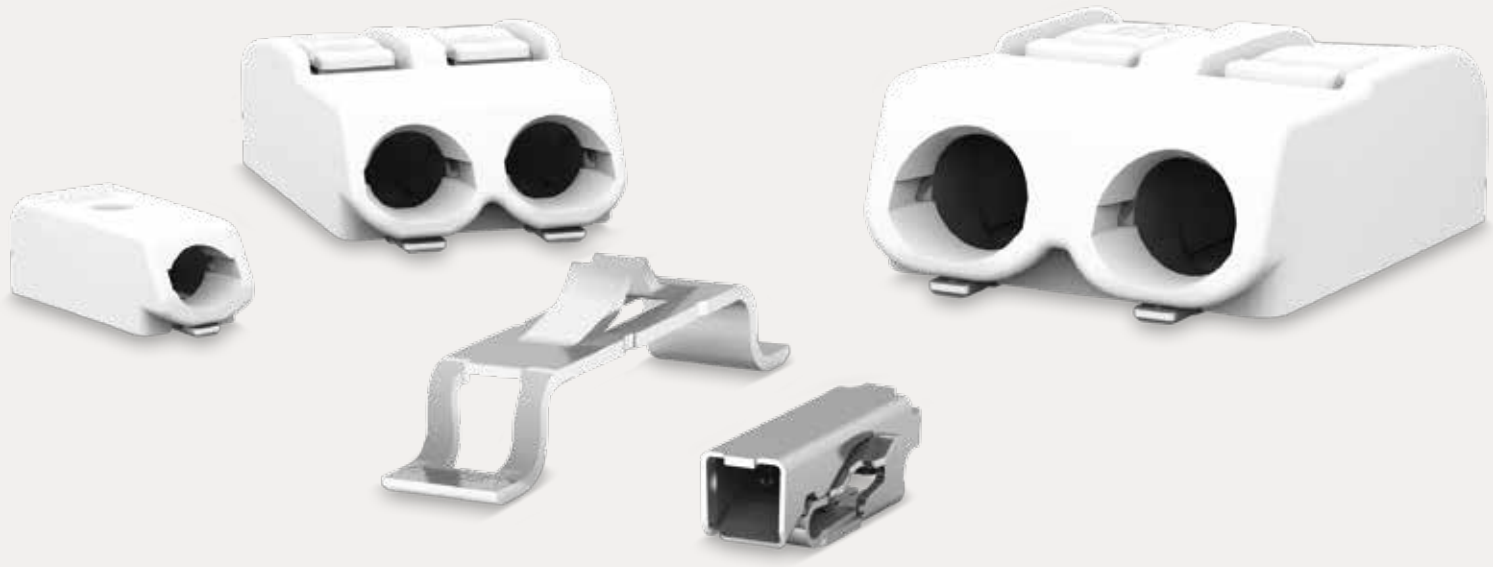
SMD PCB TERMINAL BLOCKS

We Connect Your Lights



SMD PCB TERMINAL BLOCKS

A compact and low-profile PCB connection is required for optimal uniform light distribution, while minimizing shadowing. WAGO's SMD PCB terminal blocks, with their combination of a flat design and wide application scope, fully satisfy these demands. Furthermore, assembling 1-, 2- and 3-pole terminal blocks (2059, 2060 and 2061 Series) without losing any poles provides complete flexibility with a reduced number of variants. All surface-mount PCB terminal blocks come in tape-and-reel packaging for full integration into an automated assembly process.

Applications

The numerous advantages of WAGO's SMD line of PCB terminal blocks enable them to be used in many different applications. Equip the newest generation of ultra-flat LED drivers, via compact, conventionally wired LED spotlights, right up to automatically (front- or back-side) wired, recessed ceiling luminaires, because WAGO's SMD PCB terminal blocks provide the perfect connection between driver and module.
The terminal blocks accommodate a broad range of conductors and carry major international approvals making them highly versatile for worldwide applications.

Advantages:

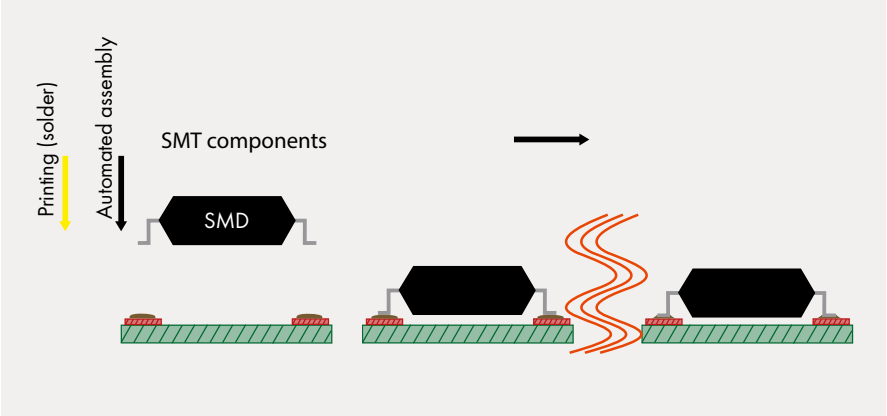
- Low profile minimizes on-board shadowing
- Push-in termination of solid conductors
- Terminal strips of different lengths can be assembled without pole loss, reducing the number of variants and lowering production costs
- Available in 1–3 pole configurations
- Delivery in tape-and-reel packaging for full integration into SMT soldering process
- Lower costs via automated pick-and-place assembly

SURFACE-MOUNT TECHNOLOGY

Surface-Mount Technology (SMT) means soldering electronic components directly onto PCB surface pads without drilling holes. The basic SMT process consists of applying solder paste to the PCB via solder dispensing equipment, screen or stencil printing.

SMT assembly is performed using fully automated placement machines. Surface-mount components are soldered to the board in convection or vapor phase ovens.

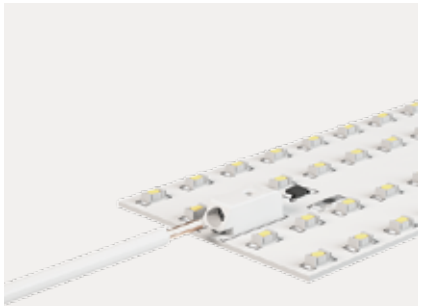
Reflow Soldering Process



2059 SERIES

For the Smallest Sizes

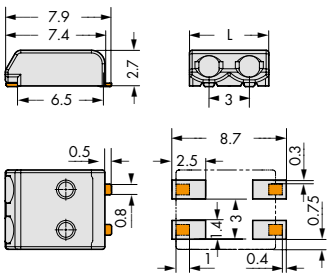
- Low profile: just 2.7 mm
- Pin spacing: 3 mm
- Conductor range: 26 … 20 AWG (0.14 … 0.5 mm²), solid
- Push-in termination of solid conductors
- Easy conductor removal via operating tool
- Ratings: 160 V, 2.5 kV/2 (III), 3 A
- Available in 1–3 pole variants
- Side-by-side assembly without pole loss
- Available in tape-and-reel packaging



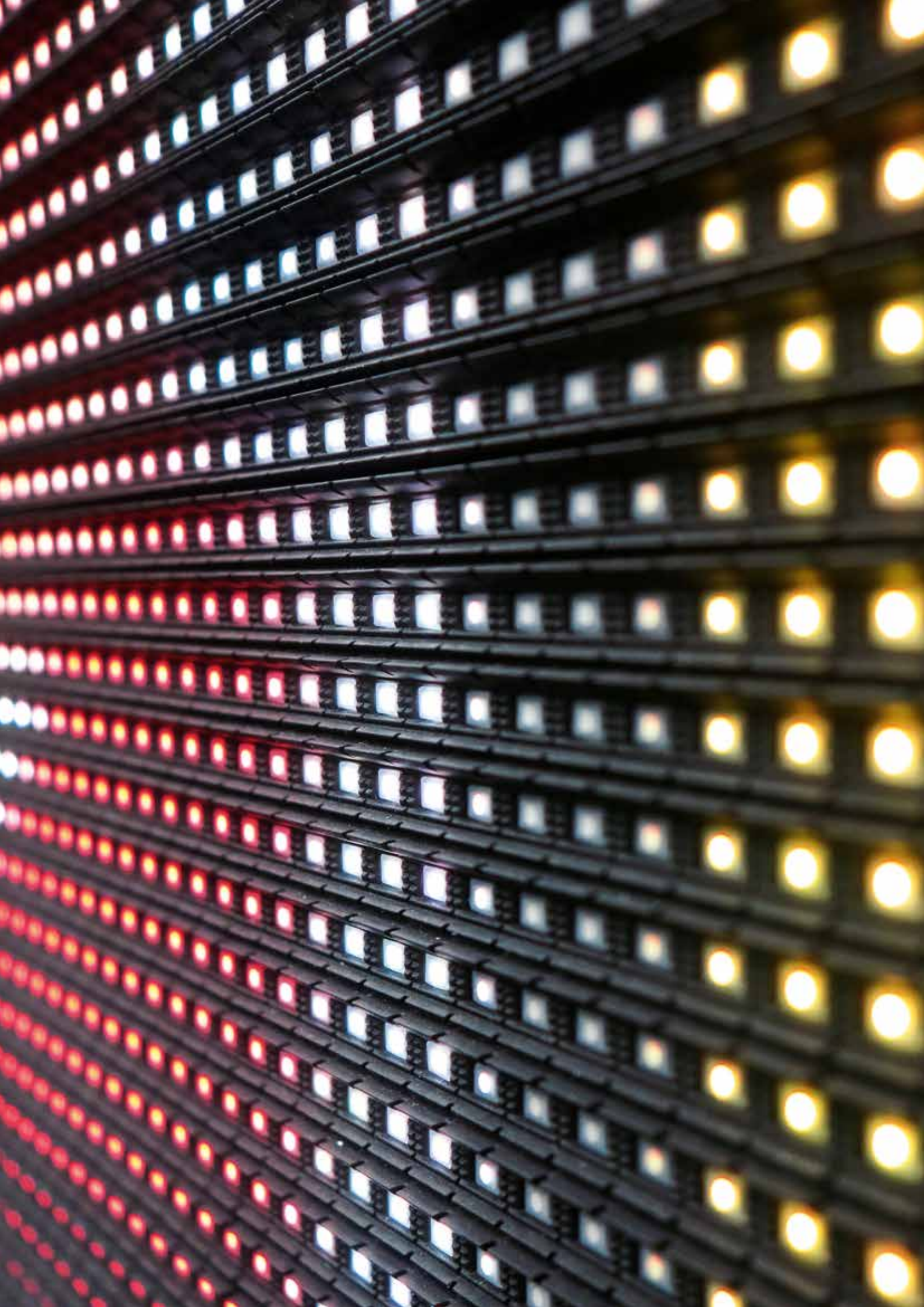
Insert solid conductors via push-in termination.

Easy conductor removal, e.g., via operating tool (206-859)

2059 Series, 3 mm Pin Spacing					
Pin spacing	**3 mm /0.118 inch**			***Conductor Data**	
Ratings per	**IEC/EN 60664-1**			**Connection technology**	PUSH WIRE®
Overvoltage category	III	III	II	**Conductor range: solid**	0.14 … 0.34 mm²
Pollution degree	3	2	2	**AWG**	26 … 22 “sol.”
Rated voltage	63 V	160 V	320 V	**Strip length**	4 … 5.5 mm / 0.16 … 0.22 inch
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV		
Rated current	3 A	3 A	3 A		
Approvals per	**UL 1977**			**Conductor cross-section: solid**	0.5 mm²
Rated voltage, 1-pole	600 V			**AWG**	20 “sol.”
Rated voltage, 2 or more poles	250 V			**Strip length**	6 … 7.5 mm / 0.24 … 0.3 inch
Nominal current UL	3 A			**Note (conductor size)**	No reconnection of smaller conductor cross-sections
Pole No.	**Item No.**			**Pack. Unit**	
SMD PCB terminal blocks in tape-and-reel packaging, white					**Reel diameter: 330 mm**
1	2059-301/998-403			31800 (12 x 2650)	
2	2059-302/998-403			21000 (12 x 1750)	
3	2059-303/998-403			21000 (12 x 1750)	



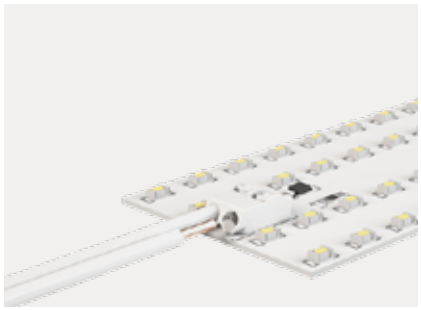
L = (pole no. x pin spacing) – 0.1 mm



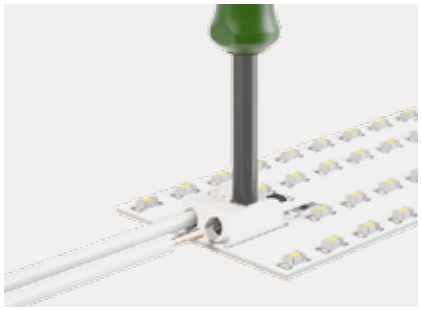
2060 SERIES

For Manual and Automated Wiring Systems

- Low profile: 4.5 mm
- Pin spacing: 4 mm
- Conductor range:
  0.2 … 0.75 mm² (24 … 18 AWG)
- Push-in termination of solid conductors
- Push-buttons simplify insertion/removal of all conductor types
- Ratings: 160 V, 2.5 kV/2 (III), 9 A
- Available in 1–3 pole variants
- Side-by-side assembly without pole loss
- Available in tape-and-reel packaging

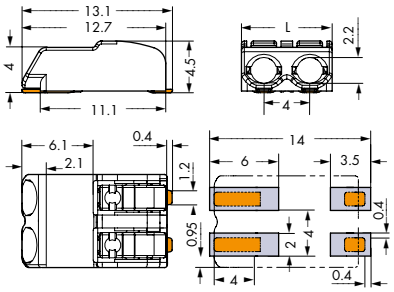


Insert solid conductors via push-in termination.



Insert/remove fine-stranded conductors by lightly pressing on a push-button, e.g., via operating tool (206-860).

2060 Series, 4 mm Pin Spacing					
Pin spacing	4 mm /0.157 inch			Conductor Data	
Ratings per	IEC/EN 60664-1			Connection technology	Push-in CAGE CLAMP®
Overvoltage category	III	III	II	Conductor range: solid	0.2 … 0.75 mm²
Pollution degree	3	2	2	Conductor range: fine-stranded	0.2 … 0.75 mm²
Rated voltage	63 V	160 V	320 V	Conductor range: fine-stranded	0.25 … 0.34 mm² (with insulated ferrule)
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV	Conductor range: fine-stranded	0.25 … 0.34 mm² (with uninsulated ferrule)
Rated current	9 A	9 A	9 A	AWG	24 … 18
Approvals per	UL 1977			Strip length	7 … 9 mm / 0.28 … 0.35 inch
Rated voltage, 1-pole	600 V				
Rated voltage, 2 or more poles	320 V				
Nominal current UL	9 A				
Pole No.	Item No.			Pack. Unit	
SMD PCB terminal blocks in tape-and-reel packaging, white					Reel diameter: 330 mm
1	2060-451/998-404			13500 (9 x 1500)	
2	2060-452/998-404			9000 (9 x 1000)	
3	2060-453/998-404			6750 (9 x 750)	



L = (pole no. x pin spacing) – 0.1 mm

2060 SERIES

Pin Spacing: 8 mm

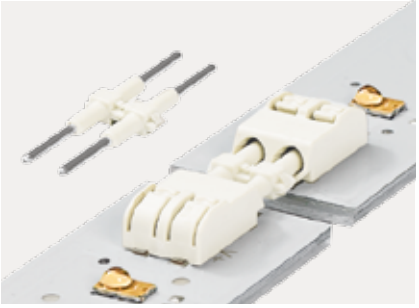
The 2-pole SMD PCB terminal block with 8 mm pin spacing has joined WAGO's portfolio, providing higher rated voltages up to 630 V/6 kV/2 in LED and industrial applications.

Board-to-Board Link

Besides standard wiring, several LED modules can be easily assembled into a single string using board-to-board connection links. This minimizes labor (no manual wiring) and materials needed for connecting LED modules.

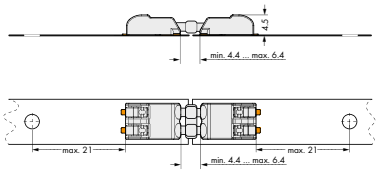
THR and Wave Soldering

WAGO's 2060 Series THR PCB Terminal Blocks with soldering pins are ideal for both THR and wave soldering. The 2060 THR Series is available in both white and black housings. Additional information at:
www.wago.com/2060

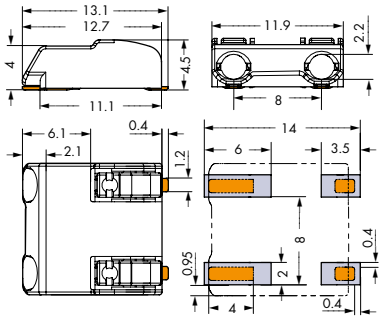


Assembly: Place PCBs on a flat surface and connect terminal blocks on adjoining PCBs via board-to-board link. Disassembly: Pull PCBs apart (max. 10 mating cycles). The PCBs must be secured.

2060 Series, Board-to-Board Link						
Pin spacing	4 mm / 0.157 inch			Pole No.	Item No.	Pack. Unit
Ratings per	IEC/EN 60664-1			1	2060-951/028-000	1500
Overvoltage category	III	III	II	2	2060-952/028-000	500
Pollution degree	3	2	2	3	2060-953/028-000	375
Rated voltage	63 V	160 V	320 V			
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV	Note: Only suitable for 2060-45x, not for 2060-40x		
Rated current	9 A	9 A	9 A			



2060 Series, 8 mm Pin Spacing					
Pin spacing	8 mm / 0.314 inch			Conductor Data	
Ratings per	IEC/EN 60664-1			Connection technology	Push-in CAGE CLAMP®
Overvoltage category	III	III	II	Conductor range: solid	0.2 … 0.75 mm²
Pollution degree	3	2	2	Conductor range: fine-stranded	0.2 … 0.75 mm²
Rated voltage	400 V	630 V	1000 V	Conductor range: fine-stranded	0.25 … 0.34 mm² (with insulated ferrule)
Rated surge voltage	6 kV	6 kV	6 kV	Conductor range: fine-stranded	0.25 … 0.34 mm² (with uninsulated ferrule)
Rated current	9 A	9 A	9 A	AWG	24 … 18
Approvals per	UL 1977			Strip length	7 … 9 mm / 0.28 … 0.35 inch
Rated voltage	600 V				
Nominal current UL	9 A				
Pole No.	Item No.			Pack. Unit	
SMD terminal blocks with push-buttons in tape-and-reel packaging, white					Reel diameter: 330 mm
2	2060-852/998-404			6750 (9 x 750)	

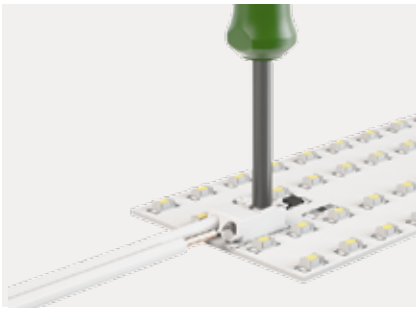


2061 SERIES

For Direct Power System Feed-In

- Low profile: 5.6 mm
- Pin spacing: 6 mm
- Conductor range:
  0.5 … 1.5 mm² (20 … 16 AWG)
- Push-in termination of solid conductors
- Push-buttons simplify insertion/removal of all conductor types
- Ideal for automated wiring systems
- Ratings: 320 V, 4 kV/2 (III), 17.5 A
- 300 V UL 1059
- Available in 1–3 pole variants
- Side-by-side assembly without pole loss
- Available in tape-and-reel packaging

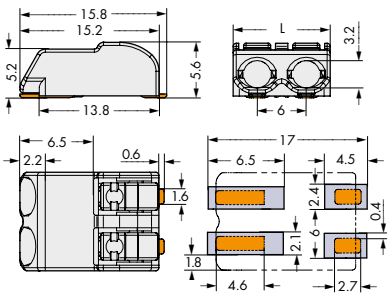
The 2061 THR Series is available in both white and black housings.



Insert/remove fine-stranded conductors by lightly pressing on a push-button, e.g., via operating tool (206-861).

2061 Series, 6 mm Pin Spacing					
Pin spacing	6 mm / 0.24 inch			Conductor Data	
Ratings per	IEC/EN 60664-1			Connection technology	Push-in CAGE CLAMP®
Overvoltage category	III	III	II	Conductor range: solid	0.5 … 1.5 mm²
Pollution degree	3	2	2	Conductor range: fine-stranded	0.5 … 1.5 mm²
Rated voltage	250 V	320 V	630 V	Conductor range: fine-stranded	0.5 … 0.75 mm² (with insulated ferrule)
Rated surge voltage	4 kV	4 kV	4 kV	Conductor range: fine-stranded	0.5 … 0.75 mm² (with uninsulated ferrule)
Rated current	17.5 A	17.5 A	17.5 A	AWG	20 … 16
Approvals per	UL 1059			Strip length	7 … 10 mm / 0.28 … 0.39 inch
Rated voltage, 1-pole	600 V				
Rated voltage, 2 or more poles	300 V				
Nominal current UL	10 A				

Pole No.	Item No.	Pack. Unit	
SMD terminal blocks with push-buttons in tape-and-reel packaging, white			Reel diameter: 330 mm
1	2061-601/998-404	8100 (9 x 900)	
2	2061-602/998-404	6300 (9 x 700)	
3	2061-603/998-404	4050 (9 x 450)	

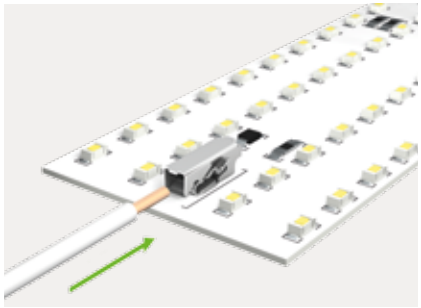


L = (pole no. x pin spacing) – 0.3 mm

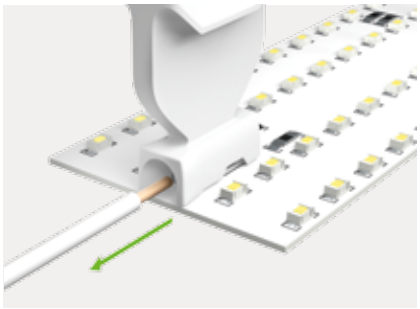
2065 SERIES

Reduced to the Essentials

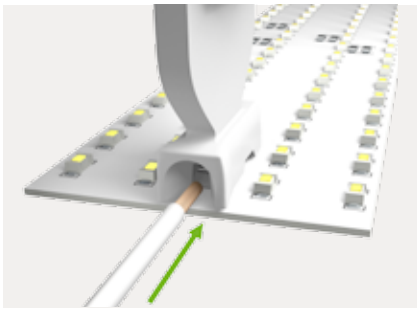
- Maximum conductor size, minimum installation space
- Compact design minimizes on-board LED shadowing
- Larger surface provides uniform light distribution
- An economic alternative to wire soldering



Insert solid conductors via push-in termination.



Insert fine-stranded conductors – as well as remove all conductors – via operating tool.

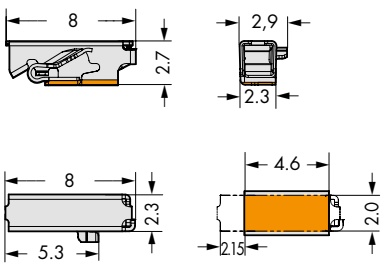


The operating tool's funneled conductor entry securely guides the conductor into the terminal block.

2065 Series					
Technical Data				**Conductor Data**	
Ratings per	**IEC/EN 60664-1**			**Connection technology**	**Push-in CAGE CLAMP®**
Overvoltage category	III	III	II	**Conductor range: solid**	0.2 … 0.75 mm²
Pollution degree	3	2	2	**Conductor range: fine-stranded**	0.2 … 0.75 mm²
Rated voltage*	250 V	320 V	630 V		
Rated surge voltage	4 kV	4 kV	4 kV		
Rated current	9 A	9 A	9 A		
				AWG	24 … 18
				Strip length	min. 7.5 mm / 0.3 inch

*Rated voltage for 6 mm pin spacing
Any layout deviation must meet the insulation coordination safety standards (EN/IEC 60664-1) or end device standard requirements.

NOTE: Terminal block without insulation housing!
Protection against accidental contact must be provided at voltages higher than low voltage (e.g., SELV/PELV) for the relevant application.

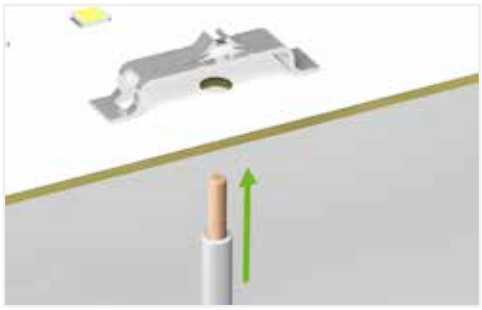


NOTE: Terminal block without insulation housing!

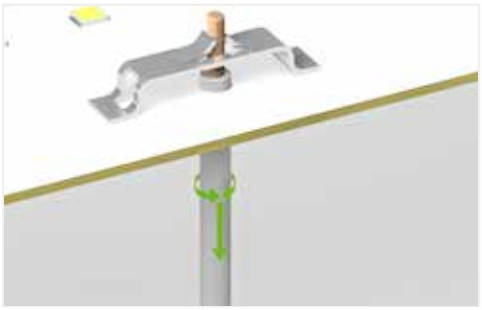
297 SERIES

For Vertical Wiring

- Wiring performed on the back of the LED board simplifies lighting manufacturing
- Low profile minimizes on-board shadowing
- Larger surface provides uniform light distribution
- Economic alternative to conductor soldering
- Supports both manual and automated wiring systems



Insert solid conductors via push-in termination.

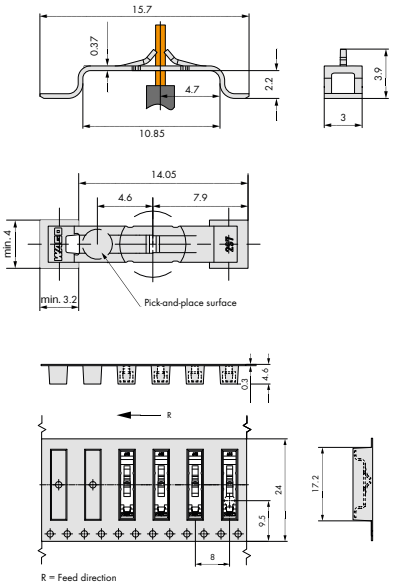


Simply twist and pull to remove conductors – no tools required.

297 Series			
Technical Data		**Conductor Data**	
Ratings per	**EN 60998-1 EN 60998-2-2**	**Connection technology**	**PUSH WIRE®**
Rated current	6A	**Conductor range: solid**	0.5 … 0.75 mm²
		AWG	20
		Strip length	min. 3.65 mm / 0.14 inch

*Layout must meet the insulation coordination safety standards (EN/IEC 60664-1) or end device standard requirements.

NOTE: Terminal block without insulation housing!
Protection against accidental contact must be provided at voltages higher than low voltage (e.g., SELV/PELV) for the relevant application.



NOTE: Terminal block without insulation housing!

WE INNOVATE!

0888-0158/0103-6901 – SMD FAMILY BROCHURE 1.3 US – 10/2016-00 – Printed in Germany – Subject to design changes

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