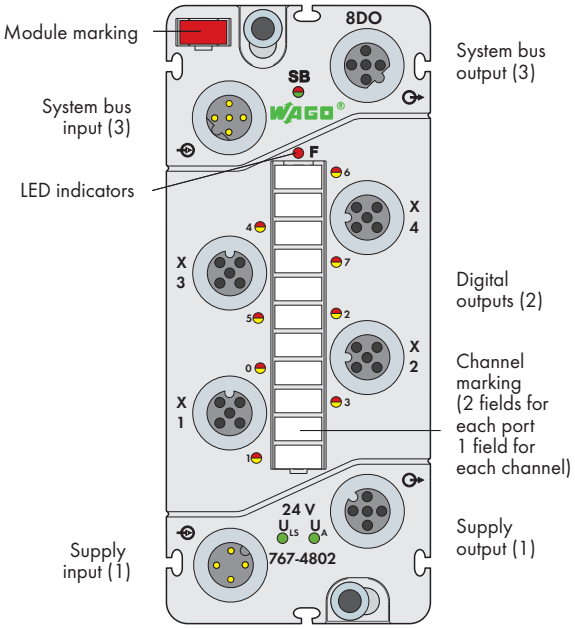
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/	
module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Actuator short-circuit/overload
	Actuator wire break
	Overtemperature
I/O diagnostics (per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

Digital Output Module 24 V DC / 0.5 A

8 outputs (4 x M12, two outputs per connector)



Short description:
Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

Features:
- 8 digital outputs, 24 VDC / 0.5 A
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, manual mode, online simulation and diagnostics)

Included:
- 1 x WMB marker, red
- 1 x marking strip
- 2 x M12 protective cap

Description	Item No.	Pack. Unit
8DO 24V DC 0.5A (4xM12)	**767-4802**	1
8DO 24V DC 0.5A IF (4xM12)*	**767-4802/000-800**	1
* Interference-free for safety function applications (see manual)		

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 45 mA (only logic part)
Actuator current I_A	typ. 25 mA + actuators
Protection	Reverse voltage protection for U_{LS} + U_A
Digital outputs:	
No. of outputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Output voltage	≤ U_A
Output current (per channel)	0.5 A (max. 0.6 A),
	short-circuit/overload proof
	(thermal disconnection)
Voltage drop against U_A at 500 mA	Max. 0.2 V DC
Output current (module)	max. 4 A
Leakage current in OFF state	typ. 150 µA
Output circuit	High-side switching

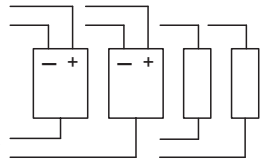
System bus

M12 B coded

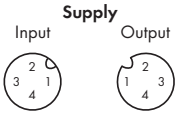
1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield

Digital Outputs X1 ... X4
(two outputs/connector)

M12 A coded



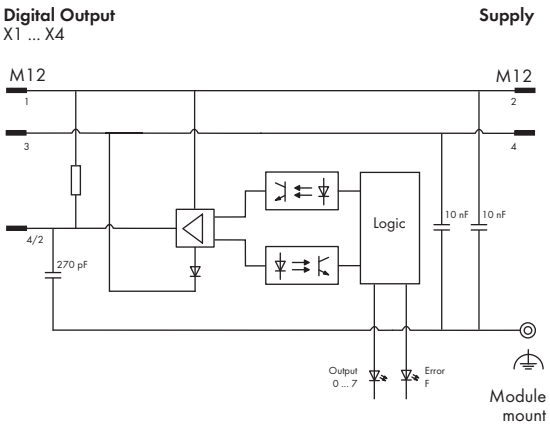
Supply



M12 A coded

1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an output



Technical Data

Information on actuator selection:	
Delay time hardware from "0" to "1"	
(0 – 90%)	Typ. 75 µs (resistive load)
Delay time hardware from "1" to "0"	
(0 – 90%)	Typ. 270 µs (resistive load)
Rise time from "0" to "1"	Typ. 40 µs (resistive load)
Fall time from "1" to "0"	Typ. 50 µs (resistive load)
Cable length, unshielded	≤ 30 m
Protection against reverse voltages	≤ 0.5 A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz
	Resistive load approx. 500 Hz
	Lamp load approx. 500 Hz
Parallel connection of 2 outputs	for power boost
	for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Fieldbus disruption	Acc. to substitute value strategy
S-bus (system bus) disruption	0 V status
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles,
	shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	

Technical Data

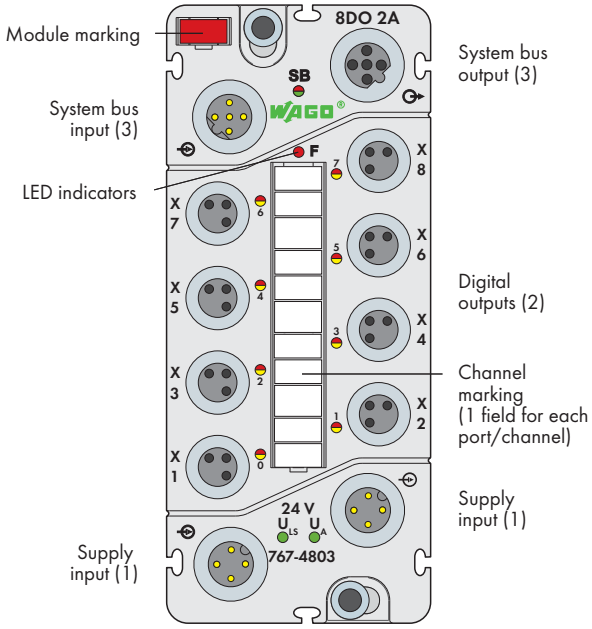
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/	
module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Actuator short-circuit/overload
	Actuator wire break
	Overtemperature
I/O diagnostics (per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	260 g

Digital Output Module 24 V DC / 2.0 A

8 outputs (8 x M8)



Short description:
Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

Features:
- 8 digital outputs, 24 VDC / 2.0 A
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, manual mode, online simulation and diagnostics)

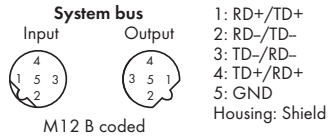
Included:
- 1 x WMB marker, red
- 1 x marking strip
- 2 x M8 protective cap

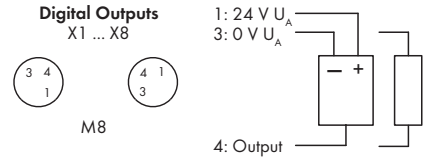
Note:
Due to high output current, the module is equipped with two M12 supply inputs. This is why power cannot be supplied to the next module.

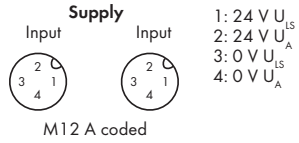
Description	Item No.	Pack. Unit
8DO 24V DC 2.0A (8xM8)	**767-4803**	1
8DO 24V DC 2.0A IF (8xM8)*	**767-4803/000-800**	1
* Interference-free for safety function applications (see manual)		

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

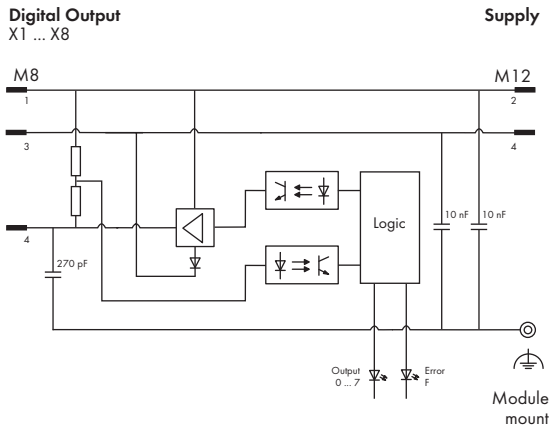
Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 45 mA (only logic part)
Actuator current I_A	typ. 55 mA + actuators
Protection	Reverse voltage protection for U_{LS} + U_A
Digital outputs:	
No. of outputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Output voltage	≤ U_A
Output current (per channel)	2.0 A (max. 2.4 A),
	short-circuit/overload proof
	(thermal disconnection)
Voltage drop against U_A at 2.0 A	Max. 0.2 V DC
Output current (module)	max. 8 A
Leakage current in OFF state	typ. 780 µA
Output circuit	High-side switching







Block diagram of an output



Technical Data

Information on actuator selection:	
Delay time hardware from "0" to "1"	
(0 – 90%)	Typ. 75 µs (resistive load)
Delay time hardware from "1" to "0"	
(0 – 90%)	Typ. 265 µs (resistive load)
Rise time from "0" to "1"	Typ. 30 µs (resistive load)
Fall time from "1" to "0"	Typ. 50 µs (resistive load)
Cable length, unshielded	≤ 30 m
Protection against reverse voltages	≤ 2 A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz
	Resistive load approx. 500 Hz
	Lamp load approx. 500 Hz
Parallel connection of 2 outputs	for power boost
	for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
	required
Output resistance	max. 0.1 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Fieldbus disruption	Acc. to substitute value strategy
S-bus (system bus) disruption	0 V status
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles,
	shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	

Technical Data

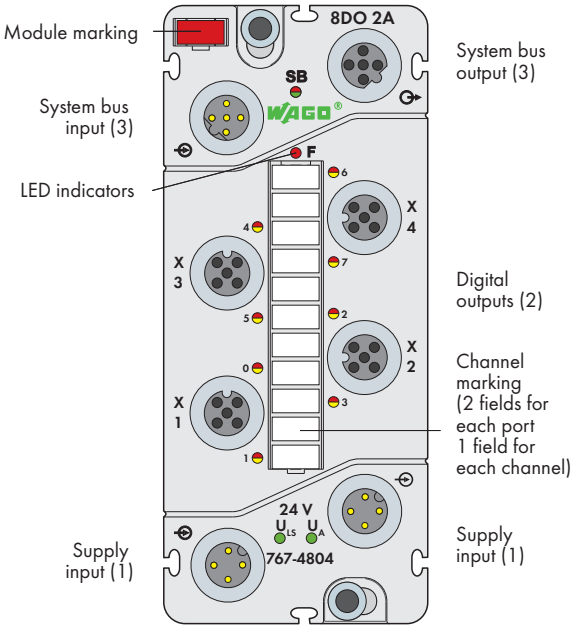
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/	
module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Actuator short-circuit/overload
	Actuator wire break
	Overtemperature
I/O diagnostics (per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	277 g

Digital Output Module 24 V DC / 2.0 A

8 outputs (4 x M12, two outputs per connector)



Short description:
Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

Characteristics:
- 8 digital outputs DC 24 V / 2.0 A
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, manual mode, online simulation and diagnostics)

Included:
- Module WMB marker card, red (1 pcs)
- Marker strips (1 pcs)
- M8 protective caps (2 pcs)

Description	Item No.	Pack. Unit
8DO 24V DC 2.0A (4xM12)	**767-4804**	1
8DO 24V DC 2.0A IF (4xM12)*	**767-4804/000-800**	1
* Interference-free for safety function applications (see manual)		

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 45 mA (only logic part)
Actuator current I_A	typ. 55 mA + actuators
Protection	Reverse voltage protection for U_{LS} + U_A
Digital outputs:	
No. of outputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Output voltage	≤ U_A
Output current (per channel)	2.0 A (max. 2.4 A),
	short-circuit/overload proof
	(thermal disconnection)
Voltage drop against U_A at 2.0 A	Max. 0.2 V DC
Output current (module)	max. 8 A
Leakage current in OFF state	typ. 780 µA
Output circuit	High-side switching

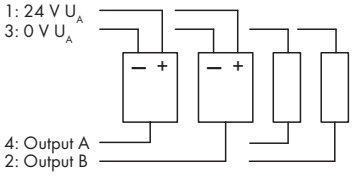
System bus

M12 B coded

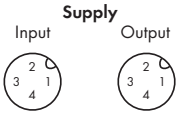
1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield

Digital Outputs X1 ... X4
(two outputs/connector)

M12 A coded



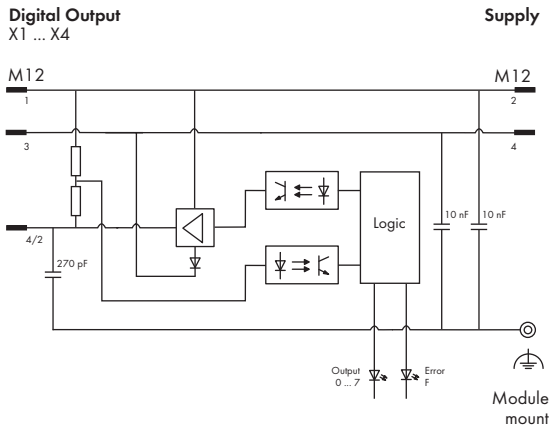
Supply



M12 A coded

1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an output



Technical Data

Information on actuator selection:	
Delay time hardware from "0" to "1"	
(0 – 90%)	Typ. 75 µs (resistive load)
Delay time hardware from "1" to "0"	
(0 – 90%)	Typ. 265 µs (resistive load)
Rise time from "0" to "1"	Typ. 30 µs (resistive load)
Fall time from "1" to "0"	Typ. 50 µs (resistive load)
Cable length, unshielded	≤ 30 m
Protection against reverse voltages	≤ 2 A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz
	Resistive load approx. 500 Hz
	Lamp load approx. 500 Hz
Parallel connection of 2 outputs	for power boost
	for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
	required
Output resistance	max. 0.1 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Fieldbus disruption	Acc. to substitute value strategy
S-bus (system bus) disruption	0 V status
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles,
	shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	

Technical Data

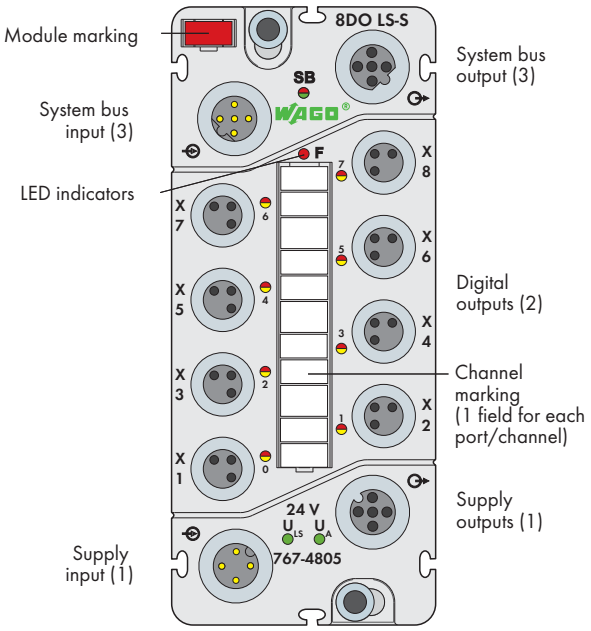
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/	
module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Actuator short-circuit/overload
	Actuator wire break
	Overtemperature
I/O diagnostics (per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	250 g

Digital Output Module 24 V DC / 0.5 A

8 ouputs (8 x M8), low-side switching



Short description:
Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

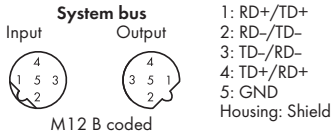
Features:
- 8 digital outputs, 24 V DC / 0.5 A, low-side switching
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, manual mode, online simulation and diagnostics)

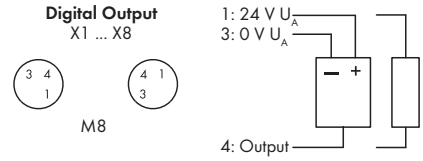
Included:
- 1 x WMB marker, red
- 1 x marking strip
- 2 x M8 protective cap

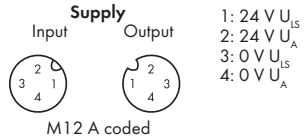
Description	Item No.	Pack. Unit
8DO 24V DC 0.5A LS SWITCH (8xM8)	**767-4805**	1

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

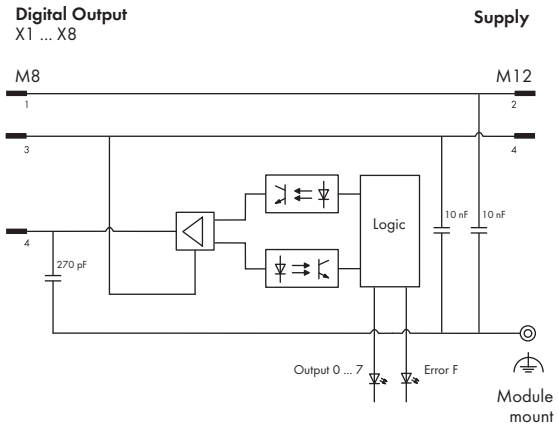
Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	Typ. 40 mA (only logic part)
Actuator current I_A	Typ. 20 mA + actuators
Protection	Reverse voltage protection for U_{LS} + U_A
Digital outputs:	
No. of outputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Output voltage	≥ 0V U_A
Output current (per channel)	0.5 A (max. 0.6 A),
	short-circuit/overload protection
	(thermal shutdown)
Voltage drop against U_A at 500 mA	Max. 0.2 V DC (0 V U_A)
Output current (module)	max. 4 A
Leakage current in OFF state	typ. 150 µA
Output circuit	Low-side switching







Block diagram of an output



Technical Data

Information on actuator selection:	
Delay time hardware from "0" to "1"	
(0 – 90%)	Typ. 75 µs (resistive load)
Delay time hardware from "1" to "0"	
(0 – 90%)	Typ. 270 µs (resistive load)
Rise time from "0" to "1"	Typ. 150 µs (resistive load)
Fall time from "1" to "0"	Typ. 150 µs (resistive load)
Cable length, unshielded	≤ 30 m
Protection against reverse voltages	≤ 0.5 A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz
	Resistive load approx. 500 Hz
	Lamp load approx. 500 Hz
Parallel connection of 2 outputs	For power boost
	For redundant load actuation
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Fieldbus disruption	Acc. to substitute value strategy
S-bus (system bus) disruption	0 V status
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles,
	shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	

Technical Data

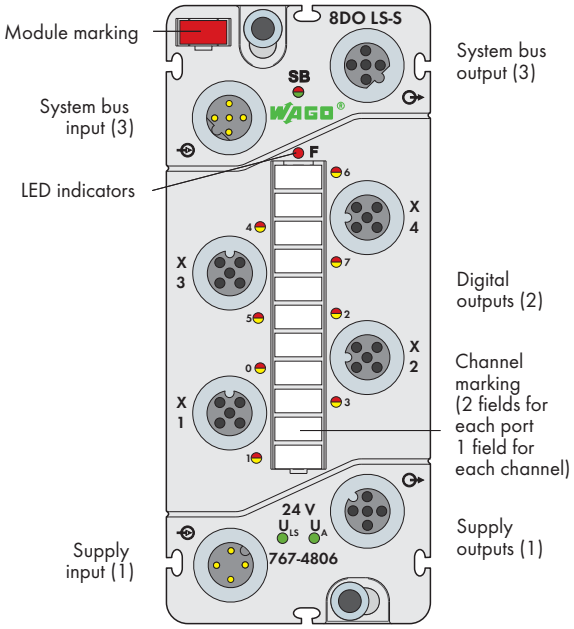
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value / hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/	
module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Overtemperature
I/O diagnostics (per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

Digital Output Module 24 V DC / 0.5 A

8 outputs (4 x M12, two inputs per connector), low-side switching



Short description:
Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

Features:
- 8 digital outputs, 24 V DC / 0.5 A, low-side switching
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, manual mode, online simulation and diagnostics)

Included:
- 1 x WMB marker, red
- 1 x marking strip
- 2 x M12 protective cap

Description	Item No.	Pack. Unit
8DO 24V DC 0.5A (4xM12)	**767-4806**	1

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	Typ. 40 mA (only logic part)
Actuator current I_A	Typ. 20 mA + actuators
Protection	Reverse voltage protection for U_{LS} + U_A
Digital outputs:	
No. of outputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Output voltage	≥ 0V U_A
Output current (per channel)	0.5 A (max. 0.6 A),
	short-circuit/overload protection
	(thermal shutdown)
Voltage drop against U_A at 500 mA	Max. 0.2 V DC (0 V U_A)
Output current (module)	max. 4 A
Leakage current in OFF state	typ. 150 µA
Output circuit	Low-side switching

System bus

Input Output

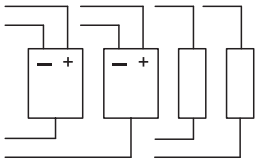
M12 B coded

1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield

Digital Outputs X1 ... X4
(two intputs/connector)

M12 A coded

1: 24 V U_A
3: 0 V U_A



4: Output A
2: Output B

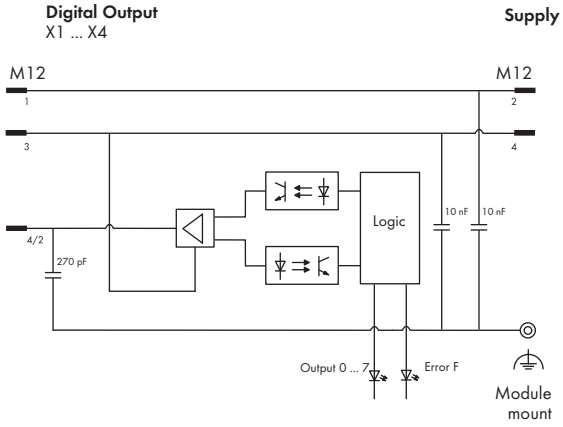
Supply

Input Output

M12 A coded

1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an output



Technical Data

Information on actuator selection:	
Delay time hardware from "0" to "1"	
(0 – 90%)	Typ. 75 µs (resistive load)
Delay time hardware from "1" to "0"	
(0 – 90%)	Typ. 270 µs (resistive load)
Rise time from "0" to "1"	Typ. 150 µs (resistive load)
Fall time from "1" to "0"	Typ. 150 µs (resistive load)
Cable length, unshielded	≤ 30 m
Protection against reverse voltages	≤ 0.5 A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz
	Resistive load approx. 500 Hz
	Lamp load approx. 500 Hz
Parallel connection of 2 outputs	For power boost
	For redundant load actuation
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Fieldbus disruption	Acc. to substitute value strategy
S-bus (system bus) disruption	0 V status
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles,
	shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	

Technical Data

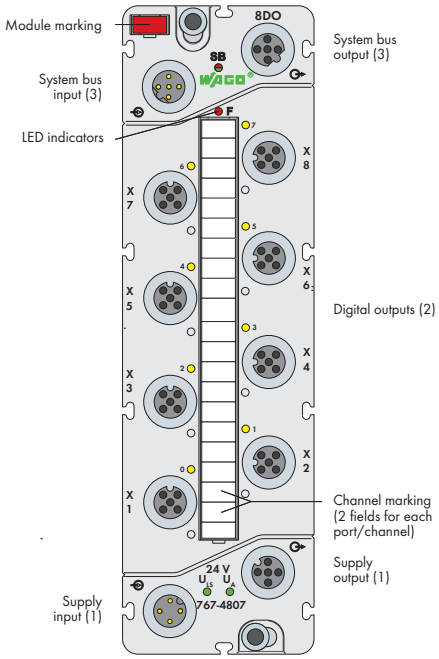
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value / hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/	
module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Overtemperature
I/O diagnostics (per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

Digital Output Module 24 V DC / 0.5 A

8 outputs (8 x M12)



Short description:
Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

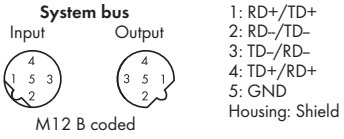
Features:
- 8 digital outputs, 24 VDC / 0.5 A
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, manual mode, online simulation and diagnostics)

Included:
- 1 x WMB marker, red
- 1 x marking strip
- 2 x M12 protective cap

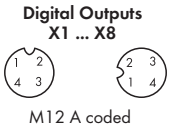
Description	Item No.	Pack. Unit
8DO 24V DC 0.5A (8xM12)	**767-4807**	1
8DO 24V DC 0.5A IF (8xM12)*	**767-4807/000-800**	1
* Interference-free for safety function applications (see manual)		

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

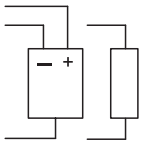
Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ...+30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 45 mA (only logic part)
Actuator current I_A	typ. 25 mA + actuators
Protection	Reverse voltage protection for U_{LS} + U_A
Digital outputs:	
No. of outputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Output voltage	≤ U_A
Output current (per channel)	0.5 A (max. 0.6 A),
	short-circuit/overload proof
	(thermal disconnection)
Voltage drop against U_A at 500 mA	max. 0.2 V DC
Output current (module)	max. 4 A
Leakage current in OFF state	typ. 150 µA
Output circuit	High-side switching



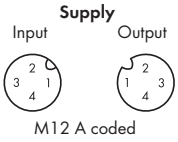
1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield



1: 24 V U_A
3: 0 V U_A

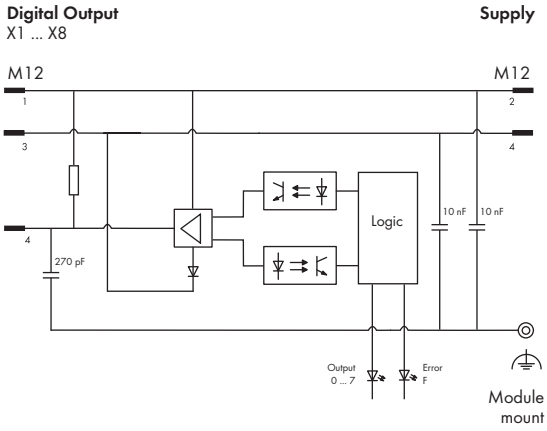


4: Output
2: n.c.



1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an output



Technical Data

Information on actuator selection:	
Delay time hardware from "0" to "1"	
(0 – 90%)	typ. 65 µs (resistive load)
Delay time hardware from "1" to "0"	
(0 – 90%)	typ. 190 µs (resistive load)
Rise time from "0" to "1"	typ. 40 µs (resistive load)
Fall time from "1" to "0"	typ. 50 µs (resistive load)
Cable length, unshielded	≤ 30 m
Protection against reverse voltages	≤ 0.5 A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz
	Resistive load approx. 500 Hz
	Lamp load approx. 500 Hz
Parallel connection of 2 outputs	for power boost
	for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Fieldbus disruption	Acc. to substitute value strategy
S-bus (system bus) disruption	0 V status
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles,
	shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	

Technical Data

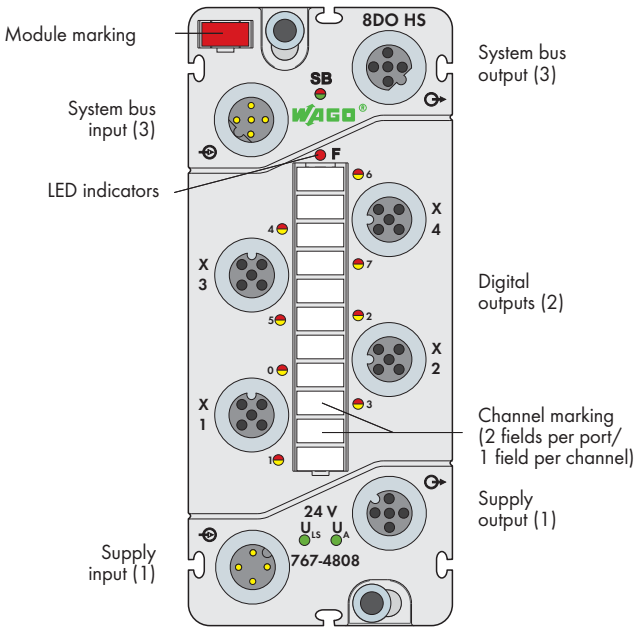
Isolation:	
Channel – Channel	no
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/	
module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Actuator short-circuit/overload
	Actuator wire break
	Overtemperature
I/O diagnostics (per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 170
Weight	385 g

Digital Output Module, 24 VDC, 0.1 A, High Speed

8 outputs (4 x M12, two outputs per connector)



Short description:
This digital output module outputs signals from actuators with short response times. The 767-4808 Module features high-speed outputs, making it ideal for use with fast ETHERNET-based fieldbus systems (e.g., sercos).

Features:
- 8 digital outputs, 24 VDC / 0.1 A
- Front-end cycle time (hardware) max. 0,5 µs
- Diagnostic-capable (channel by channel/module by module)
- Parametrizable (inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

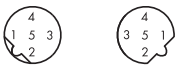
Included:
- 1 x WMB marker, red
- 1 x marking strip
- 2 x M12 protective cap

Description	Item No.	Pack. Unit
8DO 24VDC 0,1A HS (4xM12)	**767-4808**	1

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 40 mA (logic component only)
Actuator current I_A	typ. 35 mA + actuator supply (≤ 1 A) + load
Protection	Reverse voltage protection for U_{LS} + U_A, short-circuit protection for actuator supply
Digital outputs:	
No. of outputs	8
Connection type (2)	M12 connectors, A coded, 5 poles, shielded
Wire connection	2- or 3-wire
Output voltage	≤ U_A
Output current (per channel)	0.1 A, short-circuit/overload proof (thermal disconnection)
Voltage drop against U_A at 500 mA	Max. 1.7 V DC
Output current (module)	max. 0.8 A
Leakage current in OFF state	typ. 50 µA
Output circuit	Push/Pull

System bus



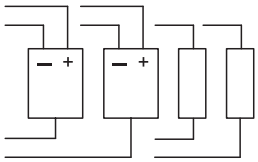
M12 B coded

1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield

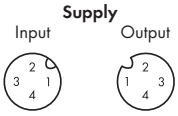
Digital Outputs X1 ... X4
(two outputs/connector)

M12 A coded

1: 24 V
3: 0 V U_A
5: Shield
4: Output A
2: Output B
Housing: Shield



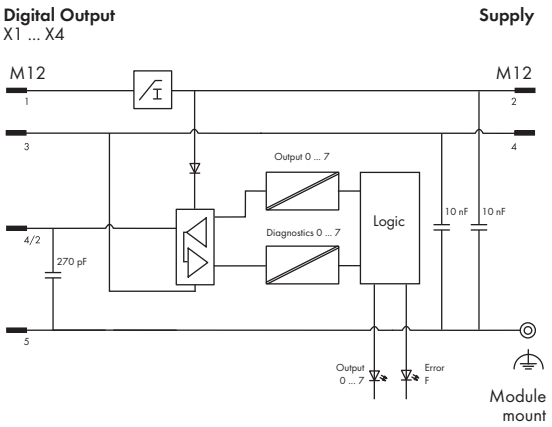
Supply



M12 A coded

1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an output



Technical Data

Information on actuator selection:	
Front-end cycle time 90% (hardware)	max. 0,5 µs
Edge steepness	$T_{ON/OFF}$: typ. < 0,2 µs
Front-end jitter/skew (output)	< 0,2 µs
Protection against reverse voltages	≤ 0.5 A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load upon request
	Resistive load upon request
	Lamp load upon request
Type of protective circuit	External protection (e.g., recovery diodes)
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Fieldbus disruption	Acc. to substitute value strategy
S-bus (system bus) disruption	0 V status
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
Conformity marking	CE
cULus UL 508	

Technical Data

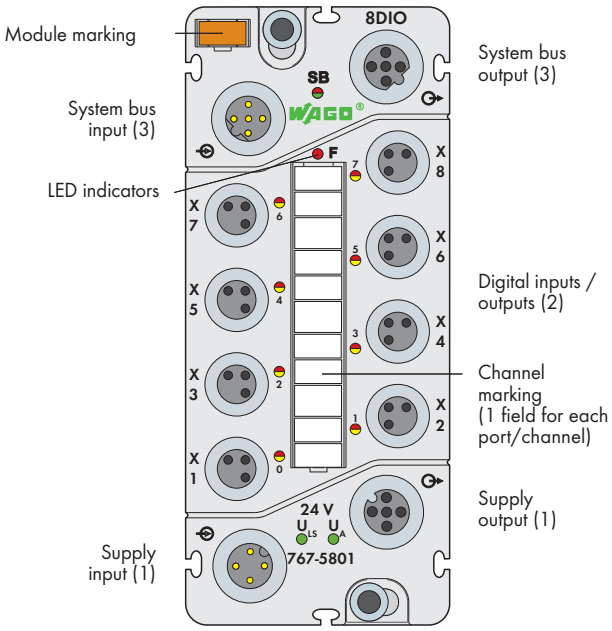
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus	500 VDC each
Configurable functions:	
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/Unlock; simulation value: 0/1;
	diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Overtemperature, actuators
I/O diagnostics (per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

Digital Input/Output Module 24 V DC / 0.5 A

8 inputs/outputs (8 x M8)



Short description:
This digital input/output module records binary signals from switches, sensors and proximity switches (BEROs)*. The module also controls actuators, such as magnetic valves, DC contactors and indicators.

* Does not apply to 767-5801/000-800

Features:
- 8 digital inputs/outputs, 24 VDC / 0.5 A
- Input/output, parametrizable (channel by channel)
- Diagnostic-capable (channel by channel/module by module)
- Parametrizable (operating mode, incl. counter, filter, inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

Included:
- 1 x WMB marker, orange
- 1 x marking strip
- 2 x M8 protective cap

Description	Item No.	Pack. Unit
8DIO 24V DC 0.5A (8xM8)	**767-5801**	1
8DIO 24V DC 0.5A IF (8xM8)**	**767-5801/000-800**	1
** Interference-free for safety function applications (see manual)		

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data

Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ...+30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 45 mA (only logic part)
Actuator current I_A	typ. 75 mA + sensors/actuators
	(max. 800 mA) + load
Protection	Reverse voltage protection for U_{LS} + U_A
	Short-circuit protection for sensor/actuator
	supply

Technical Data

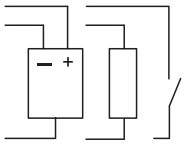
Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Input filter	Hardware: ≤ 110 µs
	Software: parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2 (767-5801)
	Type 1, acc. to IEC 61131-2
	(767-5801/000-800)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+11 ... +30 V DC (767-5801)
	+15 V ... +30 V DC (767-5801/000-800)
Input wiring	High-side switching
Input voltage	24 VDC (-3 VDC < U_{IN} < +30 VDC);
	Power from U_A is strongly recommended,
	recovery for voltages > U_A
Input current (typ.)	7.0 mA (767-5801)
	3.0 mA (767-5801/000-800)
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Cable length, unshielded	≤ 30 m
Input characteristic:	
Input voltage	Typical input current
0 V DC	0
5 V	2.7 mA (767-5801)
	0.6 mA (767-5801/000-800)
11 V	6.8 mA (767-5801)
15 V	2.6 mA (767-5801/000-800)
24 V	7.0 mA (767-5801)
	3.0 mA (767-5801/000-800)
30 V	7.1 mA (767-5801)
	3.2 mA (767-5801/000-800)

System bus

1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield

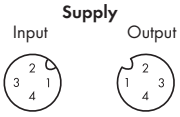
Digital Inputs/Outputs X1 ... X8

1: 24 V
3: 0 V U_A



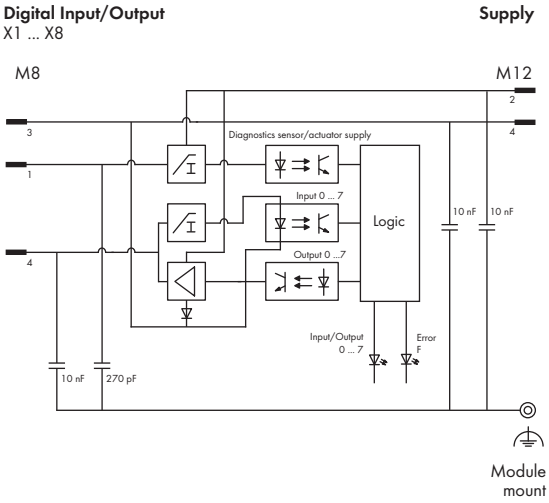
4: In-/Output

Supply



1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an input/output



Technical Data

Digital outputs:	
No. of outputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Output voltage	≤ U_A
Output current (per channel)	0.5 A (max. 0.6 A),
	short-circuit/overload proof
	(thermal disconnection)
Voltage drop against U_A at 500 mA	max. 0.2 V DC
Output current (module)	max. 4 A
Leakage current in OFF state	typ. 5 µA
Output circuit	High-side switching
Information on actuator selection:	
Delay time hardware from "0" to "1"	
(0 – 90%)	typ. 90 µs (resistive load)
Delay time hardware from "1" to "0"	
(0 – 90%)	typ. 310 µs (resistive load)
Rise time from "0" to "1"	typ. 60 µs (resistive load)
Fall time from "1" to "0"	typ. 45 µs (resistive load)
Cable length, unshielded	≤ 30 m
Reverse current (in case of recovery for	
voltages > U_A)	≤ 0,5 A (error: 1 channel)
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz
	Resistive load approx. 500 Hz
	Lamp load approx. 500 Hz
Parallel connection of 2 outputs	for power boost
	for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Fieldbus disruption	Acc. to substitute value strategy
S-bus (system bus) disruption	0 V status
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart

Technical Data

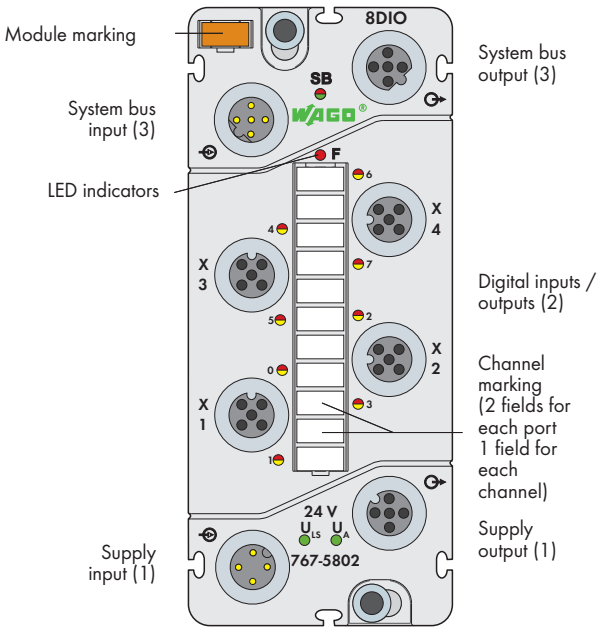
Counters:	
No. of counters	2
Counter type	Event/Gate time counter, pulse duration
Counting/switching frequency	0 Hz ... 1 kHz
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles,
	shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	
Isolation:	
Channel – Channel	no
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Operating mode (per module)	DO-Module/DI-Module/DIO-Module/
	DIO + 1 counter/DIO + 2 counters
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Overtemperature
I/O diagnostics (per module)	Sensor/Actuator supply short-circuit/
	overload; Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	Depends on operating mode
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Input and output signal status	LED (yellow)
0 ... 7: Output diagnostics	LED (red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	260 g

Digital Input/Output Module 24 V DC / 0.5 A

8 inputs/outputs (4 x M12, two inputs/outputs per connector)



Short description:
This digital input/output module records binary signals from switches, sensors and proximity switches (BEROs)*. The module also controls actuators, such as magnetic valves, DC contactors and indicators.

* Does not apply to 767-5802/000-800

Features:
- 8 digital inputs/outputs, 24 VDC / 0.5 A
- Input/output, parametrizable (channel by channel)
- Diagnostic-capable (channel by channel/module by module)
- Parametrizable (operating mode, incl. counter, filter, inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

Included:
- 1 x WMB marker, orange
- 1 x marking strip
- 2 x M12 protective cap

Description	Item No.	Pack. Unit
8DIO 24V DC 0.5A (4xM12)	**767-5802**	1
8DIO 24V DC 0.5A IF (4xM12)**	**767-5802/000-800**	1
** Interference-free for safety function applications (see manual)		

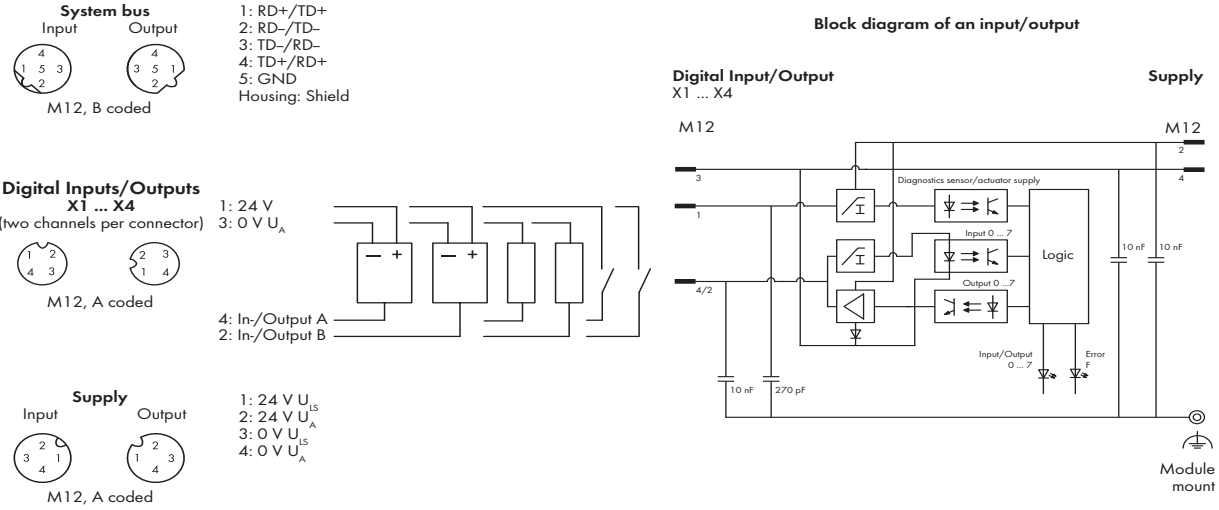
Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data

Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ...+30 %)
Actuator voltage U_A	24 V DC (-25 % ...+30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 45 mA (only logic part)
Actuator current I_A	typ. 75 mA + sensors/actuators
	(max. 800 mA) + load
Protection	Reverse voltage protection for U_{LS} + U_A
	Short-circuit protection for sensor/actuator
	supply

Technical Data

Digital inputs:	
Number of inputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Input filter	Hardware: ≤ 110 µs
	Software: parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2 (767-5802)
	Type 1, acc. to IEC 61131-2
	(767-5802/000-800)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+11 ... +30 V DC (767-5802)
	+15 V ... +30 V DC (767-5802/000-800)
Input wiring	High-side switching
Input voltage	24 VDC (-3 VDC < U_{IN} < +30 VDC); Power
	from U_A is strongly recommended, recovery
	for voltages > U_A
Input current (typ.)	7.0 mA (767-5802)
	3.0 mA (767-5802/000-800)
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Cable length, unshielded	≤ 30 m
Input characteristic:	
Input voltage	Typical input current
0 V DC	0
5 V	2.7 mA (767-5802)
	0.6 mA (767-5802/000-800)
11 V	6.8 mA (767-5802)
15 V	2.6 mA (767-5802/000-800)
24 V	7.0 mA (767-5802)
	3.0 mA (767-5802/000-800)
30 V	7.1 mA (767-5802)
	3.2 mA (767-5802/000-800)



Technical Data

Digital outputs:	
No. of outputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Output voltage	≤ U_A
Output current (per channel)	0.5 A (max. 0.6 A),
	short-circuit/overload proof
	(thermal disconnection)
Voltage drop against U_A at 500 mA	max. 0.2 V DC
Output current (module)	max. 4 A
Leakage current in OFF state	typ. 5 µA
Output circuit	High-side switching
Information on actuator selection:	
Delay time hardware from "0" to "1"	
(0 – 90%)	typ. 90 µs (resistive load)
Delay time hardware from "1" to "0"	
(0 – 90%)	typ. 310 µs (resistive load)
Rise time from "0" to "1"	typ. 60 µs (resistive load)
Fall time from "1" to "0"	typ. 45 µs (resistive load)
Cable length, unshielded	≤ 30 m
Reverse current (in case of recovery for	
voltages > U_A)	≤ 0,5 A (error: 1 channel)
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz
	Resistive load approx. 500 Hz
	Lamp load approx. 500 Hz
Parallel connection of 2 outputs	for power boost
	for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Fieldbus disruption	Acc. to substitute value strategy
S-bus (system bus) disruption	0 V status
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart

Technical Data

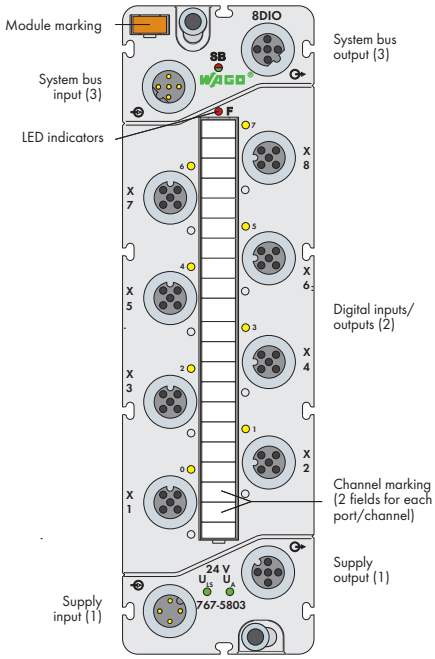
Counters:	
No. of counters	2
Counter type	Event/Gate time counter, pulse duration
Counting/switching frequency	0 Hz ... 1 kHz
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles,
	shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	
Isolation:	
Channel – Channel	no
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Operating mode (per module)	DO-Module/DI-Module/DIO-Module/
	DIO + 1 counter/DIO + 2 counters
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Overtemperature
I/O diagnostics (per module)	Sensor/Actuator supply short-circuit/
	overload; Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	Depends on operating mode
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Input and output signal status	LED (yellow)
0 ... 7: Output diagnostics	LED (red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	255 g

Digital Input/Output Module 24 V DC / 0.5 A

8 inputs/outputs (8 x M12)



Short description:
This digital input/output module records binary signals from switches, sensors and proximity switches (BEROs)*. The module also controls actuators, such as magnetic valves, DC contactors and indicators.

* Does not apply to 767-5803/000-800

Features:
- 8 digital inputs/outputs, 24 VDC / 0.5 A
- Input/output, parametrizable (channel by channel)
- Diagnostic-capable (channel by channel/module by module)
- Parametrizable (operating mode, incl. counter, filter, inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

Included:
- 1 x WMB marker, orange
- 1 x marking strip
- 2 x M12 protective cap

Description	Item No.	Pack. Unit
8DIO 24V DC 0.5A (8xM12)	**767-5803**	1
8DIO 24V DC 0.5A IF (8xM12)**	**767-5803/000-800**	1
** Interference-free for safety function applications (see manual)		

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data

Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ...+30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 45 mA (only logic part)
Actuator current I_A	typ. 75 mA + sensors/actuators
	(max. 800 mA) + load
Protection	Reverse voltage protection for U_{LS} + U_A
	Short-circuit protection for sensor/actuator
	supply

Technical Data

Digital inputs:	
Number of inputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Input filter	Hardware: ≤ 60 µs
	Software: parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2 (767-5803)
	Type 1, acc. to IEC 61131-2
	(767-5803/000-800)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+11 V ... +30 V DC (767-5803)
	+15 ... +30 VDC (767-5803/000-800)
Input wiring	High-side switching
Input voltage	24 VDC (-3 VDC < U_{IN} < +30 VDC); Power
	from U_A is strongly recommended, recovery
	for voltages > U_A
Input current (typ.)	7.0 mA (767-5803)
	3.0 mA (767-5803/000-800)
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Cable length, unshielded	≤ 30 m
Input characteristic:	
Input voltage	Typical input current
0 V DC	0
5 V	2.7 mA (767-5803)
	0.6 mA (767-5803/000-800)
11 V	6.8 mA (767-5803)
15 V	2.6 mA (767-5803/000-800)
24 V	7.0 mA (767-5803)
	3.0 mA (767-5803/000-800)
30 V	7.1 mA (767-5803)
	3.2 mA (767-5803/000-800)

System bus

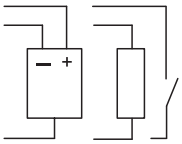
M12 B coded

1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield

Digital Inputs/Outputs X1 ... X8

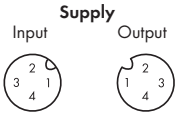
M12 A coded

1: 24 V
3: 0 V U_A



4: In-/Output
2: n.c.

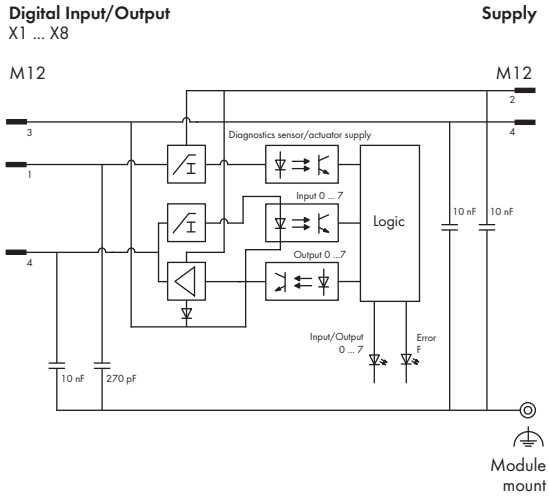
Supply



M12 A coded

1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an input/output



Technical Data

Digital outputs:	
No. of outputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Output voltage	≤ U_A
Output current (per channel)	0.5 A (max. 0.6 A),
	short-circuit/overload proof
	(thermal disconnection)
Voltage drop against U_A at 500 mA	max. 0.2 V DC
Output current (module)	max. 4 A
Leakage current in OFF state	typ. 5 µA
Output circuit	High-side switching
Information on actuator selection:	
Delay time hardware from "0" to "1"	
(0 – 90%)	typ. 70 µs (resistive load)
Delay time hardware from "1" to "0"	
(0 – 90%)	typ. 180 µs (resistive load)
Rise time from "0" to "1"	typ. 40 µs (resistive load)
Fall time from "1" to "0"	typ. 40 µs (resistive load)
Cable length, unshielded	≤ 30 m
Reverse current (in case of recovery for	
voltages > U_A)	≤ 0,5 A (error: 1 channel)
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz
	Resistive load approx. 500 Hz
	Lamp load approx. 500 Hz
Parallel connection of 2 outputs	for power boost
	for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Fieldbus disruption	Acc. to substitute value strategy
S-bus (system bus) disruption	0 V status
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart

Technical Data

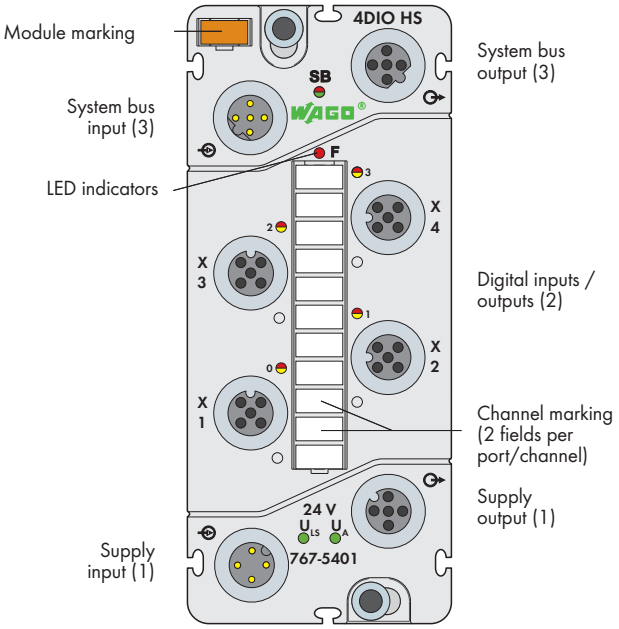
Counters:	
No. of counters	2
Counter type	Event/gate time counter, pulse duration
Counting/switching frequency	0 Hz ... 1 kHz
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	
cULus UL 508	
Isolation:	
Channel – Channel	no
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Operating mode (per module)	DO-Module/DI-Module/DIO-Module/
	DIO + 1 counter/DIO + 2 counters
Counter	Count direction, start/limit value switching
	output, gate time
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Overtemperature
I/O diagnostics (per module)	Sensor/Actuator supply short-circuit/
	overload; Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	Depends on operating mode
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Input and output signal status	LED (yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 170
Weight	389 g

Digital Input/Output Module, 24 VDC / 0.2 A, High Speed

4 inputs/outputs (4 x M12)



Short description:
This digital input/output module records/outputs binary signals from sensors/actuators with short response times. The 767-5401 Module features high-speed inputs/outputs, making it ideal for use with fast ETHERNET-based fieldbus systems (e.g., sercos).

Features:
- 4 digital inputs/outputs, 24 VDC / 0.2 A, incl. counter function
- Front-end cycle time (hardware) max. 3 µs
- Diagnostic-capable (channel by channel/module by module)
- Parametrizable (operating mode, filter, inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

Included:
- 1 x WMB marker, orange
- 1 x marking strip
- 2 x M12 protective cap

Description	Item No.	Pack. Unit
4DIO 24VDC 0.2A HS (4xM12)	**767-5401**	1

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data

Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 40 mA (logic component only)
Actuator current I_A	typ. 30 mA + sensors/actuators (max. 1000 mA) + load
Protection	Reverse voltage protection for U_{LS} + U_A; Short-circuit protection for sensor/actuator supply

Technical Data

Digital inputs:	
Number of inputs	4
Connection type (2)	M12 connectors, A coded, 5 poles, shielded
Wire connection	2- or 3-wire
Front-end cycle time (hardware)	max. 3 µs
Front-end jitter/skew (input)	< 2 µs
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 VDC (-3 VDC < U_{IN} < +30 VDC); Power from U_A strongly recommended
Input current (typ.)	2.9 mA
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Wrong connection of inputs	No effect
Cable length, shielded	≤ 30 m
Input characteristic:	
Input voltage	Typical input current
0 V	0 mA
5 V	2.0 mA
15 V	2.5 mA
24 V	2.9 mA
30 V	3.2 mA

System bus

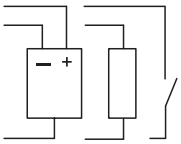
M12, B coded

1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield

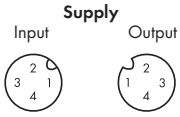
Digital Inputs/Outputs X1 ... X4

M12, A coded

1: 24 V
3: 0 V U_A
5: Shield
4: In-/Output
Housing: Shield



Supply



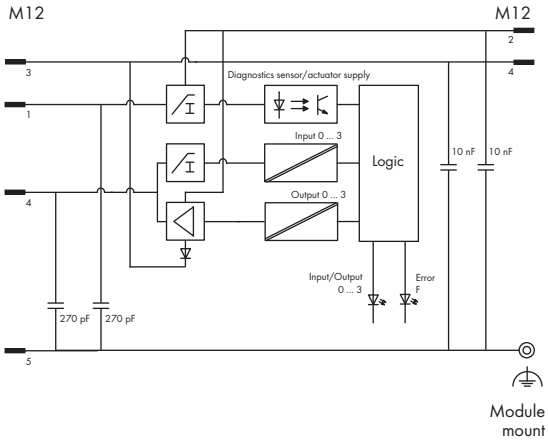
M12, A coded

1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an input/output

Digital Input/Output
X1 ... X4

Supply



Technical Data

Digital outputs:	
No. of outputs	4
Connection type (2)	M12 connectors, A coded, 5 poles, shielded
Wire connection	2- or 3-wire
Output voltage	≤ U_A
Output current (per channel)	0.2 A, short-circuit/overload proof (thermal disconnection)
Voltage drop against UA at 200 mA	Max. 2.0 V DC
Output current (module)	max. 0.8 A
Leakage current in OFF state	typ. 100 µA
Output circuit	Push/Push
Information on actuator selection:	
Front-end cycle time 90% (hardware)	max. 0,5 µs
Edge steepness	$T_{ON/OFF}$: typ. < 0,2 µs
Front-end jitter/skew (output)	< 0,2 µs
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load upon request
	Resistive load upon request
	Lamp load upon request
Type of protective circuit	External protection (e.g., recovery diodes)
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Fieldbus disruption	Acc. to substitute value strategy
S-bus (system bus) disruption	0 V status
Supply voltage under rated voltage tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart

Technical Data

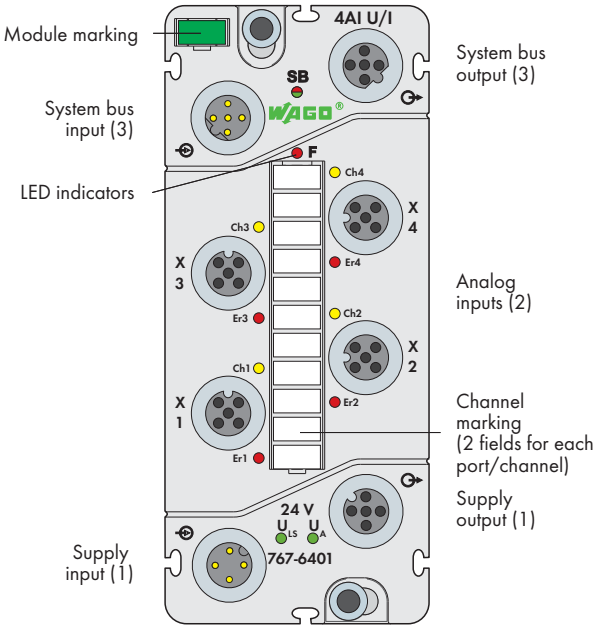
Counters:	
No. of counters	1
Counter type	Event, gateway time, pulse duration
Counting/switching frequency	0 Hz ... 1 kHz
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
Conformity marking	CE
cULus UL 508	
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus	500 VDC each
Configurable functions:	
Operating mode (per module)	DO module/DI module/DIO module/ DIO + 1 counter
Input filter (per channel)	10/ 25/ 50/ 100/ 200 µs/ 1/ 3 ms/ filter off
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per channel/module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Overtemperature
I/O diagnostics (per module)	Short-circuit of sensor/actuator supply
	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	depends on operating mode
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 – 3: Signal status, inputs/outputs	LED (yellow/red)
0 – 3: Diagnostics, outputs	LED (red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	255 g

Analog Input Module Voltage/Current

4 inputs



Short description:
Analog input module records voltage and current signals.

Characteristics:
- 4 analog inputs 0-20 mA, 0-22 mA (acc. to NAMUR NE43), 4-20 mA, ±20 mA, 0-10 V or ±10 V
- Diagnostic capable
- Parametrizable (measuring range, limiting value, filter, substitute value, online simulation and diagnostics)

Included:
- Module WMB marker card, green (1 pcs)
- Marker strips (1 pcs)
- M12 protective caps (2 pcs)

Description	Item No.	Pack. Unit
4AI U/I	**767-6401**	1

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %);
	Also required for power supply transmission
Supply current	
Logic and sensor current I_{LS}	50 mA + sensors (max. 400 mA)
Actuator current I_A	5mA
Protection	Reverse voltage protection for U_{LS} + U_A;
	short circuit protection for sensor supply
Analog inputs:	
Number of inputs	4
Connection type (2)	M12 connectors, A coded, 5 poles
Type of signal	Currents and voltages (differencial inputs)
Wire connection	2-/3-/4-wire (external shield (screen)
	via knurled nut)
Measuring range	0-20mA, 0-22mA, 4-20mA, ±20mA,
	0-10V, ±10V
Input impedance	AI(U) ≥ 100 kΩ
	AI(I) ≤ 200 Ω at 20 mA
Type of cable, cable length	shielded, ≤ 30 m

System bus

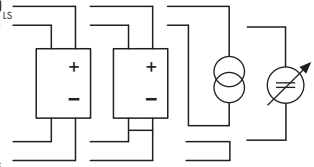
M12 B coded

1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield

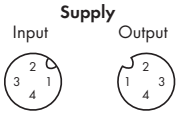
Analog Inputs
X1 ... X4

M12 A coded

1: 24 V U_{LS}
2: Input +
5: Shield
4: Input -
3: 0 V U_{LS}
Housing: Shield



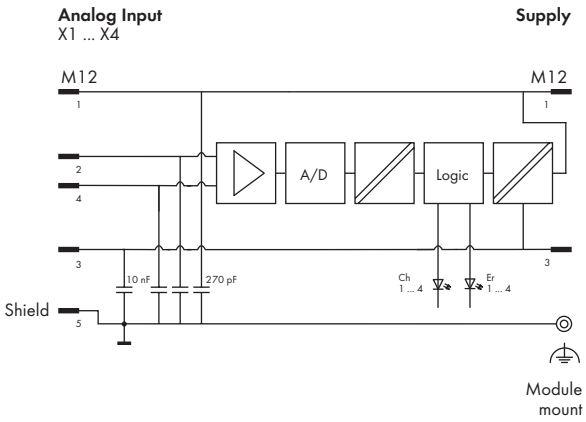
Supply



M12 A coded

1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an input



Technical Data

Analog value creation:	
Resolution	16 bits
Conversion method	SAR
Monotonicity without error code	yes
Conversion time	1 ms
Sampling delay	1 ms (module)
	< 100 µs (channel/channel)
Sampling repeat time	1ms
Failures and errors:	
Voltage proof	up to 32 V (internal current limitation)
Max. measuring error at 25 °C	≤ ± 0.2 % of the measuring range
Temperature error	≤ 100 ppm/K of measuring range
Maximum error over the full	
temperature range	≤ ± 0.6 % of the measuring range
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles,
	shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	KC
cULus UL 508	

Technical Data

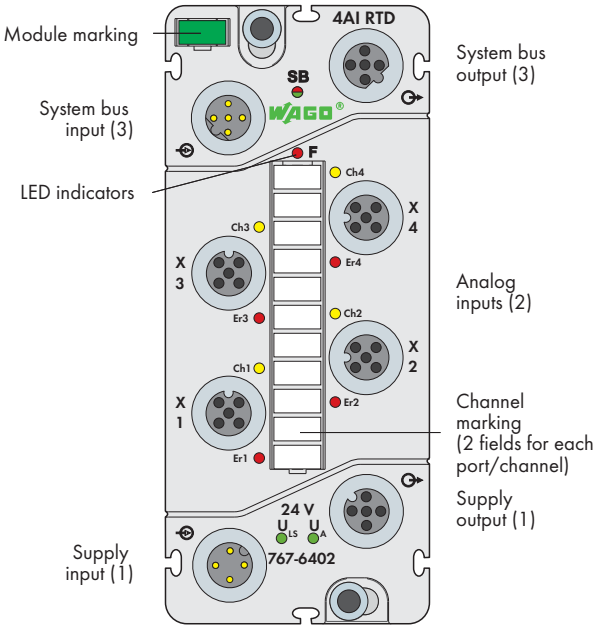
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Measuring range (per channel)	0-20 mA, 4-20 mA, ±20 mA, 0-10 V,
	±10 V, user-defined
Limiting values (per channel)	Min./Max.
Input filter (per channel)	50 Hz / 60 Hz / filter off
Substitute value (per channel)	Value
Online simulation (per channel)	Lock/unlock; simulation value: (according
	to measuring range)
Online simulation (per channel/	
module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Overrange/measuring range underflow
	and wire break at 4-20 mA
	Overcurrent
	Limit value violation (min/max)
I/O diagnostics (per module)	Short circuit/overload (sensor supply)
	undervoltage (U_{LS} + U_A)
Process image:	
Process data width	8-byte data + status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
Ch1 ... Ch4: Input signal status	LED (yellow)
Er1 ... Er4: Input signal error	LED (red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	262 g

Analog Input Module RTD

4 inputs



Short description:
Analog input module records the values from resistance thermometers, resistors and potentiometer adjustment.

Characteristics:
- 4 RTD analog inputs
- Diagnostic capable
- Parametrizable (measuring range, limiting value, filter, substitute value, online simulation and diagnostics)

Included:
- Module WMB marker card, green (1 pcs)
- Marker strips (1 pcs)
- M12 protective caps (2 pcs)

Description	Item No.	Pack. Unit
4AI RTD	**767-6402**	1

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %);
	Also required for power supply transmission
Supply current	
Logic and sensor current I_{LS}	typ. 40 mA
Actuator current I_A	4mA
Protection	Reverse voltage protection for U_{LS} + U_A
Analog inputs:	
Number of inputs	4
Connection type (2)	M12 connectors, A coded, 5 poles
Type of signal	Resistors, Potentiometer Positions
Wire connection	2-/3-/4-wire (external shield (screen)
	via knurled nut)
Signal measuring range	
Resistance thermometer	Pt100, Pt200, Pt500, Pt1000
	Ni100, Ni120, Ni1000
Resistors	1 kΩ and 4 kΩ
Potentiometer	0 ... 100 % setting angle
	(for 1 kΩ and 4 kΩ)
Temperature range	Pt: -200°C ... +850°C
	Ni: -60°C ... +250°C
Resolution (over entire range)	0.05 °C / 0.05 Ω/ 0.25 Ω / 0.005 %
Measuring current	< 0.5 mA
Type of cable, cable length	shielded, ≤ 30 m

System bus

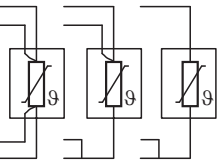
M12 B coded

1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield

Analog Inputs
X1 ... X4

M12 A coded

1: R+
2: RL+
5: Shield
4: RL -
3: R -
Housing: Shield



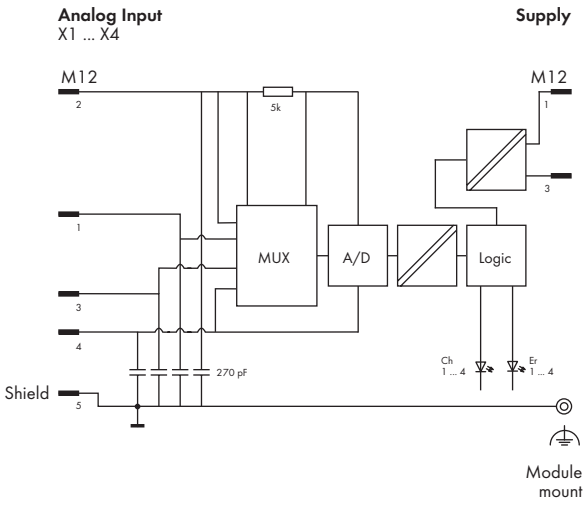
Supply

Input Output

M12 A coded

1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an input



Technical Data

Analog value creation:	
Resolution	16 bits
Integration time	2 - 120ms
Conversion method	SigmaDelta
Monotonicity without error code	yes
Conversion time	1/Input sampling frequency (s)
Sampling repeat time	Number of active channels x conversion time x 2
Failures and errors:	
Max. measuring error at 25°C	± 0.1 % of the measuring range
Temperature error	± 0.001 % of the measuring range/ K
Maximum error over the full temperature range	< 2°C
Maximum temporary deviation	0.05 °C
Repeat accuracy	0.05 °C
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	

Technical Data

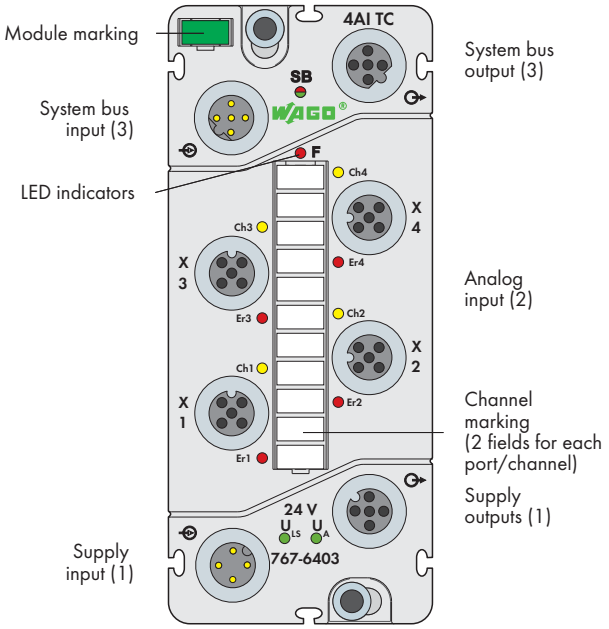
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Measuring range (per channel)	Pt100/ Pt200/ Pt500/ Pt1000, Ni100/ Ni120/ Ni1000; 1 kΩ / 4 kΩ; 0 ... 100 % setting angle (for 1 kΩ and 4 kΩ); user-defined
Wire connection (per channel)	2-wire/3-wire/4-wire
Limiting values (per channel)	Min./Max.
Integration time (per channel)	2, 4, 8, 16.7, 20, 30, 60, 120ms
Linearization (per channel)	Linear/Pt/Ni/Ni TK 5000/Ni TK 6720
Online simulation (per channel)	Lock/unlock; simulation value: (according to measuring range)
Online simulation (per channel/ module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Measurement range overflow/underflow Limit violation (min./max.)
I/O diagnostics (per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	8-byte data + status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
Ch1 ... Ch4: Input signal status	LED (yellow)
Er1 ... Er4: Input signal error	LED (red)
U_{LS} + U_A: Supply status	LED (green)

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	280 g

Analog Input Module for Thermocouples (TCs)

4 inputs



Short description:
This analog input module receives the measured values from thermocouples and voltage sensors.

Characteristics:
- 4 analog inputs TC*
- Diagnostic capable
- Parametrizable (measuring range, limiting values, filter, cold junction compensation, substitute value, online simulation and diagnostics)

* Preassembled connector for cold junction compensation available as accessory.

Included:
- WMB module marker card, green
- Marker strip
- M12 protective caps (2 pcs)

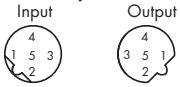
Description	Item No.	Pack. Unit
4AI TC	**767-6403**	1

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11
Compensation connector, M12 plug, straight, spring clamp technology	**756-9207/050-000**

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %);
	Also required for power supply transmission
Supply current	
Logic and sensor current I_{LS}	Typ. 40 mA
Actuator current I_A	≤ 5mA
Protection	Reverse voltage protection for U_{LS} + U_A
Analog inputs:	
Number of inputs	4
Connection type (2)	M12 connectors, A coded, 5 poles
Type of signal	Thermocouple and low voltages
Wire connection	2-wire
	(external shield (screen)
	via knurled nut)

System bus

Input Output



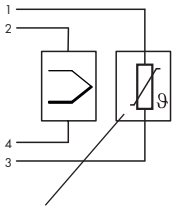
M12 B coded

1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield

Analog Inputs
X1 ... X4

M12 A coded

1: CompIn/Pt1000
2: In+/TC+
3: GND/Pt1000
4: In-/TC-
5: Shield



Integrated PT1000 sensor of compensation connector

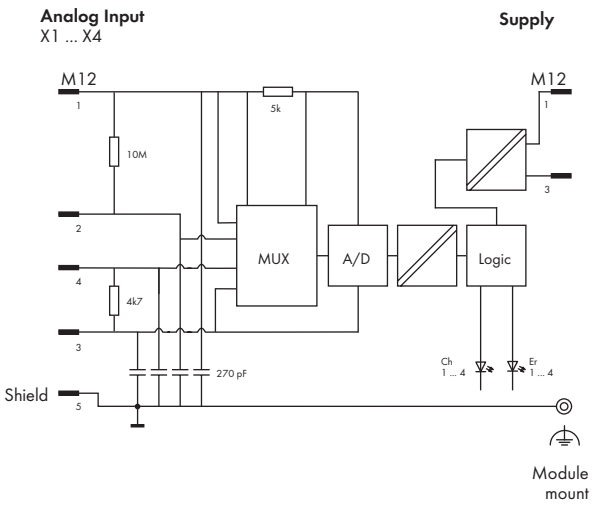
Supply

Input Output

M12 A coded

1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an input



Technical Data

Analog inputs:	
Signal measuring range	
Measuring range	**Thermocouples:**
	Type B: +200°C ... +1,820°C
	Type C: 0°C ... +2320 °C
	Type E: –250°C ... +1000°C
	Type J: –210°C... +1200°C
	Type K: –210°C ... +1370°C
	Type N: –210°C ...+1300°C
	Type R: –50°C ...+1768°C
	Type S: –50°C ... +1768°C
	Type T: –210°C ... +400°C
	Voltage sensors:
	MB1: ± 36 mV
	MB2: ± 72 mV
	MB3: ± 145 mV
	MB4: ± 290 mV
Resolution (over entire range)	0.1 °C or 0.01 mV
Type of cable, cable length	shielded, ≤ 30 m
Analog value creation:	
Resolution	16 bits
Integration time	2 - 120ms
Conversion method	SigmaDelta
Monotonicity without error code	Yes
Conversion time	Integration time x 3
Sampling repeat time	Number of active channels x conversion time
Failures and errors:	
Max. measuring error (without temperature compensation)	≤ ± 1 K over the entire measuring range (for type K)
Max. measuring error cold junction	≤ ± 1K
Temperature error	± 0.05 K/K (type K)
Maximum error over the full temperature range	± 3K
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	

Technical Data

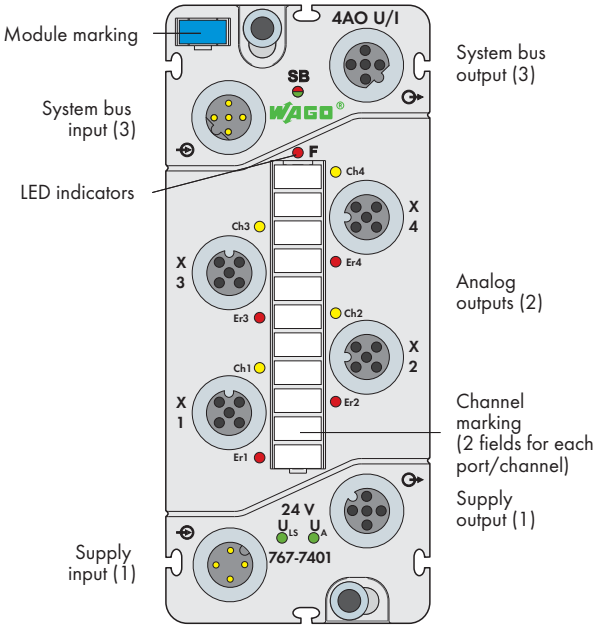
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Measuring range (per channel)	Type B; C; E; J; K; N; R; S; T
	MB 1; MB 2; MB 3; MB 4;
	user-defined
Limiting values (per channel)	Min./Max.
Integration time (per channel)	2, 4, 8, 16.7, 20, 30, 60, 120ms
Linearization (per channel)	Linear; Type B; C; ...T
Substitute value (per channel)	Value
Cold junction compensation (per channel)	**Type:** Fixed temperature; Compensation on the current input; Compensation on the previous input; **Temperature:** Value **Offset:** Value
Online simulation (per channel)	Lock/unlock; simulation value: (according to measuring range)
Online simulation (per channel/ module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Overrange/measuring range underflow
	Limit value violation (min/max)
	Wire break
I/O diagnostics (per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	8-byte data + status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
Ch1 ... Ch4: Input signal status	LED (yellow)
Er1 ... Er4: Input signal error	LED (red)

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	280 g

Analog Output Module Voltage/Current

4 outputs



Short description:
Analog output module for the output of voltage and current signals.

Characteristics:
- 4 analog outputs 0-20 mA, 4-20 mA, ±20 mA, 0-10 V or ±10 V
- Diagnostic capable
- Parametrizable (measuring range, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

Included:
- Module WMB marker card, blue (1 pcs)
- Marker strips (1 pcs)
- M12 protective caps (2 pcs)

Description	Item No.	Pack. Unit
4AO U/I	**767-7401**	1

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	28 mA (only logic part)
Actuator current I_A	34 mA + actuators
Protection	Reverse voltage protection for U_{LS} + U_A;
	Overload and short circuit protection for U_A
Analog outputs:	
No. of outputs	4
Connection type (2)	M12 connectors, A coded, 5 poles
Type of signal	Currents and voltages
Wire connection	2-/3-/4-wire (external shield (screen) via
	knurled nut)
Measuring range	0-20mA, 4-20mA, ±20mA,
	0-10V, ±10V
Output load (load impedance)	≤ 500 Ω (current)
	≥ 5 kΩ (voltage)
Maximum capacitive load (at voltage	
outputs)	10 nF
Maximum inductive load (at current	
outputs)	1 mH
Type of cable, cable length	shielded, ≤ 30 m

System bus

Input Output

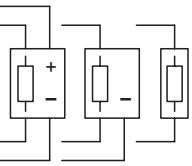
M12 B coded

1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield

Analoge Outputs
X1 ... X4

M12 A coded

2: 24 V
1: Output +/-
5: Schield
3: Output -
4: 0 V U_A
Housing: Shield



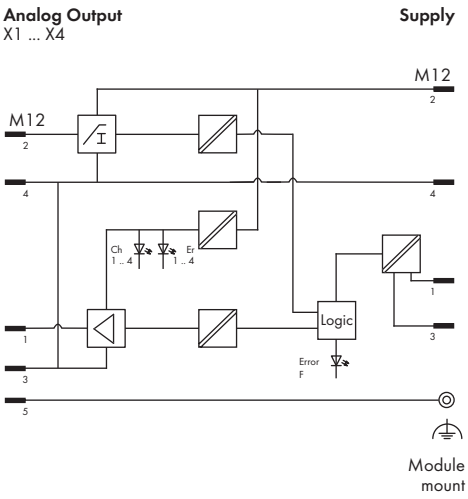
Supply

Input Output

M12 A coded

1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an output



Technical Data

Analog value creation:	
Resolution	15-bit unipolar,
	16-bit bipolar
Monotonicity	yes
Cycle time	approx. 1 ms
Recovery time for resistive, inductive	
and capacitive loads	approx. 1 ms
Failures and errors:	
Maximum continuous overload	
(without failure)	0 Ω
Max. measuring error at 25 °C	≤ ± 0.2 % of the measuring range
Temperature error	≤ 100 ppm/K of measuring range
Maximum error over the full	
temperature range	≤ ± 0.6 % of the measuring range
Overshooting	approx. ± 0.05 % of the measuring range
Output ripple	approx. ± 0.02 % of the measuring range
Crosstalk between the channels at	
DC voltage and AC voltage 50 Hz	
and 60 Hz	- 90 dB
Short circuit protection	electronic
Nominal output current	max. 1 A
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles,
	shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	

Technical Data

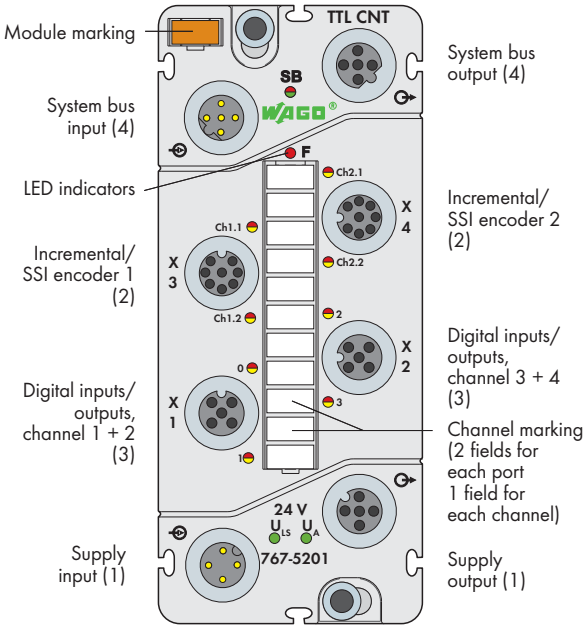
Isolation:	
Channel – Channel	No
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Measuring range (per channel)	0-20 mA, 4-20 mA, ±20 mA, 0-10 V, ±10
	V, user-defined
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0 mA bzw. 0 V / substitute value according
	to measuring range
Manual mode (per channel)	On/off
Manual mode value (per channel)	Value
Online simulation (per channel)	Lock/unlock; simulation value: (according
	to measuring range)
Online simulation (per channel/	
module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Short circuit (voltage)
	wire break (current)
I/O diagnostics (per module)	Short circuit/overload (actuator supply)
	undervoltage (U_{LS} + U_A)
Process image:	
Process data width	8-byte data + status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
Ch1 ... Ch4 : Output signal status	LED (yellow)
Er1 ... Er4 : Output signal error	LED (red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	282 g

TTL Incremental/SSI Encoder Interface

Two encoder interfaces (2 x M12) + 4 digital inputs/outputs (2 x M12, two inputs/outputs per connector)



Short description:
The 767-5201 Module evaluates both incremental and absolute encoders with RS-422 signal levels. Integrated DIOs allow outputs to be directly set depending on counter states. Two of the four DIO channels can also be used as PWM outputs*.

Characteristics:
- Two incremental/SSI encoder interfaces
- Four digital inputs/outputs 24 VDC/0.1 A (incl. 2 PWM* outputs)
- Configurable (incremental/SSI encoder, DIOs)
- Diagnostic-capable (channel by channel/module by module)

Included:
- 1 x WMB marker, orange
- 1 x marking strip
- 2 x M12 protective cap

*Pulse-Width Modulated outputs

Description	Item No.	Pack. Unit
TTL Incremental/SSI Encoder	**767-5201**	1

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data

Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles
Current carrying capacity of supply connections	max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ...+30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 50 mA
Actuator current I_A	typ. 25 mA + actuators (max. 800 mA)
Protection	Reverse voltage protection for U_{LS} + U_A
	Short-circuit protection for sensor/actuator supply

Technical Data

Incremental encoder:	
Number of inputs (incremental)	2
Connection type (2)	M12 connectors, A coded, 8 poles, shielded
Sensor supply	5 V/24 V, max. 300 mA
Encoder connection (incremental)	A, A\, B, B\, C, C\
Signal input (incremental)	RS-422 differential signal
Counter	32 bits
Max. operating frequency	1 MHz
Zero impulse latch	32 bits
Type of cable, cable length	shielded, ≤ 30 m
SSI encoder:	
Number of inputs (SSI encoder)	2
Connection type (2)	M12 connectors, A coded, 8 poles, shielded
Sensor supply	5 V/24 V, max. 300 mA
Encoder connection (SSI)	D+, D-, CL+, CL-
Signal input (SSI encoder)	+D, -D: RS-422 differential signal
Signal output (SSI encoder)	CL+, CL-: RS-422 differential signal
Bit width	32 bits
Baud rate	62.5 kHz ... 2 MHz
Method of conversion	Binary/Gray
Type of cable, cable length	shielded, ≤ 30 m

System bus

Input Output

M12 B coded

1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield

Incremental/SSI encoder

X3 ... X4

M12 A coded

Incremental	SSI encoder
1: GND	1: GND
2: +5 V/24 V	2: +5 V/24 V
3: A	3: +CL
4: A\	4: -CL
5: B	5: +D
6: B\	6: -D
7: C	7: n.c.
8: C\	8: n.c.
Housing: Shield	

Digital Inputs/Outputs

X1 ... X2

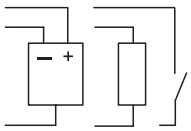
(two inputs/outputs / connector)

M12 A coded

1: 24 V
3: 0 V U_A

5: Shield

4: In-/Output A
2: In-/Output B
Housing: Shield

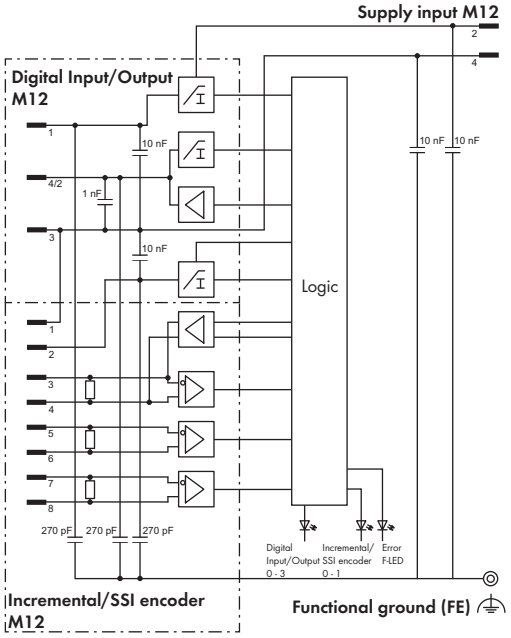


Supply

Input Output

M12 A coded

1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A



Technical Data

Digital inputs:	
Number of inputs	4
Connection type (3)	M12 connectors, A coded, 5 poles, shielded
Wire connection	2- or 3-wire
Front-end cycle time (hardware)	max. 3 µs
Input characteristic	Type 3, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	High-side switching
Input voltage	24 VDC (-3 VDC < U_{IN} < +30 VDC)
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Type of cable, cable length (digital inputs)	shielded, ≤ 30 m
Input characteristic:	
Input voltage	Typical input current
0 V	0 mA
5 V	2.0 mA
15 V	2.5 mA
24 V	2.9 mA
30 V	3.2 mA
Digital outputs (see manual for actuator selection information)	
No. of outputs	4
Connection type (3)	M12 connectors, A coded, 5 poles, shielded
Wire connection	2- or 3-wire
Output voltage	≤ U_A
Output current (channel/module)	0.1 A/0.4 A
Short-term output current, 1 s (channel)	0.2 A
Output protection	Short-circuit/overload protection, thermal shutdown
Response time	approx. 10 µs (output, 90 %)
Pulse width modulation (PWM)	
Pulse frequency	100 Hz ... 10 kHz
Pulse duty factor	0 ... 100 %
Resolution	16 bits (≤ 1 kHz), 12 bits (> 1 kHz)
Voltage drop against U_A	max. 1.7 V at 100 mA
Leakage current in OFF state	typ. 150 µA
Output circuit	push-pull

Technical Data

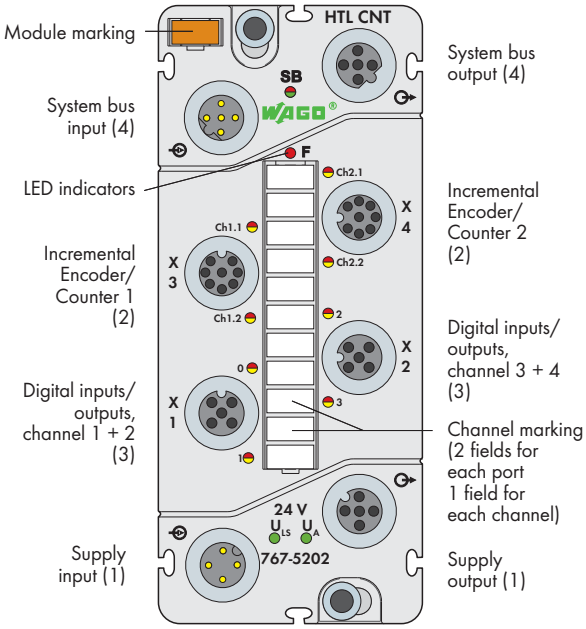
System bus:	
Connection type (4)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
Conformity marking	CE
cULus UL 508	
Isolation:	
Channel – Channel	no
U_{LS}, U_A, system bus	500 V DC each
Configurable functions: (see manual for configuration details)	
Incremental encoder (channel by channel)	Evaluation, filter
SSI encoder (channel by channel)	Data width/length, transmission rate, etc.
Cam (channel-by-channel)	Upper/lower value, output, etc.
Pulse-width modulation (channel-by-channel)	Pulse duty factor, frequency, etc..
DIOs (channel by channel/module by module)	Operating mode, filter, substitute value strategy, etc.
Configurable functions (channel by channel/module by module)	Online simulation and diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	**Encoder:** Over-/underflow, wire break, limit value violation (min./max.); **DIO:** Overtemperature (actuators)
I/O diagnostics (per module)	**Supply:** Short-circuit/Overload of sensor/actuator supply, undervoltage (U_{LS} + U_A)
Process image:	
Process data width	2 x 4-byte encoder value, 2 x 2-byte control data, 1-byte status DI/control DO
Synchronous diagnostics (optional)	2 bytes
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 – 3: Signal status, inputs/outputs	LED (yellow/red)
Ch1 + Ch2: Encoder status	LED (green/yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

HTL Incremental Encoder/Counter Interface

Two encoder/counter interfaces (2 x M12) + 4 digital inputs/outputs (2 x M12, two inputs/outputs per connector)



Short description:
The 767-5202 Module evaluates incremental encoders and counts binary signals with 24V signal levels. Integrated DIOs allow outputs to be directly set depending on counter states. Two of the four DIO channels can also be used as PWM outputs*.

Characteristics:
- Two incremental encoder/counter interfaces
- Four digital inputs/outputs 24 VDC/0.1 A (incl. 2 PWM outputs)
- Configurable (incremental encoder, counter, DIOs)
- Diagnostic-capable (channel by channel/module by module)

Included:
- 1 x WMB marker, orange
- 1 x marking strip
- 2 x M12 protective cap

*Pulse-Width Modulated outputs

Description	Item No.	Pack. Unit
HTL Incremental Encoder/Counter	**767-5202**	1

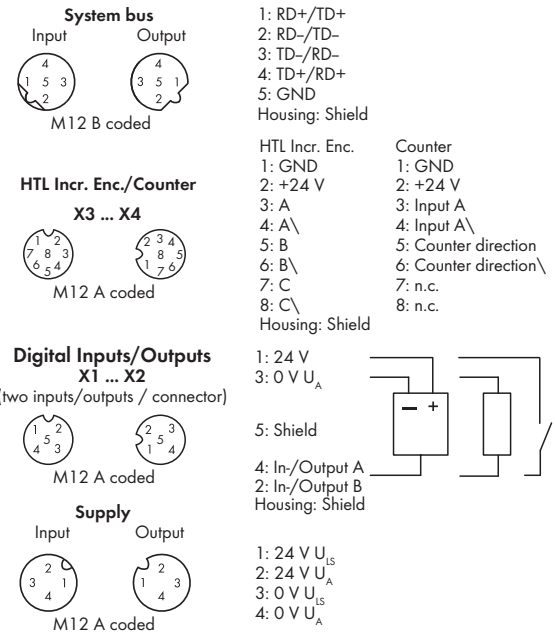
Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

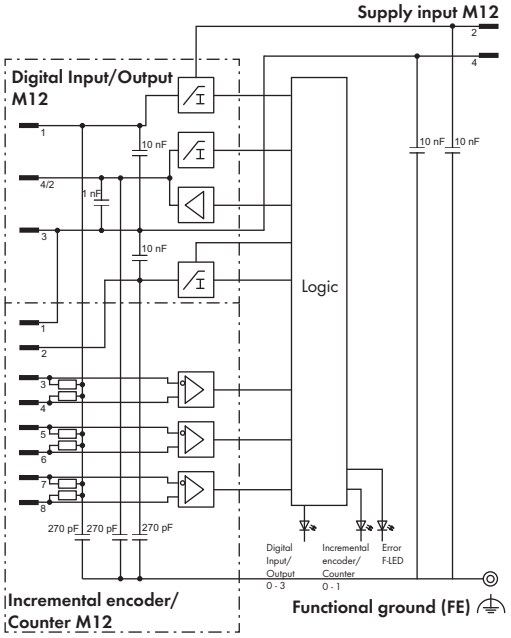
Technical Data

Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles
Current carrying capacity of supply	
connections	max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ...+30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 50 mA
Actuator current I_A	typ. 25 mA + actuators (max. 800 mA)
Protection	Reverse voltage protection for U_{LS} + U_A
	Short-circuit protection for sensor/actuator supply

Technical Data

Incremental encoder:	
Number of inputs (incremental)	2
Connection type (2)	M12 connectors, A coded, 8 poles, shielded
Sensor supply	5 V/24 V, max. 300 mA
Encoder connection (incremental)	A, A\, B, B\, C, C\
Signal input (incremental)	HTL, differential/single-ended
Counter	32 bits
Max. operating frequency	250 kHz
Zero impulse latch	32 bits
Type of cable, cable length	shielded, ≤ 30 m
Counters:	
Number of inputs (counter)	2
Connection type (2)	M12 connectors, A coded, 8 poles, shielded
Counter type	U/D counter (up/down pulse counting), peak-time counter (number of pulses per time unit), AB counter (A+B; A-B), frequency counter (input frequency, cycle duration), pulse width (pulse width ratio), pulse duration (time in µs)
Counter input	24 V DC
Power supply	max. 300 mA
Bit width	32 bits
Counter frequency	250 kHz





Technical Data

Digital inputs:	
Number of inputs	4
Connection type (3)	M12 connectors, A coded, 5 poles, shielded
Wire connection	2- or 3-wire
Front-end cycle time (hardware)	max. 3 µs
Input characteristic	Type 3, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	High-side switching
Input voltage	24 VDC (-3 VDC < U_{IN} < +30 VDC)
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Type of cable, cable length (digital inputs)	shielded, ≤ 30 m
Input characteristic:	
Input voltage	Typical input current
0 V	0 mA
5 V	2.0 mA
15 V	2.5 mA
24 V	2.9 mA
30 V	3.2 mA
Digital outputs (see manual for actuator selection information)	
No. of outputs	4
Connection type (3)	M12 connectors, A coded, 5 poles, shielded
Wire connection	2- or 3-wire
Output voltage	≤ U_A
Output current (channel/module)	0.1 A/0.4 A
Short-term output current, 1 s (channel)	0.2 A
Output protection	Short-circuit/overload protection, thermal shutdown
Response time	approx. 10 µs (output, 90 %)
Pulse width modulation (PWM)	
Pulse frequency	100 Hz ... 10 kHz
Pulse duty factor	0 ... 100 %
Resolution	16 bits (≤ 1 kHz), 12 bits (> 1 kHz)
Voltage drop against U_A	max. 1.7 V at 100 mA
Leakage current in OFF state	typ. 150 µA
Output circuit	push-pull

Technical Data

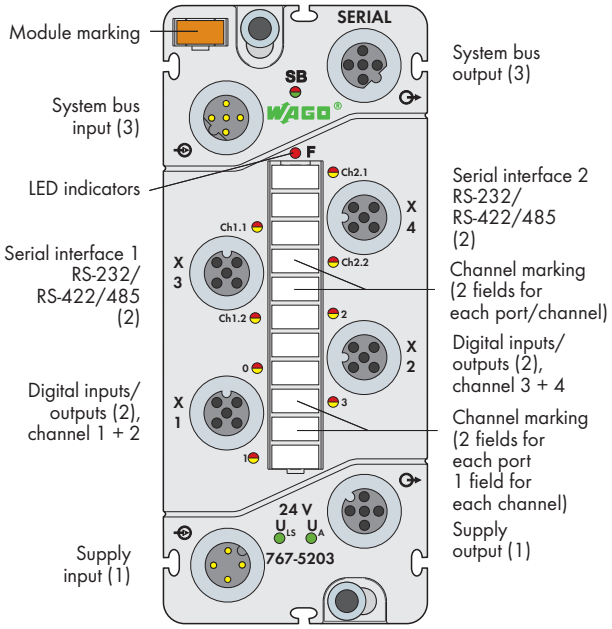
System bus:	
Connection type (4)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
Conformity marking	CE
cULus UL 508	
Isolation:	
Channel – Channel	no
U_{LS}, U_A, system bus	500 V DC each
Configurable functions: (see manual for configuration details)	
Incremental encoder (channel by channel)	Evaluation, filter
Counter (channel by channel)	Gate, direction, gate time, preset, etc.
Cam (channel-by-channel)	Upper/lower value, output, etc.
Pulse-width modulation (channel-by-channel)	Pulse duty factor, frequency, etc.
DIOs (channel by channel/module by module)	Operating mode, filter, substitute value strategy, etc.
Configurable functions (channel by channel/module by module)	Online simulation and diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	**Encoder:** Over-/underflow, wire break, limit value violation (min./max.); **DIO:** Overtemperature (actuators)
I/O diagnostics (per module)	**Supply:** Short-circuit/Overload of sensor/actuator supply, undervoltage (U_{LS} + U_A)
Process image:	
Process data width	2 x 4-byte encoder value, 2 x 2-byte control data, 1-byte status DI/control DO
Synchronous diagnostics (optional)	2 bytes
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 – 3: Signal status, inputs/outputs	LED (yellow/red)
Ch1 + Ch2: Encoder status	LED (green/yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

Serial Interface (RS-232, RS-422/-485)

2 interfaces (2xM12) + 4 digital inputs/outputs (2xM12, two inputs/outputs per connector)



Short description:
The serial interface module controls/monitors devices (e.g., barcode readers, printers, scales, laser measurement systems, operator panels, transponders) and offers in addition digital inputs/outputs.

Characteristics:
- 2 serial interfaces (RS-232, RS-422/-485)
- 4 digital inputs/outputs, 24 VDC / 0.5 A
- Diagnostic capable (per channel/per module)
- Parametrizable (serial interface, operating mode, filter, inversion, substitute value strategy, manual mode, online simulation and diagnostics)

Included:
- 1 x WMB marker, orange
- 1 x marking strip
- 2 x M12 protective cap

Description	Item No.	Pack. Unit
Serial Interface (RS-232, RS-422/-485)	**767-5203**	1

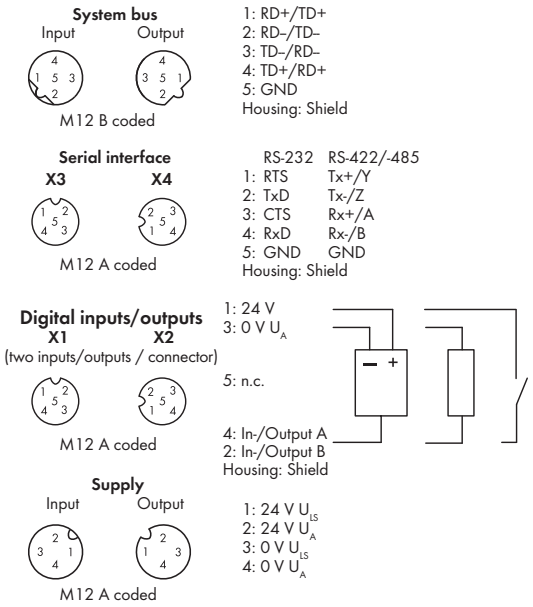
Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

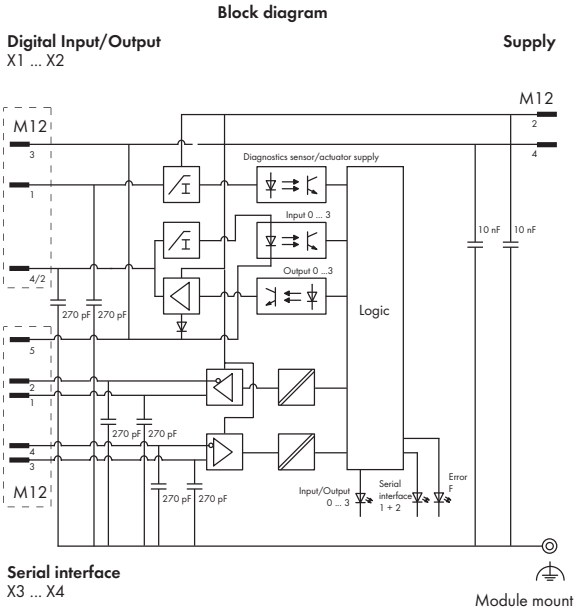
Technical Data

Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply connections	max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ...+30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 75 mA + sensors (max. 400 mA)
Actuator current I_A	typ. 25 mA + actuators 2.4 A (4 x 600 mA)
Protection	Reverse voltage protection for U_{LS} + U_A
	Short-circuit protection for sensor/actuator supply
Serial interface:	
Interfaces	2
Connection type (2)	M12 connectors, A-coded, 5 poles, shielded
Transmission channels	1 RxD / 1 TxD (full/half duplex)
Type of cable, cable length	15 m (RS-232); 1000 m (RS-422/-485)
Baud rate	300 – 115,200 baud
Buffer	4 KB (In); 4 KB (Out)

Technical Data

Digital inputs:	
Number of inputs	4
Connection type (2)	M12 connectors, A-coded, 5 poles, shielded
Wire connection	2- or 3-wire
Input filter	Hardware: ≤ 110 µs
	Software: parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+11 V ... U_A DC
Input wiring	High-side switching
Input voltage	24 VDC (-3 VDC < U_{IN} < +30 VDC);
	Power from U_A is strongly recommended,
	recovery for voltages > U_A
Input current (typ.)	7.3 mA
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
Input characteristic:	
Input voltage	Typical input current
-3 V < U_{IN} < 0 V	0 mA
5 V	2.3 mA ... 2.5 mA
11 V	6.4 mA ... 6.7 mA
24 V < U_A < 31.2 V	7.3 mA ... 7.5 mA





Technical Data

Digital outputs:	
No. of outputs	4
Connection type (2)	M12 connectors, A-coded, 5 poles, shielded
Wire connection	2- or 3-wire
Output voltage	≤ U_A
Output current (per channel)	0.5 A (max. 0.6 A), short-circuit/overload proof (thermal disconnection)
Voltage drop against U_A at 500 mA	max. 0.2 V DC
Output current (module)	max. 2 A
Leakage current in OFF state	typ. 5 µA
Output circuit	High-side switching
Information on actuator selection:	
Delay time hardware from "0" to "1" (0 – 90%)	typ. 90 µs (resistive load)
Delay time hardware from "1" to "0" (0 – 90%)	typ. 310 µs (resistive load)
Rise time from "0" to "1"	typ. 60 µs (resistive load)
Fall time from "1" to "0"	typ. 45 µs (resistive load)
Reverse current (in case of recovery for voltages > U_A)	≤ 1 A (error: 1 channel)
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz
	Resistive load approx. 500 Hz
	Lamp load approx. 500 Hz
Parallel connection of 2 outputs	for power boost
	for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Fieldbus disruption	Acc. to substitute value strategy
S-bus (system bus) disruption	0 V status
Supply voltage under rated voltage tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart

Technical Data

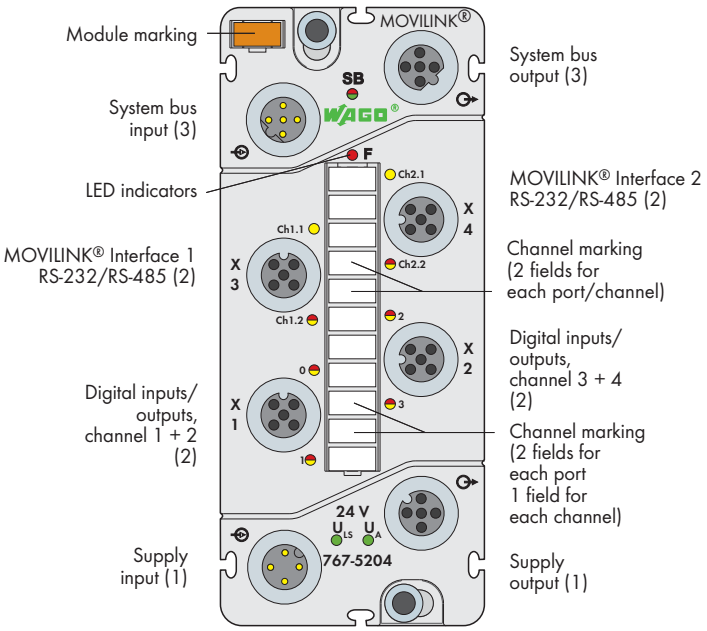
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	
Isolation:	
Channel – Channel	no
U_{LS}, U_A, system bus	500 V DC each
Parameterizable functions, serial interface:	
Operating mode (per channel)	RS-232; RS-422/-485
Baud rate (per channel)	300 – 115,700 baud
Data bits (per channel)	7/8
Parity	None/Even/Odd
Stop bits	1/2
Flow-Control	None/Xon+Xoff/RTS+CTS
Parameterizable functions, digital inputs/outputs	
Operating mode, input filter, inversion, substitute value strategy, manual mode, online simulation and diagnostics	For details, see manual.
I/O diagnostics:	
I/O diagnostics (per channel)	Overtemperature
I/O diagnostics (per module)	Sensor/Actuator supply short-circuit/overload
	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	Interface: 10 bytes (data in/out + status); DIO: 1-byte data in/out + 1-byte status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 – 3: Signal status, inputs/outputs	LED (yellow/red)
Ch1.1 + Ch2.1: Transmission status	LED (yellow/red)
Ch1.2 + Ch2.2: Reception status	LED (yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	260 g

MOVILINK® Interface (RS-232, RS-485)

2 interfaces (2 x M12) + 4 digital inputs/outputs (2 x M12, two inputs/outputs per connector)



Short description:
Interface module for drive control via MOVILINK® protocol (see note). The maximum number of drives per interface depends on the type of application and is described in more detail in the manual.

Features:
- 2 MOVILINK® interfaces (RS-232, RS-485)
- 4 digital inputs/outputs, 24 VDC / 0.5 A
- Diagnostic-capable (channel by channel/module by module)
- Parametrizable (operating mode, baud rate, filter, inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

Included:
- 1 x WMB marker, orange
- 1 x marking strip
- 2 x M12 protective cap

Note
MOVILINK® is a registered trademark of SEW-EURODRIVE GmbH & Co. KG

Description	Item No.	Pack. Unit
MOVILINK® Interface (RS-232, RS-485)	**767-5204**	1

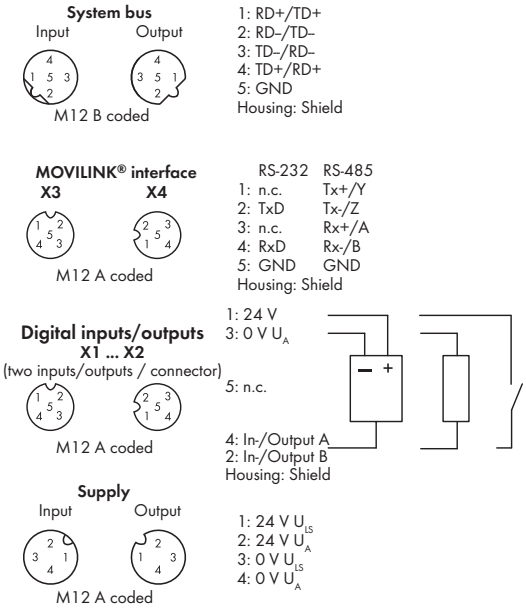
Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

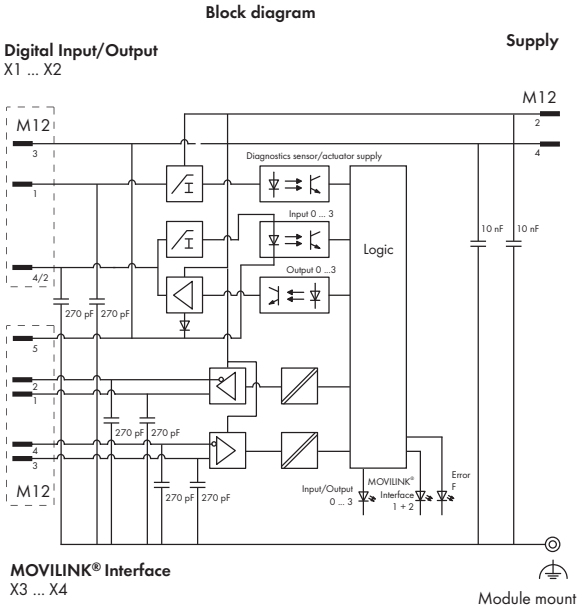
Technical Data

Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ...+30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 75mA
Actuator current I_A	typ. 25 mA + Sensors (max. 400 mA) +
	Actuators 2.4 A (4 x 600 mA)
Protection	Reverse voltage protection for U_{LS} + U_A
	Short-circuit protection for sensor/actuator
	supply
MOVILINK® Interface	
Interfaces	2
Connection type (2)	M12 connectors, A coded, 5 poles,
	shielded
Transmission channels	1 RxD / 1 TxD (half duplex)
Cable length	max. 15 m (RS-232);
	max. 200 m (RS-485)

Technical Data

MOVILINK® Interface	
Baud rate	9,600 Baud; 57,600 Baud
Protocols	MOVILINK® PDU types, 0x05 (cyclic)
	and 0x85 (acyclic)
Data bits (per channel)	8
Parity	Even
Stop bits	1
Digital inputs:	
Number of inputs	4
Connection type (2)	M12 connectors, A coded, 5 poles,
	shielded
Wire connection	2- or 3-wire
Input filter	Hardware: ≤ 110 µs
	Software: parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2
Signal voltage (0)	-3 ... +5 VDC
Signal voltage (1)	+ 11 VDC ... U_A
Input wiring	High-side switching
Input voltage	24 VDC (-3 VDC < U_{IN} < +30 VDC); Power
	from U_A is strongly recommended, recovery
	for voltages > U_A
Input current (typ.)	7.3 mA
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
Input characteristic:	
Input voltage	Typical input current
-3 V < U_{IN} < 0 V	0 mA
5 V	2.3 mA ... 2.5 mA
11 V	6.4 mA ... 6.7 mA
24 V < U_A < 31.2 V	7.3 mA ... 7.5 mA





Technical Data

Digital outputs:	
No. of outputs	4
Connection type (2)	M12 connectors, A coded, 5 poles, shielded
Wire connection	2- or 3-wire
Output voltage	≤ U_A
Output current (per channel)	0.5 A (max. 0.6 A), short-circuit/overload proof (thermal disconnection)
Voltage drop against U_A at 500 mA	max. 0.2 V DC
Output current (module)	max. 2 A
Leakage current in OFF state	typ. 5 µA
Output circuit	High-side switching
Information on actuator selection:	
Delay time hardware from "0" to "1" (0 – 90%)	typ. 90 µs (resistive load)
Delay time hardware from "1" to "0" (0 – 90%)	typ. 310 µs (resistive load)
Rise time from "0" to "1"	typ. 60 µs (resistive load)
Fall time from "1" to "0"	typ. 45 µs (resistive load)
Cable length	≤ 30 m
Reverse current (in case of recovery for voltages > U_A)	≤ 1 A (error: 1 channel)
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz
	Resistive load approx. 500 Hz
	Lamp load approx. 500 Hz
Parallel connection of 2 outputs	for power boost
	for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0,4 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Fieldbus disruption	Acc. to substitute value strategy
S-bus (system bus) disruption	0 V status
Supply voltage under rated voltage tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart

Technical Data

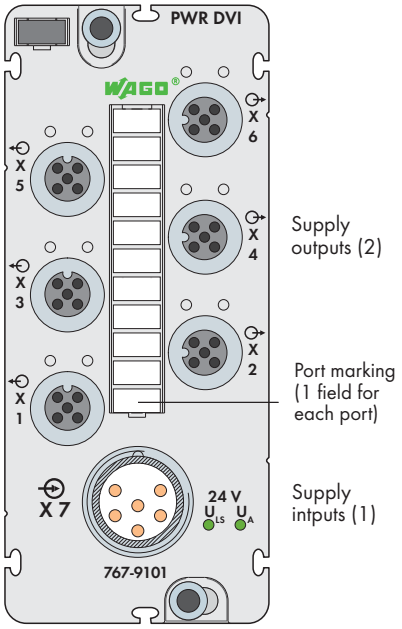
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
Conformity marking	CE
cULus UL 508	
Isolation:	
Channel – Channel	no
U_{LS}, U_A, system bus	500 V DC each
Parameterizable functions, MOVILINK® interface	
Operating mode (per module)	Easy Modus; Mailbox Modus
Type (per channel)	RS-232; RS-485
Baud rate (per channel)	9,600; 57,600 baud
Parameterizable functions, digital inputs/outputs	
Operating mode, input filter, inversion, substitute value strategy, manual mode, online simulation and diagnostics	For details, see manual.
I/O diagnostics:	
I/O diagnostics (per channel)	Overtemperature (DO)
I/O diagnostics (per module)	Sensor/Actuator supply short-circuit/overload
	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	Interface: 10-byte In/Out data;
	DIO: 1-byte In/Out data + 1-byte status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 – 3: Signal status, inputs/outputs	LED (yellow/red)
Ch1.1 + Ch2.1: Transmission status	LED (yellow)
Ch1.2 + Ch2.2: Reception status	LED (yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	35.7 x 50 x 117
Weight	260 g

Power Divider 24 V DC

6 outputs (6xM12)



Short description:
Power divider for supplying SPEEDWAY modules distributed over a large network.

Included:
- Module WMB marker card, gray (1 pcs)
- Marker strips (1 pcs)
- M12 protective caps (2 pcs)

Description	Item No.	Pack. Unit
Power Divider	**767-9101**	1

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11

Technical Data	
Module supply:	
Connection type (1)	M23 connector, 6 poles;
	Derating must be observed
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 4 mA
Actuator current I_A	typ. 4mA
Supply outputs	
No. of outputs	6
Connection type (2)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity / connector	Max. 8 A (U_{LS}: 4 A, U_A: 4 A);
	Derating must be observed
Current carrying capacity / module	Max. 24 A
	(U_{LS} max. 8 A)
	(U_A max. 16 A);
	Derating must be observed
Short circuit protection	no
Isolation:	
U_{LS} - U_A	500 VDC
Standards and approvals:	
Conformity marking	CE
Korea Certification	
UL 508	

Supply outputs
X1 ... X6

M12 A coded

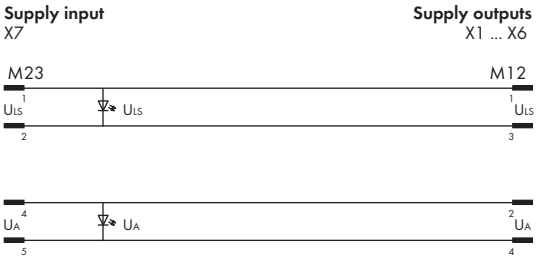
1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A
5: n.c.

Supply
Input

M23

1: 24 V U_{LS}
2: 0 V U_{LS}
3: n.c.
4: 24 V U_A
5: 0 V U_A
6: n.c.

Block diagram of power divider



Technical Data

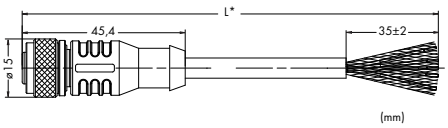
Technical Data

General Specifications

Dimensions (mm) W x H x L	50 x 43.3 x 117
Weight	276 g

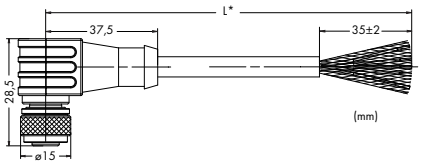
WAGO-SPEEDWAY 767

S-BUS cable suitable for drag chains (system bus cable), assembled on one end



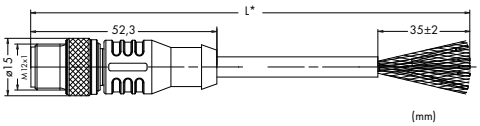
Pin 1 - 5: 0.14 mm²
1 red
2 black
3 blue
4 brown
5 yellow, green, orange, gray

M12 socket, straight, B coded, suitable for drag chains	Item No.	Pack. Unit
M12 socket, straight, one free cable end, 2.0 m	**756-1501/060-020**	1
M12 socket, straight, one free cable end, 5.0 m	**756-1501/060-050**	1
M12 socket, straight, one free cable end, 10.0 m	**756-1501/060-100**	1
M12 socket, straight, one free cable end, 20.0 m	**756-1501/060-200**	1



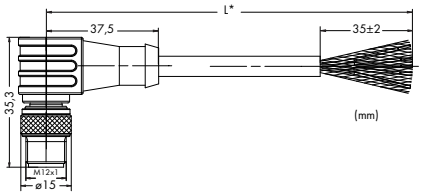
Pin 1 - 5: 0.14 mm²
1 red
2 black
3 blue
4 brown
5 yellow, green, orange, gray

M12 socket, right angle, B coded, suitable for drag chains	Item No.	Pack. Unit
M12 socket, right angle, one free cable end, 2.0 m	**756-1502/060-020**	1
M12 socket, right angle, one free cable end, 5.0 m	**756-1502/060-050**	1
M12 socket, right angle, one free cable end, 10.0 m	**756-1502/060-100**	1
M12 socket, right angle, one free cable end, 20.0 m	**756-1502/060-200**	1



Pin 1 - 5: 0.14 mm²
1 red
2 black
3 blue
4 brown
5 yellow, green, orange, gray

M12 plug, straight, B coded, suitable for drag chains	Item No.	Pack. Unit
M12 plug, straight, one free cable end, 2.0 m	**756-1503/060-020**	1
M12 socket, straight, one free cable end, 5.0 m	**756-1503/060-050**	1
M12 plug, straight, one free cable end, 10.0 m	**756-1503/060-100**	1
M12 plug, straight, one free cable end, 20.0 m	**756-1503/060-200**	1



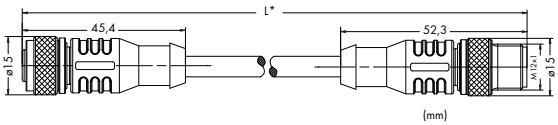
Pin 1 - 5: 0.14 mm²
1 red
2 black
3 blue
4 brown
5 yellow, green, orange, gray

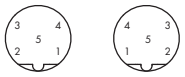
M12 plug, right angle, B coded, suitable for drag chains	Item No.	Pack. Unit
M12 plug, right angle, one free cable end, 2.0 m	**756-1504/060-020**	1
M12 plug, right angle, one free cable end, 5.0 m	**756-1504/060-050**	1
M12 plug, right angle, one free cable end, 10.0 m	**756-1504/060-100**	1
M12 plug, right angle, one free cable end, 20.0 m	**756-1504/060-200**	1

* Cable length

WAGO-SPEEDWAY 767

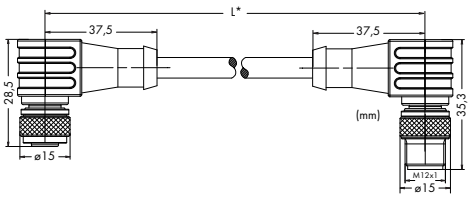
S-BUS cable suitable for drag chains (system bus cable), assembled on both ends and unassembled

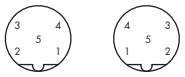




Pin 1 - 5: 0.14 mm²
1 red
2 black
3 blue
4 brown
5 yellow, green, orange, gray

M12 socket, straight / M12 plug, straight, B coded, suitable for drag chains	Item No.	Pack. Unit
M12 socket, straight, M12 plug, straight, 0.2 m	**756-1505/060-002**	1
M12 socket, straight, M12 plug, straight, 0.3 m	**756-1505/060-003**	1
M12 socket, straight, M12 plug, straight, 0.5 m	**756-1505/060-005**	1
M12 socket, straight, M12 plug, straight, 1.0 m	**756-1505/060-010**	1
M12 socket, straight, M12 plug, straight, 2.0 m	**756-1505/060-020**	1
M12 socket, straight, M12 plug, straight, 5.0 m	**756-1505/060-050**	1
M12 socket, straight, M12 plug, straight, 10.0 m	**756-1505/060-100**	1
M12 socket, straight, M12 plug, straight, 20.0 m	**756-1505/060-200**	1
M12 socket, straight, M12 plug, straight, 50.0 m	**756-1505/060-500**	1





Pin 1 - 5: 0.14 mm²
1 red
2 black
3 blue
4 brown
5 yellow, green, orange, gray

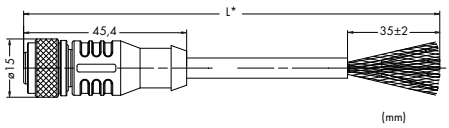
M12 socket, right angle / M12 plug, right angle, B coded, suitable for drag chains	Item No.	Pack. Unit
M12 socket, right angle, M12 plug, right angle, 0.2 m	**756-1506/060-002**	1
M12 socket, right angle, M12 plug, right angle, 0.3 m	**756-1506/060-003**	1
M12 socket, right angle, M12 plug, right angle, 0.5 m	**756-1506/060-005**	1
M12 socket, right angle, M12 plug, right angle, 1.0 m	**756-1506/060-010**	1
M12 socket, right angle, M12 plug, right angle, 2.0 m	**756-1506/060-020**	1
M12 socket, right angle, M12 plug, right angle, 5.0 m	**756-1506/060-050**	1
M12 socket, right angle, M12 plug, right angle, 10.0 m	**756-1506/060-100**	1
M12 socket, right angle, M12 plug, right angle, 20.0 m	**756-1506/060-200**	1
M12 socket, right angle, M12 plug, right angle, 50.0 m	**756-1506/060-500**	1

* Cable length

S-Bus cable, not fitted with connectors, suitable for drag chains	Item No.	Pack. Unit
S-BUS cable, not fitted with connectors, 25.0 m	**756-1500/000-250**	1
S-BUS cable, not fitted with connectors, 50.0 m	**756-1500/000-500**	1
S-BUS cable, not fitted with connectors, 100.0 m	**756-1500/000-1000**	1

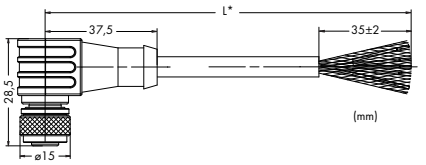
WAGO-SPEEDWAY 767

S-BUS cables, with one end of cable fitted



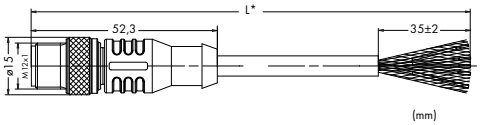
Pin 1 - 5: 0.14 mm²
1 white/blue
2 blue
3 white/orange
4 orange
5 white/green, green, white/brown, brown

M12 socket, straight, B coded	Item No.	Pack. Unit
M12 socket, straight, one free cable end, 2.0 m	**756-1301/060-020**	1
M12 socket, straight, one free cable end, 5.0 m	**756-1301/060-050**	1
M12 socket, straight, one free cable end, 10.0 m	**756-1301/060-100**	1
M12 socket, straight, one free cable end, 20.0 m	**756-1301/060-200**	1



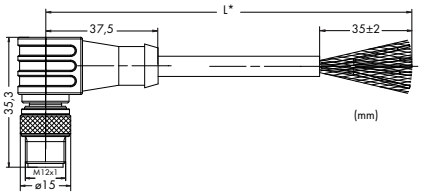
Pin 1 - 5: 0.14 mm²
1 white/blue
2 blue
3 white/orange
4 orange
5 white/green, green, white/brown, brown

M12 socket, right angle, B coded	Item No.	Pack. Unit
M12 socket, right angle, one free cable end, 2.0 m	**756-1302/060-020**	1
M12 socket, right angle, one free cable end, 5.0 m	**756-1302/060-050**	1
M12 socket, right angle, one free cable end, 10.0 m	**756-1302/060-100**	1
M12 socket, right angle, one free cable end, 20.0 m	**756-1302/060-200**	1



Pin 1 - 5: 0.14 mm²
1 white/blue
2 blue
3 white/orange
4 orange
5 white/green, green, white/brown, brown

M12 plug, straight, B coded	Item No.	Pack. Unit
M12 plug, straight, one free cable end, 2.0 m	**756-1303/060-020**	1
M12 plug, straight, one free cable end, 5.0 m	**756-1303/060-050**	1
M12 plug, straight, one free cable end, 10.0 m	**756-1303/060-100**	1
M12 plug, straight, one free cable end, 20.0 m	**756-1303/060-200**	1



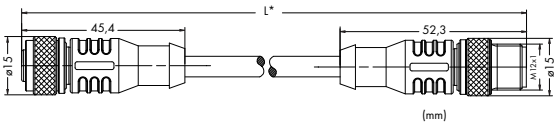
Pin 1 - 5: 0.14 mm²
1 white/blue
2 blue
3 white/orange
4 orange
5 white/green, green, white/brown, brown

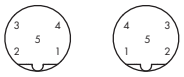
M12 plug, right angle, B coded	Item No.	Pack. Unit
M12 plug, right angle, one free cable end, 2.0 m	**756-1304/060-020**	1
M12 plug, right angle, one free cable end, 5.0 m	**756-1304/060-050**	1
M12 plug, right angle, one free cable end, 10.0 m	**756-1304/060-100**	1
M12 plug, right angle, one free cable end, 20.0 m	**756-1304/060-200**	1

* Cable length

WAGO-SPEEDWAY 767

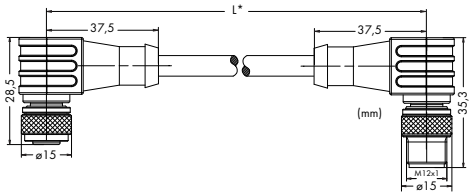
S-BUS cables, with both ends of cable fitted and not fitted with connectors

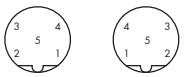




Pin 1 - 5: 0.14 mm²
1 white/blue
2 blue
3 white/orange
4 orange
5 white/green, green, white/brown, brown

M12 socket, straight / M12 plug, straight, B coded	Item No.	Pack. Unit
M12 socket, straight, M12 plug, straight, 0.2 m	**756-1305/060-002**	1
M12 socket, straight, M12 plug, straight, 0.3 m	**756-1305/060-003**	1
M12 socket, straight, M12 plug, straight, 0.5 m	**756-1305/060-005**	1
M12 socket, straight, M12 plug, straight, 1.0 m	**756-1305/060-010**	1
M12 socket, straight, M12 plug, straight, 2.0 m	**756-1305/060-020**	1
M12 socket, straight, M12 plug, straight, 5.0 m	**756-1305/060-050**	1
M12 socket, straight, M12 plug, straight, 10.0 m	**756-1305/060-100**	1
M12 socket, straight, M12 plug, straight, 20.0 m	**756-1305/060-200**	1
M12 socket, straight, M12 plug, straight, 50.0 m	**756-1305/060-500**	1





Pin 1 - 5: 0.14 mm²
1 white/blue
2 blue
3 white/orange
4 orange
5 white/green, green, white/brown, brown

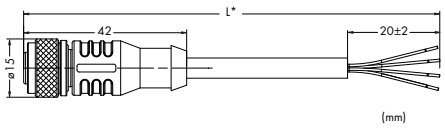
M12 socket, right angle / M12 plug, right angle, B coded	Item No.	Pack. Unit
M12 socket, right angle, M12 plug, right angle, 0.2 m	**756-1306/060-002**	1
M12 socket, right angle, M12 plug, right angle, 0.3 m	**756-1306/060-003**	1
M12 socket, right angle, M12 plug, right angle, 0.5 m	**756-1306/060-005**	1
M12 socket, right angle, M12 plug, right angle, 1.0 m	**756-1306/060-010**	1
M12 socket, right angle, M12 plug, right angle, 2.0 m	**756-1306/060-020**	1
M12 socket, right angle, M12 plug, right angle, 5.0 m	**756-1306/060-050**	1
M12 socket, right angle, M12 plug, right angle, 10.0 m	**756-1306/060-100**	1
M12 socket, right angle, M12 plug, right angle, 20.0 m	**756-1306/060-200**	1
M12 socket, right angle, M12 plug, right angle, 50.0 m	**756-1306/060-500**	1

S-Bus cable, not fitted with connectors	Item No.	Pack. Unit
S-BUS cable, not fitted with connectors, 25.0 m	**756-1300/000-250**	1
S-BUS cable, not fitted with connectors, 50.0 m	**756-1300/000-500**	1
S-BUS cable, not fitted with connectors, 100.0 m	**756-1300/000-1000**	1

* Cable length

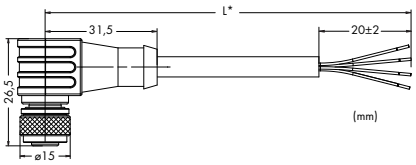
WAGO-SPEEDWAY 767

Power supply cables, with one end of cable fitted



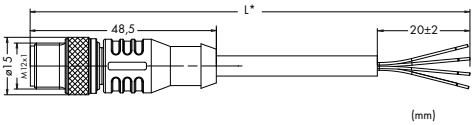
Pin 1 - 4: 0.75 mm²
1 brown
2 white
3 blue
4 black

M12 socket, straight, A coded	Item No.	Pack. Unit
M12 socket, straight, one free cable end, 2.0 m	**756-3101/040-020**	1
M12 socket, straight, one free cable end, 5.0 m	**756-3101/040-050**	1
M12 socket, straight, one free cable end, 10.0 m	**756-3101/040-100**	1
M12 socket, straight, one free cable end, 20.0 m	**756-3101/040-200**	1



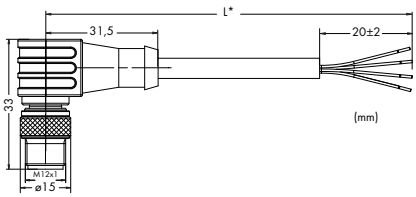
Pin 1 - 4: 0.75 mm²
1 brown
2 white
3 blue
4 black

M12 socket, right angle, A coded	Item No.	Pack. Unit
M12 socket, right angle, one free cable end, 2.0 m	**756-3102/040-020**	1
M12 socket, right angle, one free cable end, 5.0 m	**756-3102/040-050**	1
M12 socket, right angle, one free cable end, 10.0 m	**756-3102/040-100**	1
M12 socket, right angle, one free cable end, 20.0 m	**756-3102/040-200**	1



Pin 1 - 4: 0.75 mm²
1 brown
2 white
3 blue
4 black

M12 plug, straight, A coded	Item No.	Pack. Unit
M12 plug, straight, one free cable end, 2.0 m	**756-3103/040-020**	1
M12 plug, straight, one free cable end, 5.0 m	**756-3103/040-050**	1
M12 plug, straight, one free cable end, 10.0 m	**756-3103/040-100**	1
M12 plug, straight, one free cable end, 20.0 m	**756-3103/040-200**	1



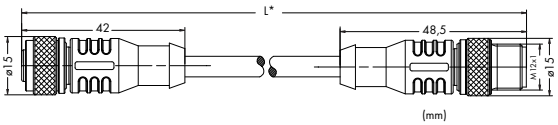
Pin 1 - 4: 0.75 mm²
1 brown
2 white
3 blue
4 black

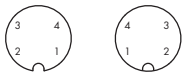
M12 plug, right angle, A coded	Item No.	Pack. Unit
M12 plug, right angle, one free cable end, 2.0 m	**756-3104/040-020**	1
M12 plug, right angle, one free cable end, 5.0 m	**756-3104/040-050**	1
M12 plug, right angle, one free cable end, 10.0 m	**756-3104/040-100**	1
M12 plug, right angle, one free cable end, 20.0 m	**756-3104/040-200**	1

* Cable length

WAGO-SPEEDWAY 767

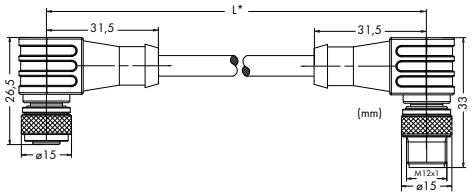
Power supply cables, with both ends fitted and not fitted with connectors





Pin 1 - 4: 0.75 mm²
1 brown
2 white
3 blue
4 black

M12 socket, straight / M12 plug, straight, A coded	Item No.	Pack. Unit
M12 socket, straight, M12 plug, straight, 0.2 m	**756-3105/040-002**	1
M12 socket, straight, M12 plug, straight, 0.3 m	**756-3105/040-003**	1
M12 socket, straight, M12 plug, straight, 0.5 m	**756-3105/040-005**	1
M12 socket, straight, M12 plug, straight, 1.0 m	**756-3105/040-010**	1
M12 socket, straight, M12 plug, straight, 2.0 m	**756-3105/040-020**	1
M12 socket, straight, M12 plug, straight, 5.0 m	**756-3105/040-050**	1
M12 socket, straight, M12 plug, straight, 10.0 m	**756-3105/040-100**	1
M12 socket, straight, M12 plug, straight, 20.0 m	**756-3105/040-200**	1



Pin 1 - 4: 0.75 mm²
1 brown
2 white
3 blue
4 black

M12 socket, right angle / M12 plug, right angle, A coded	Item No.	Pack. Unit
M12 socket, right angle, M12 plug, right angle, 0.2 m	**756-3106/040-002**	1
M12 socket, right angle, M12 plug, right angle, 0.3 m	**756-3106/040-003**	1
M12 socket, right angle, M12 plug, right angle, 0.5 m	**756-3106/040-005**	1
M12 socket, right angle, M12 plug, right angle, 1.0 m	**756-3106/040-010**	1
M12 socket, right angle, M12 plug, right angle, 2.0 m	**756-3106/040-020**	1
M12 socket, right angle, M12 plug, right angle, 5.0 m	**756-3106/040-050**	1
M12 socket, right angle, M12 plug, right angle, 10.0 m	**756-3106/040-100**	1
M12 socket, right angle, M12 plug, right angle, 20.0 m	**756-3106/040-200**	1

Power supply cable, not fitted with connectors	Item No.	Pack. Unit
Power supply cable, not fitted with connectors, 25.0 m	**756-3100/000-250**	1
Power supply cable, not fitted with connectors, 50.0 m	**756-3100/000-500**	1
Power supply cable, not fitted with connectors, 100.0 m	**756-3100/000-1000**	1

* Cable length

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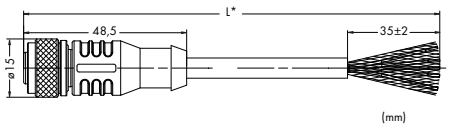
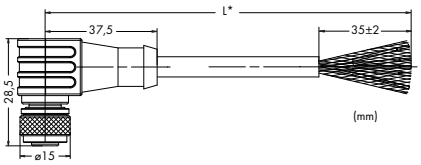
PROFIBUS cables, with one end of cable fitted



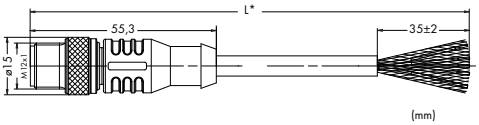
Pin 2 and 4: 0.34 mm²
1 n.c.
2 green
3 n.c.
4 red
5 n.c.

M12 socket, straight, B coded	Item No.	Pack. Unit
M12 socket, straight, one free cable end, 2.0 m	**756-1101/060-020**	1
M12 socket, straight, one free cable end, 5.0 m	**756-1101/060-050**	1
M12 socket, straight, one free cable end, 10.0 m	**756-1101/060-100**	1
M12 socket, straight, one free cable end, 20.0 m	**756-1101/060-200**	1



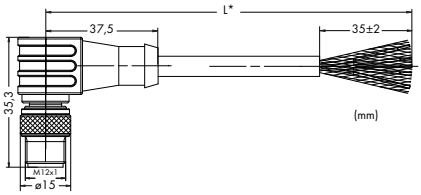
Pin 2 and 4: 0.34 mm²
1 n.c.
2 green
3 n.c.
4 red
5 n.c.

M12 socket, right angle, B coded	Item No.	Pack. Unit
M12 socket, right angle, one free cable end, 2.0 m	**756-1102/060-020**	1
M12 socket, right angle, one free cable end, 5.0 m	**756-1102/060-050**	1
M12 socket, right angle, one free cable end, 10.0 m	**756-1102/060-100**	1
M12 socket, right angle, one free cable end, 20.0 m	**756-1102/060-200**	1



Pin 2 and 4: 0.34 mm²
1 n.c.
2 green
3 n.c.
4 red
5 n.c.

M12 plug, straight, B coded	Item No.	Pack. Unit
M12 plug, straight, one free cable end, 2.0 m	**756-1103/060-020**	1
M12 plug, straight, one free cable end, 5.0 m	**756-1103/060-050**	1
M12 plug, straight, one free cable end, 10.0 m	**756-1103/060-100**	1
M12 plug, straight, one free cable end, 20.0 m	**756-1103/060-200**	1



Pin 2 and 4: 0.34 mm²
1 n.c.
2 green
3 n.c.
4 red
5 n.c.

M12 plug, right angle, B coded	Item No.	Pack. Unit
M12 plug, right angle, one free cable end, 2.0 m	**756-1104/060-020**	1
M12 plug, right angle, one free cable end, 5.0 m	**756-1104/060-050**	1
M12 plug, right angle, one free cable end, 10.0 m	**756-1104/060-100**	1
M12 plug, right angle, one free cable end, 20.0 m	**756-1104/060-200**	1

* Cable length

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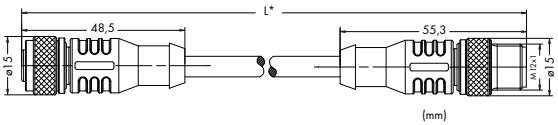
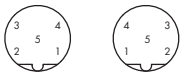
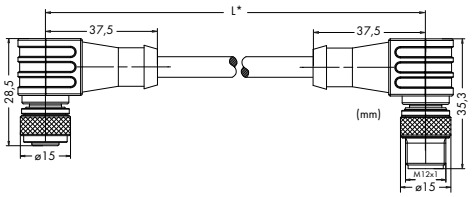
PROFIBUS cables, with both ends of cable fitted

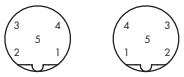




Pin 2 and 4: 0.34 mm²
1 n.c.
2 green
3 n.c.
4 red
5 n.c.

M12 socket, straight / M12 plug, straight, B coded	Item No.	Pack. Unit
M12 socket, straight, M12 plug, straight, 2.0 m	**756-1105/060-020**	1
M12 socket, straight, M12 plug, straight, 5.0 m	**756-1105/060-050**	1
M12 socket, straight, M12 plug, straight, 10.0 m	**756-1105/060-100**	1
M12 socket, straight, M12 plug, straight, 20.0 m	**756-1105/060-200**	1





Pin 2 and 4: 0.34 mm²
1 n.c.
2 green
3 n.c.
4 red
5 n.c.

M12 socket, right angle / M12 plug, right angle, B coded	Item No.	Pack. Unit
M12 socket, right angle, M12 plug, right angle, 2.0 m	**756-1106/060-020**	1
M12 socket, right angle, M12 plug, right angle, 5.0 m	**756-1106/060-050**	1
M12 socket, right angle, M12 plug, right angle, 10.0 m	**756-1106/060-100**	1
M12 socket, right angle, M12 plug, right angle, 20.0 m	**756-1106/060-200**	1

* Cable length

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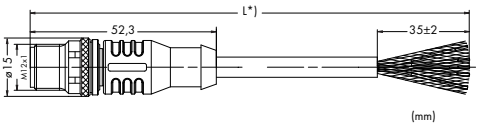
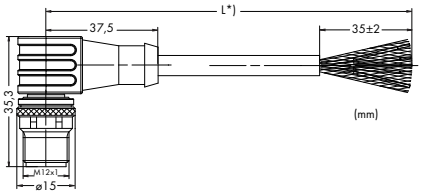
ETHERNET, PROFINET cables, with one or both ends of cable fitted



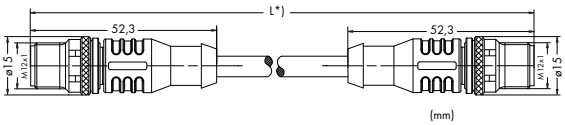
Pin 1 - 4: 0.34 mm²
1 yellow
2 white
3 orange
4 blue

M12 plug, straight, D coded	Item No.	Pack. Unit
M12 plug, straight, one free cable end, 2.0 m	**756-1201/060-020**	1
M12 plug, straight, one free cable end, 5.0 m	**756-1201/060-050**	1
M12 plug, straight, one free cable end, 10.0 m	**756-1201/060-100**	1
M12 plug, straight, one free cable end, 20.0 m	**756-1201/060-200**	1



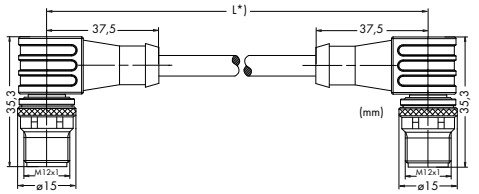
Pin 1 - 4: 0.34 mm²
1 yellow
2 white
3 orange
4 blue

M12 plug, right angle, D coded	Item No.	Pack. Unit
M12 plug, right angle, one free cable end, 2.0 m	**756-1202/060-020**	1
M12 plug, right angle, one free cable end, 5.0 m	**756-1202/060-050**	1
M12 plug, right angle, one free cable end, 10.0 m	**756-1202/060-100**	1
M12 plug, right angle, one free cable end, 20.0 m	**756-1202/060-200**	1



Pin 1 - 4: 0.34 mm²
1 yellow
2 white
3 orange
4 blue

M12 plug, straight / M12 plug, straight, D coded	Item No.	Pack. Unit
M12 plug, straight, M12 plug, straight, 2.0 m	**756-1203/060-020**	1
M12 plug, straight, M12 plug, straight, 5.0 m	**756-1203/060-050**	1
M12 plug, straight, M12 plug, straight, 10.0 m	**756-1203/060-100**	1
M12 plug, straight, M12 plug, straight, 20.0 m	**756-1203/060-200**	1



Pin 1 - 4: 0.34 mm²
1 yellow
2 white
3 orange
4 blue

M12 plug, right angle / M12 plug, right angle, D coded	Item No.	Pack. Unit
M12 plug, right angle, M12 plug, right angle, 2.0 m	**756-1204/060-020**	1
M12 plug, right angle, M12 plug, right angle, 5.0 m	**756-1204/060-050**	1
M12 plug, right angle, M12 plug, right angle, 10.0 m	**756-1204/060-100**	1
M12 plug, right angle, M12 plug, right angle, 20.0 m	**756-1204/060-200**	1

* Cable length

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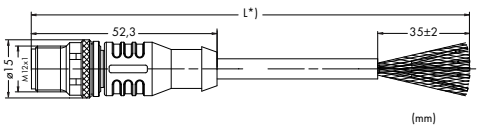
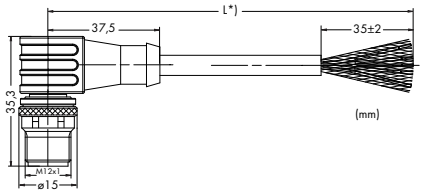
sercos cabel, fitted at one or at both ends



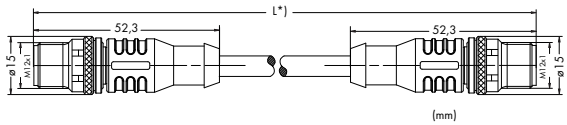
Pin 1 - 4: 0.34 mm²
1 yellow
2 white
3 orange
4 blue

M12 plug, straight, D coded	Item No.	Pack. Unit
M12 plug, straight, one free cable end, 2.0 m	**756-1601/060-020**	1
M12 plug, straight, one free cable end, 5.0 m	**756-1601/060-050**	1
M12 plug, straight, one free cable end, 10.0 m	**756-1601/060-100**	1
M12 plug, straight, one free cable end, 20.0 m	**756-1601/060-200**	1



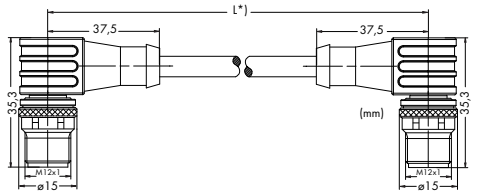
Pin 1 - 4: 0.34 mm²
1 yellow
2 white
3 orange
4 blue

M12 plug, right angle, D coded	Item No.	Pack. Unit
M12 plug, right angle, one free cable end, 2.0 m	**756-1602/060-020**	1
M12 plug, right angle, one free cable end, 5.0 m	**756-1602/060-050**	1
M12 plug, right angle, one free cable end, 10.0 m	**756-1602/060-100**	1
M12 plug, right angle, one free cable end, 20.0 m	**756-1602/060-200**	1



Pin 1 - 4: 0.34 mm²
1 yellow
2 white
3 orange
4 blue

M12 plug, straight / M12 plug, straight, D coded	Item No.	Pack. Unit
M12 plug, straight, M12 plug, straight, 2.0 m	**756-1603/060-020**	1
M12 plug, straight, M12 plug, straight, 5.0 m	**756-1603/060-050**	1
M12 plug, straight, M12 plug, straight, 10.0 m	**756-1603/060-100**	1
M12 plug, straight, M12 plug, straight, 20.0 m	**756-1603/060-200**	1



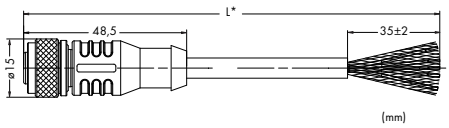
Pin 1 - 4: 0.34 mm²
1 yellow
2 white
3 orange
4 blue

M12 plug, right angle / M12 plug, right angle, D coded	Item No.	Pack. Unit
M12 plug, right angle, M12 plug, right angle, 2.0 m	**756-1604/060-020**	1
M12 plug, right angle, M12 plug, right angle, 5.0 m	**756-1604/060-050**	1
M12 plug, right angle, M12 plug, right angle, 10.0 m	**756-1604/060-100**	1
M12 plug, right angle, M12 plug, right angle, 20.0 m	**756-1604/060-200**	1

* Cable length

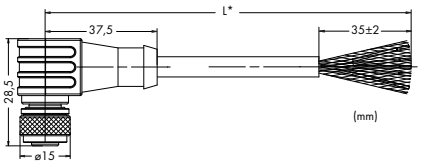
WAGO-SPEEDWAY 767

CANopen, DeviceNet cables, with one end of cable fitted



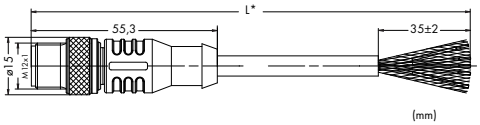
Pin 2 and 3: 0.38 mm²
Pin 4 and 5: 0.67 mm²
1 = Shield
2 = red
3 = black
4 = white
5 = blue

M12 socket, straight, A coded	Item No.	Pack. Unit
M12 socket, straight, one free cable end, 2.0 m	**756-1401/060-020**	1
M12 socket, straight, one free cable end, 5.0 m	**756-1401/060-050**	1
M12 socket, straight, one free cable end, 10.0 m	**756-1401/060-100**	1
M12 socket, straight, one free cable end, 20.0 m	**756-1401/060-200**	1



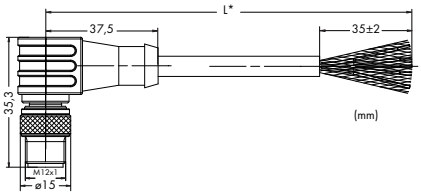
Pin 2 and 3: 0.38 mm²
Pin 4 and 5: 0.67 mm²
1 = Shield
2 = red
3 = black
4 = white
5 = blue

M12 socket, right angle, A coded	Item No.	Pack. Unit
M12 socket, right angle, one free cable end, 2.0 m	**756-1402/060-020**	1
M12 socket, right angle, one free cable end, 5.0 m	**756-1402/060-050**	1
M12 socket, right angle, one free cable end, 10.0 m	**756-1402/060-100**	1
M12 socket, right angle, one free cable end, 20.0 m	**756-1402/060-200**	1



Pin 2 and 3: 0.38 mm²
Pin 4 and 5: 0.67 mm²
1 = Shield
2 = red
3 = black
4 = white
5 = blue

M12 plug, straight, A coded	Item No.	Pack. Unit
M12 plug, straight, one free cable end, 2.0 m	**756-1403/060-020**	1
M12 plug, straight, one free cable end, 5.0 m	**756-1403/060-050**	1
M12 plug, straight, one free cable end, 10.0 m	**756-1403/060-100**	1
M12 plug, straight, one free cable end, 20.0 m	**756-1403/060-200**	1

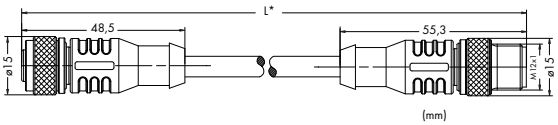


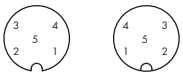
Pin 2 and 3: 0.38 mm²
Pin 4 and 5: 0.67 mm²
1 = Shield
2 = red
3 = black
4 = white
5 = blue

M12 plug, right angle, A coded	Item No.	Pack. Unit
M12 plug, right angle, one free cable end, 2.0 m	**756-1404/060-020**	1
M12 plug, right angle, one free cable end, 5.0 m	**756-1404/060-050**	1
M12 plug, right angle, one free cable end, 10.0 m	**756-1404/060-100**	1
M12 plug, right angle, one free cable end, 20.0 m	**756-1404/060-200**	1

WAGO-SPEEDWAY 767

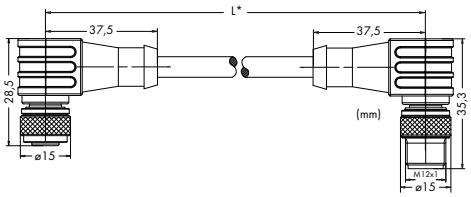
CANopen, DeviceNet cables, with both ends of cable fitted

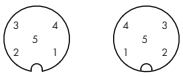




Pin 2 and 3: 0.38 mm²
Pin 4 and 5: 0.67 mm²
1 = Shield
2 = red
3 = black
4 = white
5 = blue

M12 socket, straight / M12 plug, straight, A coded	Item No.	Pack. Unit
M12 socket, straight, M12 plug, straight, 2.0 m	**756-1405/060-020**	1
M12 socket, straight, M12 plug, straight, 5.0 m	**756-1405/060-050**	1
M12 socket, straight, M12 plug, straight, 10.0 m	**756-1405/060-100**	1
M12 socket, straight, M12 plug, straight, 20.0 m	**756-1405/060-200**	1



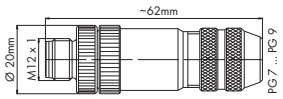


Pin 2 and 3: 0.38 mm²
Pin 4 and 5: 0.67 mm²
1 = Shield
2 = red
3 = black
4 = white
5 = blue

M12 socket, right angle / M12 plug, right angle, A coded	Item No.	Pack. Unit
M12 socket, right angle, M12 plug, right angle, 2.0 m	**756-1406/060-020**	1
M12 socket, right angle, M12 plug, right angle, 5.0 m	**756-1406/060-050**	1
M12 socket, right angle, M12 plug, right angle, 10.0 m	**756-1406/060-100**	1
M12 socket, right angle, M12 plug, right angle, 20.0 m	**756-1406/060-200**	1

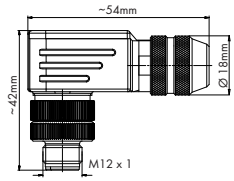
WAGO-SPEEDWAY 767

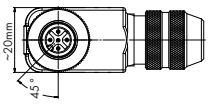
Configurable shielded connectors



Conductor size
Ø 6 ... 8 mm
screw clamp connection:
0.14 ... 0.75 mm²
spring clamp connection:
0.14 ... 0.5 mm²

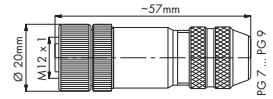
M12 plug, straight, shielded		Item No.	Pack. Unit
M12 plug, A coded, straight, spring clamp technology	CANopen / DeviceNet	**756-9207/060-000**	1
M12 plug, B coded, straight, spring clamp technology	PROFIBUS	**756-9401/060-000**	1
M12 plug, B coded, straight, screw clamp technology	PROFIBUS / S-BUS	**756-9411/060-000**	1
M12 plug, D coded, straight, spring clamp technology	ETHERNET / PROFINET	**756-9501/060-000**	1





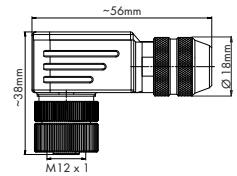
Conductor size
Ø 6 ... 8 mm
screw clamp connection:
0.14 ... 0.75 mm²
spring clamp connection:
0.14 ... 0.5 mm²

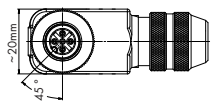
M12 plug, right angle, shielded		Item No.	Pack. Unit
M12 plug, A coded, right angle, spring clamp technology	CANopen / DeviceNet	**756-9211/060-000**	1
M12 plug, B coded, right angle, spring clamp technology	PROFIBUS	**756-9403/060-000**	1
M12 plug, B coded, right angle, screw clamp technology	PROFIBUS / S-BUS	**756-9413/060-000**	1
M12 plug, D coded, right angle, spring clamp technology	ETHERNET / PROFINET	**756-9501/040-000**	1



Conductor size
Ø 6 ... 8 mm
screw clamp connection:
0.14 ... 0.75 mm²
spring clamp connection:
0.14 ... 0.5 mm²

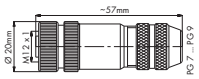
M12 socket, straight, shielded		Item No.	Pack. Unit
M12 socket, A coded, straight, spring clamp technology	CANopen / DeviceNet	**756-9208/060-000**	1
M12 socket, B coded, straight, spring clamp technology	PROFIBUS	**756-9402/060-000**	1
M12 socket, B coded, straight, screw clamp technology	PROFIBUS / S-BUS	**756-9412/060-000**	1

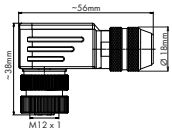


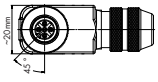


Conductor size
Ø 6 ... 8 mm
screw clamp connection:
0.14 ... 0.75 mm²
spring clamp connection:
0.14 ... 0.5 mm²

M12 socket, right angle, shielded		Item No.	Pack. Unit
M12 socket, A coded, right angle, spring clamp technology	CANopen / DeviceNet	**756-9210/060-000**	1
M12 socket, B coded, right angle, spring clamp technology	PROFIBUS	**756-9404/060-000**	1
M12 socket, B coded, right angle, screw clamp technology	PROFIBUS / S-BUS	**756-9414/060-000**	1







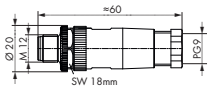
M12 socket

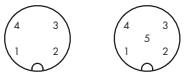
Conductor size
Ø 6 ... 8 mm/0.14 ... 0.50 mm²

M12 Plug, for self assembly		Item No.	Pack. Unit
8-pole, shielded	M12 socket, straight, screw clamp connection	**756-9211/090-000**	1
	M12 socket, right angle, screw clamp connection	**756-9214/090-000**	1

WAGO-I/O-SYSTEM 756

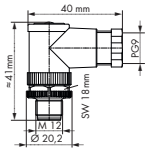
Configurable connectors with PG9 thread

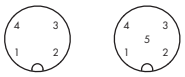




Conductor size
Ø 6 ... 8 mm
screw clamp connection:
0.25 ... 0.75 mm²
spring clamp connection:
0.14 ... 0.5 mm²

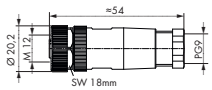
M12 plug, straight, A coded, unshielded			Item No.	Pack. Unit
M12 plug, straight, screw clamp connection PG9	4-pole	Supply	756-9203/040-000	5
M12 plug, straight, spring clamp technology PG9	5-pole	CANopen / DeviceNet	756-9203/050-000	5

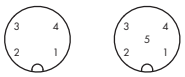




Conductor size
Ø 6 ... 8 mm
screw clamp connection:
0.25 ... 0.75 mm²
spring clamp connection:
0.14 ... 0.5 mm²

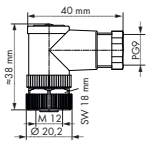
M12 plug, right angle, A coded, unshielded			Item No.	Pack. Unit
M12 plug, right angle, screw clamp connection PG9	4-pole	Supply	756-9206/040-000	5
M12 plug, right angle, spring clamp technology PG9	5-pole	CANopen / DeviceNet	756-9206/050-000	5

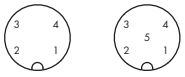




Conductor size
Ø 6 ... 8 mm
screw clamp connection:
0.25 ... 0.75 mm²
spring clamp connection:
0.14 ... 0.5 mm²

M12 socket, straight, A coded, unshielded			Item No.	Pack. Unit
M12 socket, straight, screw clamp connection PG9	4-pole	Supply	756-9213/040-000	5
M12 socket, straight, spring clamp technology PG9	5-pole	CANopen / DeviceNet	756-9213/050-000	5



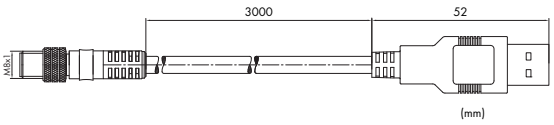


Conductor size
Ø 6 ... 8 mm
screw clamp connection:
0.25 ... 0.75 mm²
spring clamp connection:
0.14 ... 0.5 mm²

M12 socket, right angle, A coded, unshielded			Item No.	Pack. Unit
M12 socket, right angle, screw clamp connection PG9	4-pole	Supply	756-9216/040-000	5
M12 socket, right angle, spring clamp technology PG9	5-pole	CANopen / DeviceNet	756-9216/050-000	5

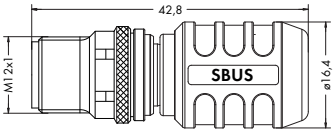
WAGO-SPEEDWAY 767

USB communication cable, terminating resistors

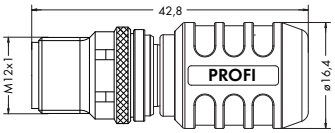


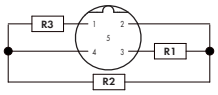
Pin 1 = red
Pin 2 = white
Pin 3 = green
Pin 4 = black

Description	Item No.	Pack. Unit
USB communication cable	**756-4101/042-030**	1



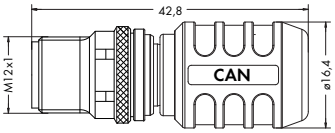
Description	Item No.	Pack. Unit
M12 system bus terminating plug, B coded, straight	**756-9409/060-000**	1





R3=390 Ω 0,4 W
R2=220 Ω 0,4 W
R1=390 Ω 0,4 W

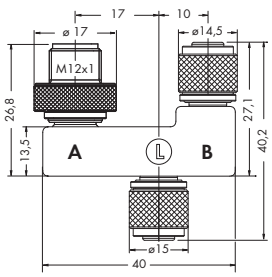
Description	Item No.	Pack. Unit
M12 PROFIBUS terminating plug, B coded, straight	**756-9405/060-000**	1

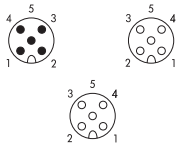


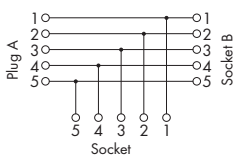
R1=120 Ω 0,25 W

Description	Item No.	Pack. Unit
M12 CANopen, DeviceNet terminating plug, A coded, straight	**756-9209/060-000**	1

T-piece for bus cable

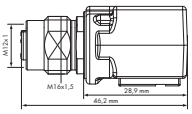


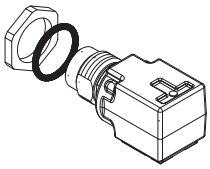


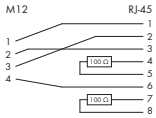


1 = Drain
2 = +24 V
3 = GND (0 V)
4 = CAN_H
5 = CAN_L

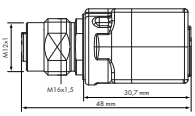
Description		Item No.	Pack. Unit
M12 DeviceNet drop T-piece	5-pole	**756-9303/050-000**	5

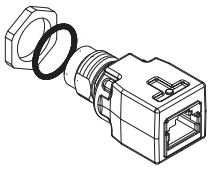


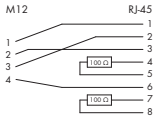




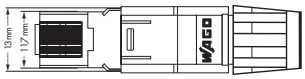
Description	Item No.	Pack. Unit
Adapter, right angle, M12 socket, D coded/RJ-45 socket (also ideally suited for control cabinet feed-through applications or connecting IP67/IP20 components)	**756-9503/040-000**	1

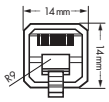


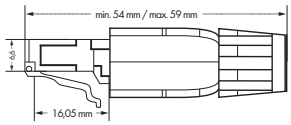




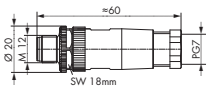
Description	Item No.	Pack. Unit
Adapter, straight, M12 socket, D coded/RJ-45 socket (also ideally suited for control cabinet feed-through applications) or connecting IP67/IP20 components)	**756-9504/040-000**	1

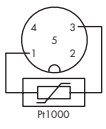






Description	Item No.	Pack. Unit
ETHERNET RJ-45 connector, IP20	**750-975**	1
PROFINET RJ-45 connector, IP20	**750-976**	1



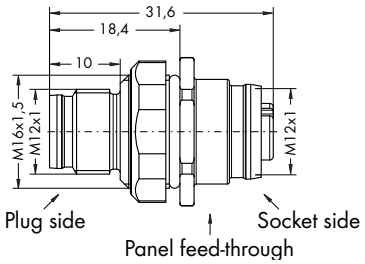


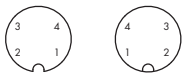
Conductor size
Ø 6 ... 8 mm / 0.14 - 0.5 mm²

Preassembled M12 plug, axial, A coded, unshielded			Item No.	Pack. Unit
Compensation connector, M12 plug, straight, spring clamp technology	5 poles	for 767-6403 Thermocoupler Module (Pt1000 sensor integrated)	**756-9207/050-000**	1

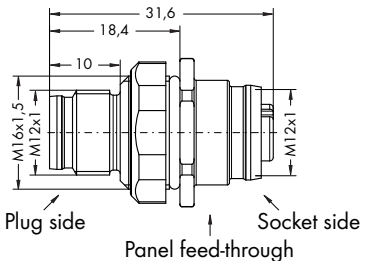
WAGO *SPEEDWAY 767*

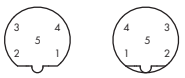
M12 panel feed-through connectors





M12 socket / M12 plug, A coded	Item No.	Pack. Unit
M12 panel feed-through connectors, A coded	**756-9217/050-000**	1





M12 socket / M12 plug, B coded	Item No.	Pack. Unit
M12 panel feed-through connectors, B coded	**756-9406/050-000**	1

Conductor size
Ø 6.5 ... 10.5 mm/max. 2.5 mm²

M23 plug, can be pre-assembled		Item No.	Pack. Unit
6 poles	M23 plug, straight, soldering technology	**756-9601/060-000**	1
6 poles	M23 plug, right angle, soldering technology	**756-9602/060-000**	1

Conductor size
Ø 6.5 ... 10.5 mm/max. 2.5 mm²

M23 socket, can be pre-assembled		Item No.	Pack. Unit
6 poles	M23 socket, straight, soldering technology	**756-9603/060-000**	1
6 poles	M23 socket, right angle, soldering technology	**756-9604/060-000**	1

M23

Description		Item No.	Pack. Unit
M23 assembly key	for easy installation	**756-8201**	1

Torque Wrench M8 and M12

Assembly kit

Assembly kit for 756 Series pre-assembled IP67 cables and connectors, consists of:

- Tool kit
- Torque screwdriver with adjustable torque (window scale)
- Adjustment tool for changing the torque
- One Allen key (interchangeable 4 mm blade) for each of the M8 and M12 connectors

A torque specification of 0.6 Nm for M8 connectors and 1.0 Nm for M12 connectors is required for 756 Series cables and connectors.

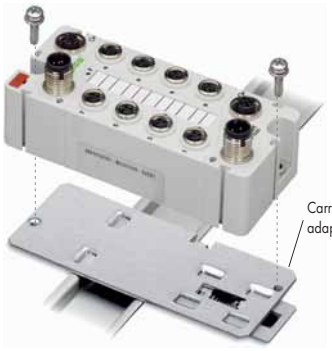
Description	Item No.	Pack. Unit
Torque Wrench M8 and M12	**206-701**	1

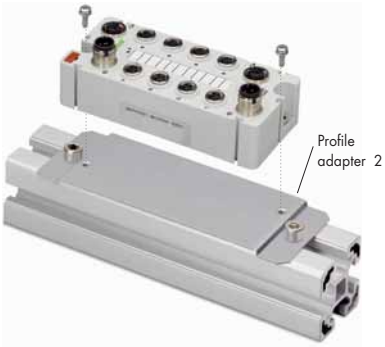
Technical Data	
Torque range	0.4 … 1 Nm ±6 % (adjustable)
Material	**Handle:**
	Polypropylene (PP) for hard zone,
	thermoplastic elastomers (TPE) for soft zone
	Allen key:
	Polyamide (PA), fiber-glass-reinforced;
	chromium-vanadium-molybdenum steel
	(CrMoV) (1.2381)
	Adjustment tools:
	Cellulose acetate; chromium-vanadium-
	molybdenum steel (CrMoV) (1.2381)
Color	black
Standards/specifications	EN ISO 6789; BS EN 26789; ASME
	B107.14.M

WAGO-SPEEDWAY 767

General accessories

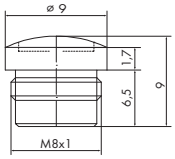
Application examples: I/O module



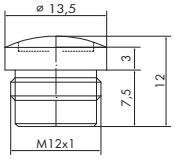


Carrier rail and profile adapters	Item No.	Pack. Unit
Carrier rail adapter 1 for couplers/progr. couplers	**767-121**	1
Carrier rail adapter 2 for I/O and power distribution modules	**767-122**	1
Profile adapter 1 for couplers/progr. couplers	**767-123**	1
Profile adapter 2 for I/O and power distribution modules	**767-124**	1
Carrier rail adapter for I/O module 8 x M12	**767-125**	1
Profile adapter for I/O module 8 x M12	**767-126**	1

M8



M12



M12

M23

Protective caps (for covering unused sensor/actuator connectors)		Item No.	Pack. Unit
M8 protective cap	for unused sockets	**756-8101**	1
M12 protective cap	for unused sockets	**756-8102**	1
M12 protective cap (fieldbus)	for unused plugs	**756-8103**	1
M23 protective cap (fieldbus/supply)	for unused plugs	**756-8104**	1

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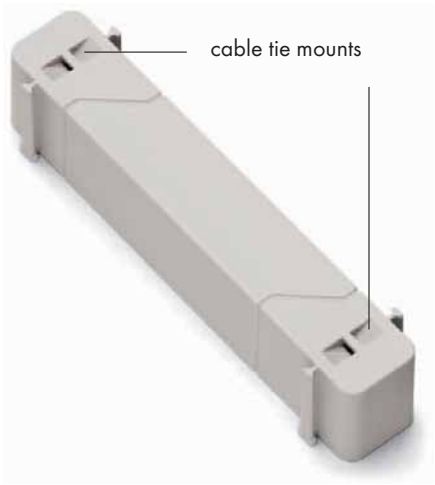
General accessories

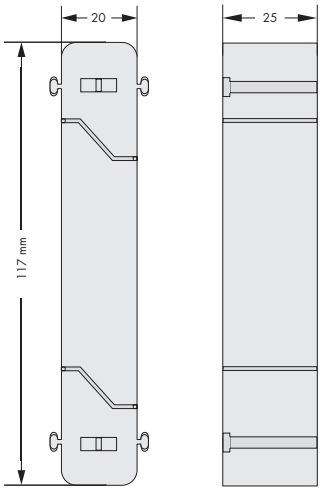
Marker strip

Marking pen with fiber tip

Marking accessories	Item No.	Pack. Unit
Marker strips 8xM8 (for couplers / I/O modules)	767-101	10
Marker strips 4xM12 (for I/O modules)	767-102	10
Marker strips for power distribution modules	767-103	10
Marker strips 8xM12 (for I/O modules)	767-104	10
Marking strips, 9.9 mm wide, 50 m roll	757-901/000-050	1
Marking pen	210-110	1

Spacer module





Description	Item No.	Pack. Unit
Spacer module	767-111	