

## MOS 12-28VDC/5VTTL

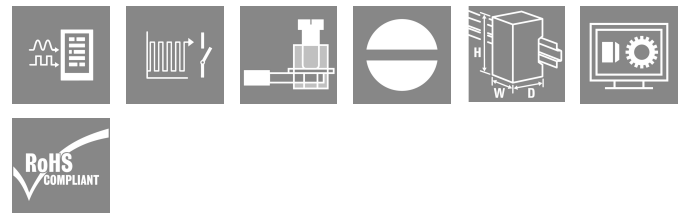
**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://www.weidmueller.com)



Compact and powerful solid-state relays in terminal block format

Saving space in the panel is becoming more and more important, and requires increasingly compact components. With the compact and powerful MICROOPTO solid-state relays, you benefit from our decades of experience in manufacturing products in terminal block format. The MICROOPTO family comprises high-quality solid-state relays for application-specific problem solving and delivers high performance in a width of just 6.1 mm. The wide range of accessories from plug-in cross-connections to end-to-end marking solutions makes it particularly versatile. Thanks to international approvals, they can be used worldwide. Reliable function is ensured by the integrated protective suppressor circuit for inputs and outputs. The wide MICROOPTO portfolio includes a range of solutions for special loads. For example, for inductive loads up to 10 A at 24 V DC or for DC loads up to 300 V. In addition, there are solutions for decoupling 5 V TTL inputs and outputs, for frequencies up to 550 kHz, as well as the single CO contact version for inverting signals.

### General ordering data

Version	MICROOPTO, Solid-state relay, Rated control voltage: 12 V DC...28 V DC, Rated switching voltage: 5 V TTL, Continuous current: 50 mA, Screw connection
Order No.	<a href="#">8937930000</a>
Type	MOS 12-28VDC/5VTTL
GTIN (EAN)	4032248716166
Qty.	1 items

## MOS 12-28VDC/5VTTL

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## Technical data

## Approvals

Approvals



ROHS Conform

UL File Number Search [UL Website](#)

Certificate no. (cULus) E141197

## Dimensions and weights

Depth	97.8 mm	Depth (inches)	3.8504 inch
Height	88.1 mm	Height (inches)	3.4685 inch
Width	6.1 mm	Width (inches)	0.2402 inch
Net weight	34 g		

## Temperatures

Storage temperature	-40 °C...60 °C	Ambient temperature	-25 °C...60 °C
Operating temperature		Humidity	5 - 93% rel. humidity, Tu = 40°C, no condensation

## Probability of failure

MTTF 2047 a

## Environmental Product Compliance

RoHS Compliance Status	Compliant with exemption
RoHS Exemption (if applicable/known)	7a, 7cl
REACH SVHC	Lead 7439-92-1
SCIP	d32f8e61-6733-45d6-9062-c95f9903aad6

## Control side

Rated control voltage	12 V DC...28 V DC	Rated control voltage (control input)	12 V DC...28 V DC
Power rating	150 mW	Status indicator	Green LED
Protective circuit	Varistor, Reverse polarity protection	Input frequency	100 kHz

## Load side

Rated switching voltage	5 V TTL	Continuous current	0.05 A
Rated switching current	50 mA	Load category	LC A
Switch-on delay	typ. <1 µs	Switch-off delay	typical. <4 µs
Voltage drop at max. load	≤ 1.1 V	Leakage current	<1 µA
Short-circuit-proof	No	Protective circuit, load side	Varistor
Contact type	1 NO contact (TTL)	max. switching frequency (DC control voltage)	100 kHz
Nominal auxiliary voltage	5 V DC ± 10 % / max. 50 mA		

## General data

Mounting rail	TS 35
Colour	black

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## Technical data

UL 94 flammability rating	V-0		
UL94 flammability rating component	Component	Housing	
	UL94 flammability rating	V-0	

## Insulation coordination

Rated voltage	300 V	Pollution severity	2
Surge voltage category	III	Clearance and creepage distances for control side - load side	> 3 mm
Dielectric strength for control side - load side	3 kVeff / 1 Min.	Dielectric strength to mounting rail	4 kVeff / 1 Min.
Impulse withstand voltage	4 kV (1.2/50 µs)	Protection degree	IP20

## Further details of approvals / standards

Certificate No. (DNV)	TAE000033E	Certificate no. (cULus)	E141197
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## Connection data

Wire connection method	Screw connection	Stripping length, rated connection	7 mm
Tightening torque, min.	0.4 Nm	Tightening torque, max.	0.6 Nm
Clamping range, rated connection	2.5 mm <sup>2</sup>	Clamping range, min.	0.5 mm <sup>2</sup>
Clamping range, max.	4 mm <sup>2</sup>	Wire cross-section, solid, min.	0.5 mm <sup>2</sup>
Wire cross-section, solid, max.	4 mm <sup>2</sup>	Wire connection cross section, finely stranded, min.	0.5 mm <sup>2</sup>
Wire connection cross section, finely stranded, max.	2.5 mm <sup>2</sup>	Wire connection cross-section, finely stranded with wire-end ferrules DIN 46228/4, min.	0.5 mm <sup>2</sup>
Wire connection cross-section, finely stranded with wire-end ferrules DIN 46228/4, max.	1.5 mm <sup>2</sup>	Conductor cross-section, flexible, AEH (DIN 46228-1), min.	0.5 mm <sup>2</sup>
Conductor cross-section, flexible, AEH (DIN 46228-1), max.	1.5 mm <sup>2</sup>	Blade size	0.6 x 3.5 mm

## Important note

Product information	The cable lengths must not exceed 30 m.
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## Classifications

ETIM 8.0	EC001504	ETIM 9.0	EC001504
ETIM 10.0	EC001504	ECLASS 14.0	27-37-16-04
ECLASS 15.0	27-37-16-04		

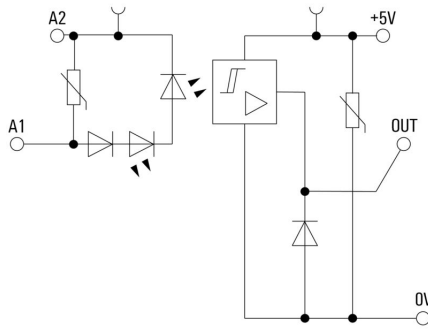
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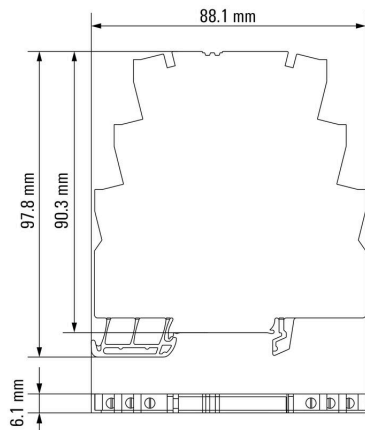
**Drawings**

[www.weidmueller.com](http://www.weidmueller.com)

**Wiring diagram**



**Dimensional drawing**



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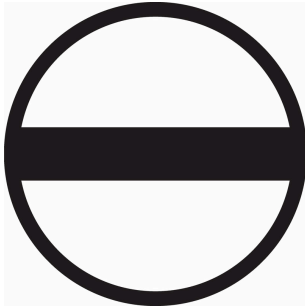
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## Accessories

## Slotted screwdriver



Slotted screwdriver with rounded blade SD DIN 5265, ISO 2380/2, output to DIN 5264, ISO 2380/1. ChromTop tip, SoftFinish grip

## General ordering data

Type	SDS 0.6X3.5X100	Version	
Order No.	<a href="#">2749340000</a>	Screwdriver, Blade width (B): 3.5 mm, Blade length: 100 mm, Blade thickness (A): 0.6 mm	
GTIN (EAN)	4050118895568		
Qty.	1 ST		
Type	SDIS 0.6X3.5X100	Version	
Order No.	<a href="#">2749810000</a>	Screwdriver, Blade width (B): 3.5 mm, Blade length: 100 mm, Blade thickness (A): 0.6 mm	
GTIN (EAN)	4050118897012		
Qty.	1 ST		

## MICROOPTO



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## General ordering data

Type	MOS FEED THROUGH	Version	
Order No.	<a href="#">8973450000</a>	MICROOPTO, Feed-through terminal, Screw connection	
GTIN (EAN)	4032248799534		
Qty.	1 ST		

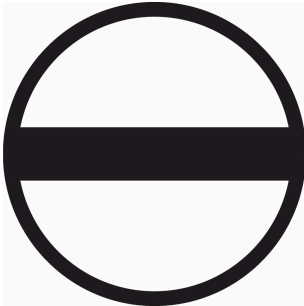
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## Accessories

## Slotted screwdriver



VDE insulated screwdriver sets, for working on live parts up to 1000 V AC and 1500 V DC, DIN EN 60900, IEC 900. Each piece is "GS" safety tested. Blade made from fully hardened, high-alloy chromium-vanadium-molybdenum steel, gun-metal finish.

## General ordering data

Type	SDIS SLIM 0.6X3.5X100	Version	
Order No.	<a href="#">2749610000</a>	Mounting tool, Blade width (B): 3.5 mm, Blade length: 100 mm, Blade thickness (A): 0.6 mm	
GTIN (EAN)	4050118896350		
Qty.	1 ST		

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## General ordering data

Type	MOS SUPPLY	Version	
Order No.	<a href="#">8973460000</a>	MICROOPTO, Supply module, Screw connection	
GTIN (EAN)	4032248799541		
Qty.	1 ST		

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## Accessories

### Cross-connections



The distribution or multiplication of a potential to adjoining terminal blocks is realized via a cross-connection. Additional wiring effort can be easily avoided. Even if the poles are broken out, contact reliability in the terminal blocks is still ensured. Our portfolio offers pluggable and screwable cross-connection systems for modular terminal blocks.

### General ordering data

Type	ZQV 4N/2	Version
Order No.	<a href="#">1527930000</a>	Cross-connector (terminal), Plugged, orange, 32 A, Number of poles: 2, Pitch in mm (P): 6.10, Insulated: Yes, Width: 9.9 mm
GTIN (EAN)	4050118332766	
Qty.	60 ST	
Type	ZQV 4N/2 RD	Version
Order No.	<a href="#">2460450000</a>	Cross-connector (terminal), Plugged, red, 32 A, Number of poles: 2, Pitch in mm (P): 6.10, Insulated: Yes, Width: 9.9 mm
GTIN (EAN)	4050118476149	
Qty.	60 ST	
Type	ZQV 4N/2 BL	Version
Order No.	<a href="#">1528040000</a>	Cross-connector (terminal), Plugged, blue, 32 A, Number of poles: 2, Pitch in mm (P): 6.10, Insulated: Yes, Width: 9.9 mm
GTIN (EAN)	4050118332773	
Qty.	60 ST	
Type	ZQV 4N/2 SW	Version
Order No.	<a href="#">1793970000</a>	W-Series, Cross-connector, 32 A
GTIN (EAN)	4032248233762	
Qty.	60 ST	
Type	ZQV 4N/3	Version
Order No.	<a href="#">1527940000</a>	Cross-connector (terminal), Plugged, orange, 32 A, Number of poles: 3, Pitch in mm (P): 6.10, Insulated: Yes, Width: 16 mm
GTIN (EAN)	4050118332865	
Qty.	60 ST	
Type	ZQV 4N/3 RD	Version
Order No.	<a href="#">2460810000</a>	Cross-connector (terminal), Plugged, red, 32 A, Number of poles: 3, Pitch in mm (P): 6.10, Insulated: Yes, Width: 16 mm
GTIN (EAN)	4050118476231	
Qty.	60 ST	
Type	ZQV 4N/3 BL	Version
Order No.	<a href="#">1528080000</a>	Cross-connector (terminal), Plugged, blue, 32 A, Number of poles: 3, Pitch in mm (P): 6.10, Insulated: Yes, Width: 16 mm
GTIN (EAN)	4050118333008	
Qty.	60 ST	
Type	ZQV 4N/3 SW	Version
Order No.	<a href="#">1794000000</a>	W-Series, Cross-connector, 32 A
GTIN (EAN)	4032248233793	
Qty.	60 ST	
Type	ZQV 4N/4	Version
Order No.	<a href="#">1527970000</a>	Cross-connector (terminal), Plugged, orange, 32 A, Number of poles: 4, Pitch in mm (P): 6.10, Insulated: Yes, Width: 22.1 mm
GTIN (EAN)	4050118332889	
Qty.	60 ST	
Type	ZQV 4N/4 RD	Version
Order No.	<a href="#">2460800000</a>	Cross-connector (terminal), Plugged, red, 32 A, Number of poles: 4, Pitch in mm (P): 6.10, Insulated: Yes, Width: 22.1 mm
GTIN (EAN)	4050118476224	
Qty.	60 ST	

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### Accessories

Type	ZQV 4N/4 BL	Version
Order No.	<a href="#">1528120000</a>	Cross-connector (terminal), Plugged, blue, 32 A, Number of poles: 4,
GTIN (EAN)	4050118332872	Pitch in mm (P): 6.10, Insulated: Yes, Width: 22.1 mm
Qty.	60 ST	
Type	ZQV 4N/4 SW	Version
Order No.	<a href="#">1794030000</a>	W-Series, Cross-connector, 32 A
GTIN (EAN)	4032248233915	
Qty.	60 ST	
Type	ZQV 4N/10	Version
Order No.	<a href="#">1528090000</a>	Cross-connector (terminal), Plugged, orange, 32 A, Number of poles:
GTIN (EAN)	4050118332896	10, Pitch in mm (P): 6.10, Insulated: Yes, Width: 58.7 mm
Qty.	20 ST	
Type	ZQV 4N/10 RD	Version
Order No.	<a href="#">2460740000</a>	Cross-connector (terminal), Plugged, red, 32 A, Number of poles: 10,
GTIN (EAN)	4050118476163	Pitch in mm (P): 6.10, Insulated: Yes, Width: 58.7 mm
Qty.	20 ST	
Type	ZQV 4N/10 BL	Version
Order No.	<a href="#">1528230000</a>	Cross-connector (terminal), Plugged, blue, 32 A, Number of poles: 10,
GTIN (EAN)	4050118333138	Pitch in mm (P): 6.10, Insulated: Yes, Width: 58.7 mm
Qty.	20 ST	
Type	ZQV 4N/10 SW	Version
Order No.	<a href="#">1794060000</a>	W-Series, Cross-connector, 32 A
GTIN (EAN)	4032248234059	
Qty.	20 ST	
Type	ZQV 4N/20 GE	Version
Order No.	<a href="#">1909020000</a>	W-Series, Cross-connector, 32 A
GTIN (EAN)	4032248535644	
Qty.	20 ST	
Type	ZQV 4N/20 RT	Version
Order No.	<a href="#">1909150000</a>	W-Series, Cross-connector, 32 A
GTIN (EAN)	4032248535934	
Qty.	20 ST	
Type	ZQV 4N/20 BL	Version
Order No.	<a href="#">1909100000</a>	W-Series, Cross-connector, 32 A
GTIN (EAN)	4032248535774	
Qty.	20 ST	
Type	ZQV 4N/20 SW	Version
Order No.	<a href="#">1909120000</a>	W-Series, Cross-connector, 32 A
GTIN (EAN)	4032248535804	
Qty.	20 ST	



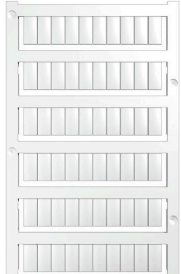
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## Accessories

### Blank



WS markers are the perfect match for the W-series connectors. Thanks to their system compatibility, the WS tags can also be used with the I-series and the Z-series. The large marking surfaces do not only permit long character strings but also multi-line text. WS markers are ideal for labels with long, customised character strings. Thanks to the proven MultiCard format, printing with PrintJet CONNECT oder/or Plotter is possible.

- Can be fitted in strips or individually
- Markers in proven MultiCard format

For custom printing: Please send us a file of our labeling software M-Print PRO or M-Print PRO Online (without installation) for your labeling specifications.

### General ordering data

Type	WS 12/6 MC NE WS	Version
Order No.	<a href="#">1609900000</a>	WS, Terminal marker, 12 x 6 mm, Pitch in mm (P): 6.00 Weidmueller,
GTIN (EAN)	4008190203467	Allen-Bradley, white
Qty.	600 ST	