

## MICROOPTO OPTO Modules

# NEW



The MICROOPTO line of solid-state relays provides several options for switching and protecting signals. The line features pluggable cross connections and industrial standard marking options, all in a standard terminal block footprint of 6.1mm.

By using opto-coupler technology, this line of devices will have a very long service life without failure or issues such as switching noise and contact bounce. These units are resistant to shock and vibration and, during operation, do not emit electromagnetic noise or switching related sparks.

The MICROOPTO solid-state relays are CE and cULus approved.

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### United States

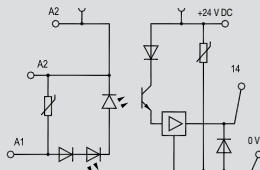
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**Weidmüller** 

**For high switching frequency up to 100kHz**

- Proper load signal up to 100kHz
- Switching delay time < 3µs
- Extensive protection circuitry

**MOS 12...28VDC 100 kHz**



A special integrated circuit in the opto module **MICROOPTO 100 kHz** ensures that rapidly transmitted signals are isolated from one another and that they can be transferred practically without delay. This allows switching frequencies up to 100 kHz to be achieved.

Comprehensive suppressor circuits safeguard the module against line-borne transients and voltage spikes.

**Technical data**

| Control side  |   |
|---|---|
| Rated voltage   | 12VDC...28VDC                             |
| Power rating  | 0.08...0.3 W                              |
| Making voltage  | > 5.6V                                    |
| Dropout voltage   | < 5.1V                                    |
| Max. input frequency  | 100 kHz                                   |
| Status indicator  | LED green                                 |
| Protective circuit  | Varistor, reverse polarity protection     |
| Load side   |   |
| Solid-state type  | Bipolar transistor                        |
| Nominal switching voltage                                     | 24VDC ±20%                                |
| Nominal switching current                                     | 50 mA                                     |
| Voltage drop at max. load                                     | ≤ 2V                                      |
| Leakage current   | < 20 µA                                   |
| Short-circuit-proof/Protective circuit                        | no /varistor, reverse polarity protection |
| Switch-on delay/Switch-off delay                              | < 200ns/<400ns                            |
| Continuous current  | Max. 50 mA                                |
| Pulse loading, max. current                                   | 0.6A (20 ms)                              |
| Load category   | LC A                                      |
| General data  |   |
| Ambient temperature (operational)                             | -20 °C...+60 °C                           |
| Storage temperature   | -40 °C...+80 °C                           |
| UL 94 flammability class                                      | V-0                                       |
| Humidity  | 5...95 % RH                               |
| $T_u = 55 °C$ , no condensation                               |   |
| CE; cULus   |   |
|   | EN 50178, IEC 62314, UL508                |
| Insulation coordination (EN 50 178)                           |   |
| Rated voltage   | 300V                                      |
| Rated impulse withstand voltage                               | 4kV (1.2 / 50 µs)                         |
| Clearance and creepage distances for control side - load side | > 3mm                                     |
| Surge category  | III                                       |
| Pollution severity  | 2   |
| Dimensions  |   |
| Clamping range (rating- / min. / max.)                        | mm <sup>2</sup>                           |
| Length x width x height                                       | mm  |
| <b>Note</b>   |   |
| Screw connection  |   |
|   | 2.5 / 0.5 / 4                             |
|   | 90 x 6.1 x 98                             |

**Ordering data**

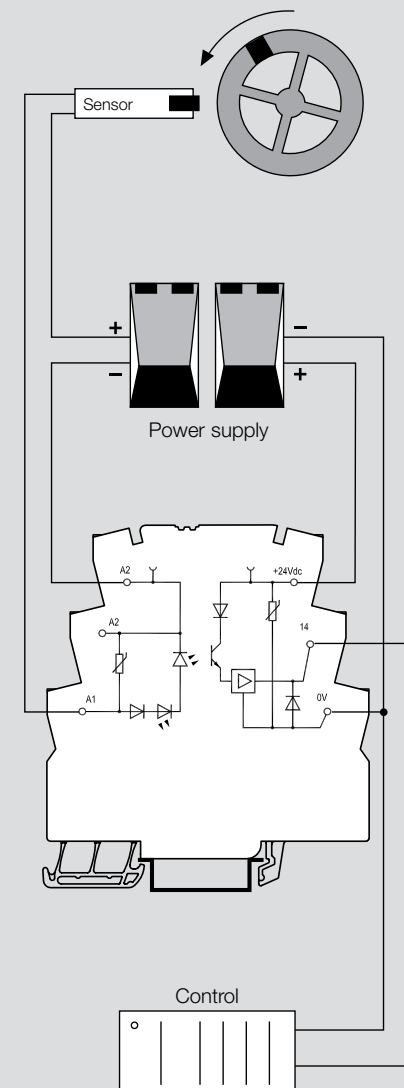
| Connection system | Type                | Qty. | Part No.   |
|-------------------|---------------------|------|------------|
| Screw connection  | MOS 12-28VDC 100kHz | 1    | 8937990000 |

**Note**

**Accessories**

**Note**

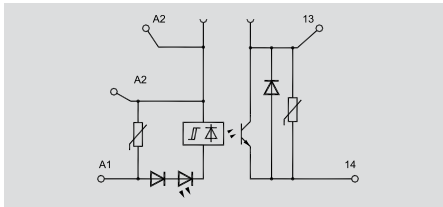
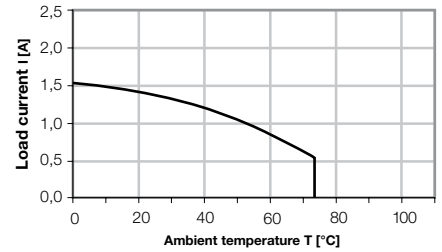
For example rotational speed measurement



**For DC loads up to 300VDC and 1A**

- Load circuit: 12-300VDC 1A
- Power Boost: 20A / 20 ms, 5A / 1 sec
- Extensive protection circuitry

**MOS 12...300VDC 1A**



The solid-state relay **MICROOPTO 300VDC** has been developed as a switching amplifier for high inductive loads up to 300VDC and 1A in motor brakes and contactors.

A power boost in the load circuit compensates transient overloads (20A for 20 ms / 5A for 1 s) such as making or breaking spikes. Additional protective circuits protect from higher overloads.

**Technical data**

**Control side**

|                      |                                       |
|----------------------|---------------------------------------|
| Rated voltage        | 24VDC ±20 %                           |
| Power rating         | 0.36 W                                |
| Making voltage       | >18.8V                                |
| Dropout voltage      | < 14.7V                               |
| Max. input frequency | 50 Hz                                 |
| Status indicator     | LED green                             |
| Protective circuit   | Varistor, reverse polarity protection |

|                      |                                       |
|----------------------|---------------------------------------|
| Rated voltage        | 24VDC ±20 %                           |
| Power rating         | 0.36 W                                |
| Making voltage       | >18.8V                                |
| Dropout voltage      | < 14.7V                               |
| Max. input frequency | 50 Hz                                 |
| Status indicator     | LED green                             |
| Protective circuit   | Varistor, reverse polarity protection |

**Load side**

|  |   |
|--|---|
| Solid-state type                       | MOS-FET                                       |
| Nominal switching voltage              | 12...300VDC                                   |
| Nominal switching current              | 1A @ 55°C                                     |
| Voltage drop at max. load              | ≤ 0.5V  |
| Leakage current                        | < 1µA   |
| Short-circuit-proof/Protective circuit | Powerboost, 10A / 20 ms, 5A / 1 sec, varistor |
| Switch-on delay/Switch-off delay       | < 0.1 ms / < 0.1 ms                           |
| Continuous current                     | 1A  |
| Pulse loading, max. current            | 27A (10 ms)                                   |
| Load category                          | LC A  |

|  |   |
|--|---|
| Solid-state type                       | MOS-FET                                       |
| Nominal switching voltage              | 12...300VDC                                   |
| Nominal switching current              | 1A @ 55°C                                     |
| Voltage drop at max. load              | ≤ 0.5V  |
| Leakage current                        | < 1µA   |
| Short-circuit-proof/Protective circuit | Powerboost, 10A / 20 ms, 5A / 1 sec, varistor |
| Switch-on delay/Switch-off delay       | < 0.1 ms / < 0.1 ms                           |
| Continuous current                     | 1A  |
| Pulse loading, max. current            | 27A (10 ms)                                   |
| Load category                          | LC A  |

**General data**

|                                   |  |
|-----------------------------------|--|
| Ambient temperature (operational) | -20 °C... See Derating Curve           |
| Storage temperature               | -40 °C...+80 °C                        |
| UL 94 flammability class          | V-0                                    |
| Humidity                          | 5...95 % RH                            |
|                                   | T <sub>v</sub> = 55°C, no condensation |
| Approvals                         | CE; cULus                              |
| Standards                         | EN 50178, IEC 62314, UL508             |

|                                   |  |
|-----------------------------------|--|
| Ambient temperature (operational) | -20 °C... See Derating Curve           |
| Storage temperature               | -40 °C...+80 °C                        |
| UL 94 flammability class          | V-0                                    |
| Humidity                          | 5...95 % RH                            |
|                                   | T <sub>v</sub> = 55°C, no condensation |
| Approvals                         | CE; cULus                              |
| Standards                         | EN 50178, IEC 62314, UL508             |

**Insulation coordination (EN 50 178)**

|   |                    |
|---|--------------------|
| Rated voltage   | 300V               |
| Rated impulse withstand voltage                               | 4 kV (1.2 / 50 µs) |
| Clearance and creepage distances for control side - load side | > 3mm              |
| Surge category  | III                |
| Pollution severity  | 2                  |

|   |                    |
|---|--------------------|
| Rated voltage   | 300V               |
| Rated impulse withstand voltage                               | 4 kV (1.2 / 50 µs) |
| Clearance and creepage distances for control side - load side | > 3mm              |
| Surge category  | III                |
| Pollution severity  | 2                  |

**Dimensions**

|  |                 |
|--|-----------------|
| Clamping range (rating- / min. / max.) | mm <sup>2</sup> |
| Length x width x height                | mm              |

**Screw connection**

|  |               |
|--|---------------|
| Clamping range (rating- / min. / max.) | 2.5 / 0.5 / 4 |
| Length x width x height                | 90 x 6.1 x 98 |

**Note**

**Note**

**Ordering data**

**Connection system**

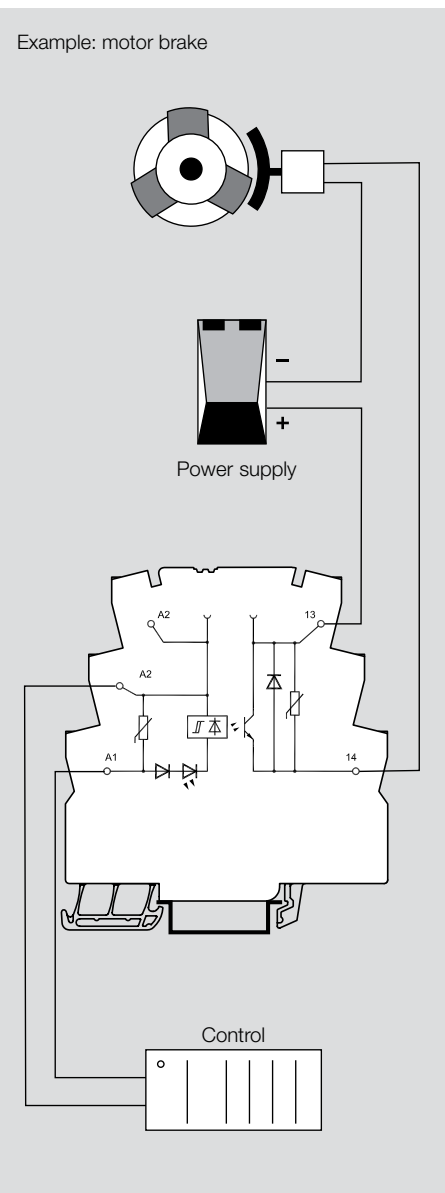
|                   |                  |
|-------------------|------------------|
| Connection system | Screw connection |
|-------------------|------------------|

| Type                   | Qty. | Part No.   |
|------------------------|------|------------|
| MOS 24VDC/12-300VDC 1A | 1    | 8937830000 |

**Note**

**Accessories**

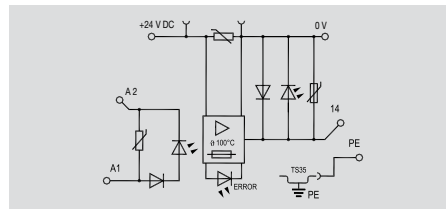
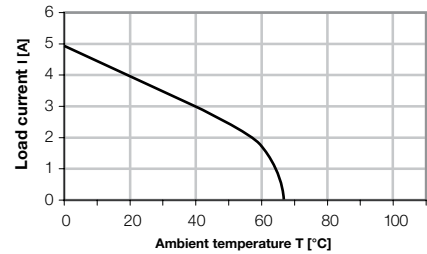
**Note**



## For direct connection of actuators up to 24VDC, 2A

- Load circuit: 24VDC / 2A, short circuit protected
- Direct connection of 3-wire actuators
- Integrated Protective ground connection for easy DIN-rail snap on
- Fault indication via LED

## MOS 8...30VDC 2A



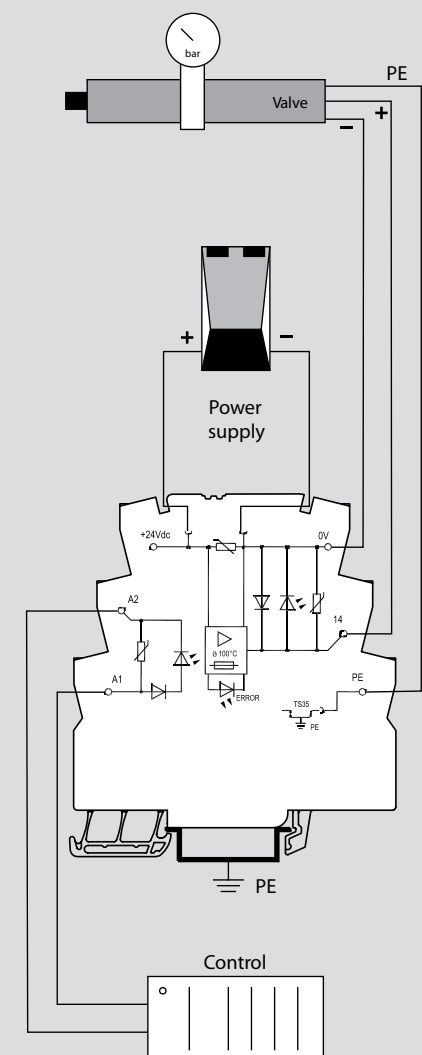
The solid-state relay **MICROOPTO ACTOR** has been especially designed as a switching amplifier for actuators up to 24VDC and 2A with inductive loads such as solenoid valves and contactors. 3-wire actuators can be connected directly to the module.

This is short-circuit proof and protected against application-related transients and spikes by extensive protective circuitry.

### Technical data

| Control side  |  |      |            |
|---|--|------|------------|
| Rated voltage   | 24VDC ±20 %                                |      |            |
| Power rating  | 0.1...2 W                                  |      |            |
| Making voltage  | > 13.8 V                                   |      |            |
| Dropout voltage   | < 13.6 V                                   |      |            |
| Max. input frequency  | 100 Hz                                     |      |            |
| Status indicator  | Fault indication LED red, status LED green |      |            |
| Protective circuit  | Varistor, reverse polarity protection      |      |            |
| Load side   |  |      |            |
| Solid-state type  | Intelligent POWER MOS-FET                  |      |            |
| Nominal switching voltage                                     | 8...30VDC                                  |      |            |
| Nominal switching current                                     | 2A @ 55°C                                  |      |            |
| Voltage drop at max. load                                     | ≤ 50 mV                                    |      |            |
| Leakage current   | < 50 µA                                    |      |            |
| Short-circuit-proof/Protective circuit                        | yes (12 h) /varistor                       |      |            |
| Switch-on delay/Switch-off delay                              | < 0.1 ms / < 0.5 ms                        |      |            |
| Continuous current  | 2A   |      |            |
| Load category   | LC A                                       |      |            |
| General data  |  |      |            |
| Ambient temperature (operational)                             | -20 °C... See Derating Curve               |      |            |
| Storage temperature   | -40 °C...+80 °C                            |      |            |
| UL 94 flammability class                                      | V-0  |      |            |
| Humidity  | 5...95 % RH                                |      |            |
| T <sub>v</sub>  | 55°C, no condensation                      |      |            |
| Approvals   | CE; cULus                                  |      |            |
| Standards   | EN 50178, IEC 62314, UL508                 |      |            |
| Insulation coordination (EN 50 178)                           |  |      |            |
| Rated voltage   | 300V                                       |      |            |
| Rated impulse withstand voltage                               | 4 kV (1.2 / 50 µs)                         |      |            |
| Clearance and creepage distances for control side - load side | > 3mm                                      |      |            |
| Surge category  | III  |      |            |
| Pollution severity  | 2  |      |            |
| Dimensions  |  |      |            |
| Clamping range (rating- / min. / max.)                        | mm <sup>2</sup> 2.5 / 0.5 / 4              |      |            |
| Length x width x height                                       | mm 90 x 6.1 x 98                           |      |            |
| Note  |  |      |            |
| Ordering data   |  |      |            |
| Connection system   | Type                                       | Qty. | Part No.   |
| Screw connection  | MOS 24VDC/8-30VDC 2A                       | 1    | 8937970000 |
| Note  |  |      |            |
| Accessories   |  |      |            |
| Note  |  |      |            |

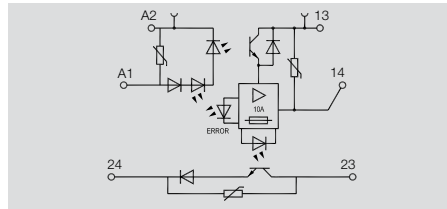
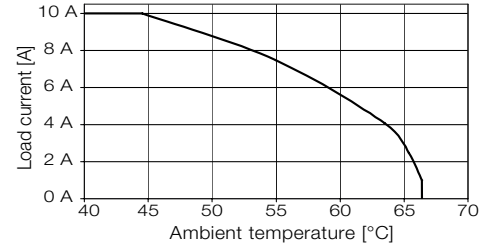
Example: pneumatic valve



**For switching valves up to 24VDC, 10A**

- Load circuit 24VDC/10A, short circuit protected
- Status indicator and error message contact in case of failures on the output

**MOS 24VDC / 5-33 VDC 10A**



The **MICROOPTO SOLENOID** solid-state relay is used especially as switching amplifier for actuators up to 24VDC and 10A with inductive loads such as solenoid valves and contactors. A potential-free signalling contact transmits errors, such as short circuit, to the controller.

The **MICROOPTO SOLENOID** solid-state relay is short-circuit-proof and protected against power-related transients and voltage peaks by extensive protective circuits. The closed housing also offers a high level of protection against contact.

**Technical data**

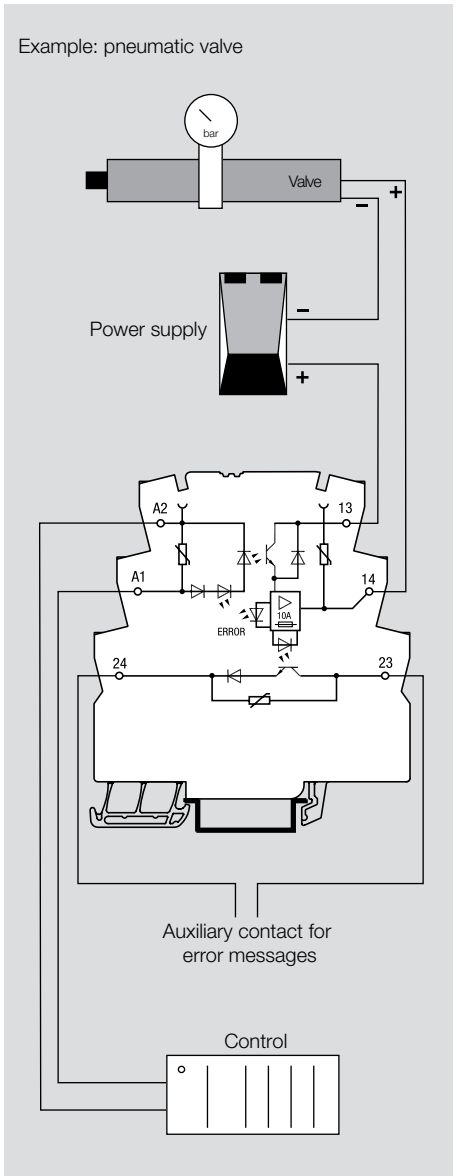
| Control side  |  |
|---|--|
| Rated voltage   | 24VDC ±20 %  |
| Power rating  | 400 mW   |
| Making voltage  | > 18V  |
| Dropout voltage   | < 13V  |
| Max. input frequency  | 50 Hz  |
| Status indicator  | Error LED red; Status LED green  |
| Protective circuit  | Varistor, reverse polarity protection                                      |
| Load side   |  |
| Solid-state type  | POWER-MOS-FET transistor   |
| Nominal switching voltage   | 5...33VDC  |
| Nominal switching current   | 10A  |
| Voltage drop at max. load   | approx. 100 mV   |
| Leakage current   | < 1 mA   |
| Short-circuit-proof/Protective circuit  | Yes (conditional 4h / current limiting < 200 A) / Varistor, Current sensor |
| Switch-on delay/Switch-off delay  | typical. 250 µs / typical. 700 µs  |
| Continuous current  | 10A  |
| Load category   | LC A   |
| General data  |  |
| Alarm contact   | 5...48VDC / 0.1A   |
| Ambient temperature (operational)   | -25 °C...+60 °C  |
| Storage temperature   | -40 °C...+80 °C  |
| UL 94 flammability class  | V-0  |
| Humidity  | 40°C / 93% rel. humidity, no condensation                                  |
| Approvals   | GL; GOSTME25; CE; cULus  |
| Standards   | EN 50178, GL 2003-VI-Abs. 9, IEC 62314, UL508                              |
| Insulation coordination (EN 50 178)   |  |
| Rated voltage   | 300V   |
| Rated impulse withstand voltage   | 4 kV (1.2 / 50 µs)   |
| Clearance and creepage distances for control side - load side   | > 3 mm   |
| Surge category  | III  |
| Pollution severity  | 2  |
| Dimensions  |  |
| Clamping range (rating- / min. / max.)  | mm <sup>2</sup> 2.5 / 0.5 / 4  |
| Length x width x height   | mm 90 x 6.1 x 98   |
| Screw connection  |  |
| Suppressor circuitry for inductive loads, 10 cm installation clearance to inductive switching devices |  |

**Ordering data**

| Connection system | Type                  | Qty. | Part No.   |
|-------------------|-----------------------|------|------------|
| Screw connection  | MOS 24VDC/5-33VDC 10A | 1    | 8937940000 |

**Accessories**

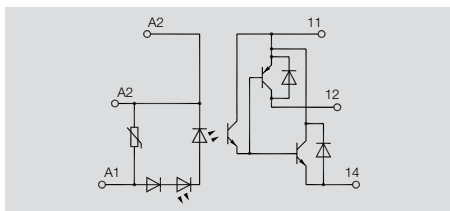
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**For electronically switching or inverting signals**

- High switching frequency up to 1kHz
- Integrated inverter
- Extensive protection circuits

**MOS 24VDC/5-48VDC 0.5A**



Electronic CO contacts are used anywhere output signals need to be changed over.

For this purpose, the input signal is directly switched through to the output side and inverted; as a result, the opto module can also be used as a pure inverter.

The advantage over electromechanical relays lies in the wear-free switching and the possibility of realizing high switching frequencies.

**Technical data**

|   |   |            |
|---|---|------------|
| <b>Control side</b>   |   |            |
| Rated voltage   | 24VDC ±20 %                                   |            |
| Power rating  | 160 mW  |            |
| Making voltage  | > 80 % U <sub>Nom</sub>                       |            |
| Dropout voltage   | < 50 % U <sub>Nom</sub>                       |            |
| Max. input frequency  | 1 kHz   |            |
| Status indicator  | Green status LED                              |            |
| Protective circuit  | Varistor, reverse polarity protection         |            |
| <b>Load side</b>  |   |            |
| Solid-state type  | Bipolar transistor                            |            |
| Nominal switching voltage                                     | 5...48VDC                                     |            |
| Nominal switching current                                     | 500 mA  |            |
| Voltage drop at max. load                                     | Max. 1V                                       |            |
| Leakage current   | < 2 µA  |            |
| Short-circuit-proof/Protective circuit                        | No / Integrated free-wheel diode              |            |
| Switch-on delay/Switch-off delay                              | < 40 µs / < 50 µs                             |            |
| Continuous current  | 500 mA  |            |
| Pulse loading, max. current                                   |   |            |
| Load category   | LC A  |            |
| <b>General data</b>   |   |            |
| Ambient temperature (operational)                             | -25 °C...+60 °C                               |            |
| Storage temperature   | -40 °C...+80 °C                               |            |
| UL 94 flammability class                                      | V-0   |            |
| Humidity  | 40°C / 93% rel. humidity, no condensation     |            |
| Approvals   | GL: GOSTME25; CE: cULus                       |            |
| Standards   | EN 50178, GL 2003-VI-Abs. 9, IEC 62314, UL508 |            |
| <b>Insulation coordination (EN 50 178)</b>                    |   |            |
| Rated voltage   | 300V  |            |
| Rated impulse withstand voltage                               | 4 kV (1.2 / 50 µs)                            |            |
| Clearance and creepage distances for control side - load side | > 3 mm  |            |
| Surge category  | III   |            |
| Pollution severity  | 2   |            |
| <b>Dimensions</b>   |   |            |
| Clamping range (rating- / min. / max.)                        | mm <sup>2</sup> 2.5 / 0.5 / 4                 |            |
| Length x width x height                                       | mm 90 x 6.1 x 98                              |            |
| <b>Note</b>   |   |            |
| <b>Screw connection</b>                                       |   |            |
| Type  | Qty.  | Part No.   |
| MOS 24VDC/5-48VDC 0.5A  | 1   | 8937980000 |

**Ordering data**

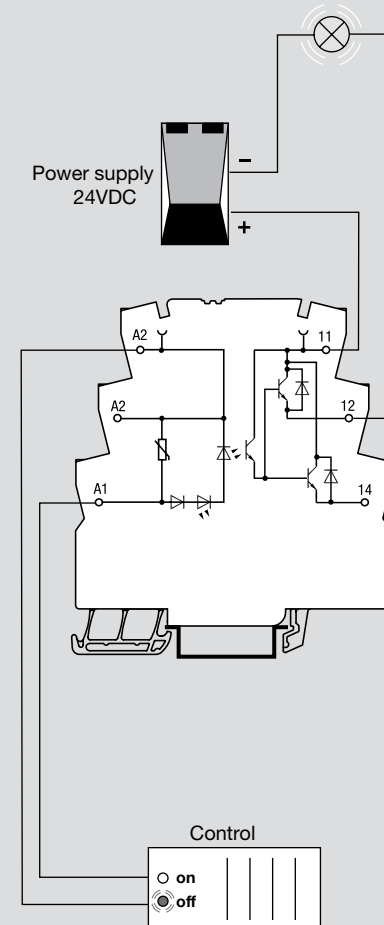
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| <b>Connection system</b> | Screw connection |
|--------------------------|------------------|

**Note**

**Accessories**

**Note**

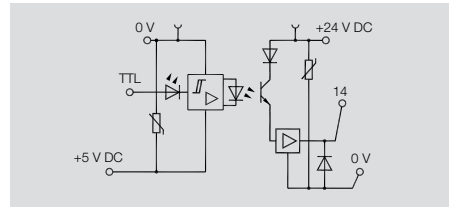
Example: inverter



**For adjusting TTL signals**

- High switching frequency up to 100kHz
- TTL signal conversion from 5V TTL to 24VDC
- Extensive protection circuits

**MOS 5V TTL/24VDC 0.1A**



The **MICROOPTO TTL** modules are used in industrial automation applications to adjust sensitive TTL signals to the typical voltage level of 24VDC.

For the protection of the electronics, the sensitive TTL signals require electrical isolation from the 24V environment.

Separate auxiliary power is required to control the optical coupler circuit via the 5V TTL signal.

**Technical data**

|   |   |
|---|---|
| <b>Control side</b>   |   |
| Rated voltage   | 5V TTL  |
| Power rating  | < 0.5 mW                                      |
| Making voltage  | approx. 2V                                    |
| Dropout voltage   | ca. 1V  |
| Max. input frequency  | 100 kHz                                       |
| Status indicator  | Green status LED                              |
| Protective circuit  | Varistor, reverse polarity protection         |
| Rated auxiliary voltage                                       | 5VDC ±5 %                                     |
| <b>Load side</b>  |   |
| Solid-state type  | Bipolar transistor                            |
| Nominal switching voltage                                     | 19.6...28.8 V                                 |
| Nominal switching current                                     | 100 mA  |
| Voltage drop at max. load                                     | < 1V  |
| Leakage current   | < 20 µA                                       |
| Short-circuit-proof/Protective circuit                        | No / Integrated free-wheel diode              |
| Switch-on delay/Switch-off delay                              | < 300 µs / < 2 µs                             |
| Continuous current  | 100 mA  |
| Pulse loading, max. current                                   |   |
| Load category   | LC A  |
| <b>General data</b>   |   |
| Ambient temperature (operational)                             | -25 °C...+60 °C                               |
| Storage temperature   | -40 °C...+80 °C                               |
| UL 94 flammability class                                      | V-0   |
| Humidity  | 40°C / 93% rel. humidity, no condensation     |
| Approvals   | GL; GOSTME25; CE; cULus                       |
| Standards   | EN 50178, GL 2003-VI-Abs. 9, IEC 62314, UL508 |
| <b>Insulation coordination (EN 50 178)</b>                    |   |
| Rated voltage   | 300V  |
| Rated impulse withstand voltage                               | 4 kV (1.2 / 50 µs)                            |
| Clearance and creepage distances for control side - load side | > 3 mm  |
| Surge category  | III   |
| Pollution severity  | 2   |
| <b>Dimensions</b>   |   |
| Clamping range (rating- / min. / max.)                        | mm <sup>2</sup>                               |
| Length x width x height                                       | mm  |
| <b>Note</b>   |   |

|   |   |  |
|---|---|--|
| <b>Control side</b>   |   |  |
| Rated voltage   | 5V TTL  |  |
| Power rating  | < 0.5 mW                                      |  |
| Making voltage  | approx. 2V                                    |  |
| Dropout voltage   | ca. 1V  |  |
| Max. input frequency  | 100 kHz                                       |  |
| Status indicator  | Green status LED                              |  |
| Protective circuit  | Varistor, reverse polarity protection         |  |
| Rated auxiliary voltage                                       | 5VDC ±5 %                                     |  |
| <b>Load side</b>  |   |  |
| Solid-state type  | Bipolar transistor                            |  |
| Nominal switching voltage                                     | 19.6...28.8 V                                 |  |
| Nominal switching current                                     | 100 mA  |  |
| Voltage drop at max. load                                     | < 1V  |  |
| Leakage current   | < 20 µA                                       |  |
| Short-circuit-proof/Protective circuit                        | No / Integrated free-wheel diode              |  |
| Switch-on delay/Switch-off delay                              | < 300 µs / < 2 µs                             |  |
| Continuous current  | 100 mA  |  |
| Pulse loading, max. current                                   |   |  |
| Load category   | LC A  |  |
| <b>General data</b>   |   |  |
| Ambient temperature (operational)                             | -25 °C...+60 °C                               |  |
| Storage temperature   | -40 °C...+80 °C                               |  |
| UL 94 flammability class                                      | V-0   |  |
| Humidity  | 40°C / 93% rel. humidity, no condensation     |  |
| Approvals   | GL; GOSTME25; CE; cULus                       |  |
| Standards   | EN 50178, GL 2003-VI-Abs. 9, IEC 62314, UL508 |  |
| <b>Insulation coordination (EN 50 178)</b>                    |   |  |
| Rated voltage   | 300V  |  |
| Rated impulse withstand voltage                               | 4 kV (1.2 / 50 µs)                            |  |
| Clearance and creepage distances for control side - load side | > 3 mm  |  |
| Surge category  | III   |  |
| Pollution severity  | 2   |  |
| <b>Dimensions</b>   |   |  |
| Clamping range (rating- / min. / max.)                        | mm <sup>2</sup>                               |  |
| Length x width x height                                       | mm  |  |
| <b>Note</b>   |   |  |

**Ordering data**

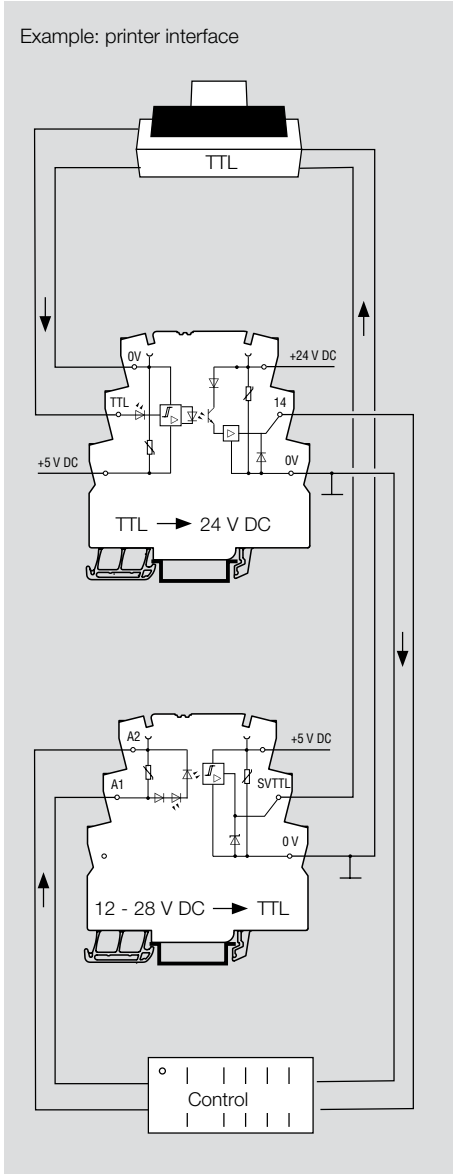
|                          |                  |
|--------------------------|------------------|
| <b>Connection system</b> | Screw connection |
|--------------------------|------------------|

| Type                 | Qty. | Part No.   |
|----------------------|------|------------|
| MOS 5VTTL/24VDC 0.1A | 1    | 8937920000 |

**Note**

**Accessories**

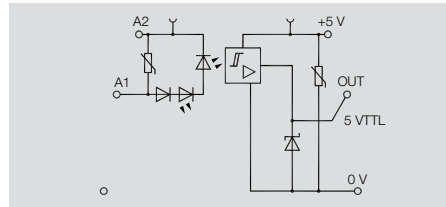
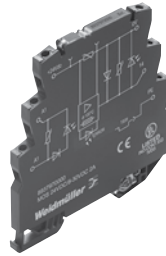
**Note**



**For adjusting TTL signals**

- High switching frequency up to 100kHz
- TTL signal conversion from 12-28VDC to 5V TTL
- Extensive protection circuits

**MOS 12-28 VDC/5V TTL**



The **MICROOPTO TTL** modules are used in industrial automation applications to adjust sensitive TTL signals to the typical voltage level of 24VDC.

For the protection of the electronics, the sensitive TTL signals require electrical isolation from the 24V environment.

Separate auxiliary power is required to control the optical coupler circuit via the 5V TTL signal.

**Technical data**

| Control side  |   |
|---|---|
| Rated voltage   | 12VDC...28VDC                                 |
| Power rating  | 150 mW  |
| Making voltage  | > 10.7V                                       |
| Dropout voltage   | < 10.6V                                       |
| Max. input frequency  | 100 kHz                                       |
| Status indicator  | Green status LED                              |
| Protective circuit  | Varistor, reverse polarity protection         |
| Load side   |   |
| Solid-state type  | TTL gate                                      |
| Rated switching voltage                                       | TTL level                                     |
| Rated switching current                                       | 50 mA   |
| Voltage drop at max. load                                     | 50 mV   |
| Leakage current   |   |
| Short-circuit-proof/Protective circuit                        | No / Varistor                                 |
| Switch-on delay/Switch-off delay                              | typical. < 1 µs / typical. < 4 µs             |
| Continuous current  | max. 50 mA                                    |
| Pulse loading, max. current                                   |   |
| Load category   | LC A  |
| Rated auxiliary voltage                                       | 5VDC ±5 %                                     |
| General data  |   |
| Ambient temperature (operational)                             | -25 °C...+60 °C                               |
| Storage temperature   | -40 °C...+80 °C                               |
| UL 94 flammability class                                      | V-0   |
| Humidity  | 40°C / 93% rel. humidity, no condensation     |
| Approvals   | GL; GOSTME25; CE; cULus                       |
| Standards   | EN 50178, GL 2003-VI-Abs. 9, IEC 62314, UL508 |
| Insulation coordination (EN 50 178)                           |   |
| Rated voltage   | 300V  |
| Rated impulse withstand voltage                               | 4 kV (1.2 / 50 µs)                            |
| Clearance and creepage distances for control side - load side | > 3 mm  |
| Surge category  | III   |
| Pollution severity  | 2   |
| Dimensions  |   |
| Clamping range (rating- / min. / max.)                        | mm <sup>2</sup> 2.5 / 0.5 / 4                 |
| Length x width x height                                       | mm 90 x 6.1 x 98                              |
| Note  |   |
|   |   |
| Screw connection  |   |
|   |   |
|   |   |

**Ordering data**

| Connection system | Type               | Qty. | Part No.   |
|-------------------|--------------------|------|------------|
| Screw connection  | MOS 12-28VDC/5VTTL | 1    | 8937930000 |

**Note**

**Accessories**

**Note**

Example: printer interface

