

## Terminal opto-coupler

### Transistor output

### with enhanced features

**MIRO 6.2**  
Transistor 0.5 A

**MIRO 6.2**  
Transistor 2 A

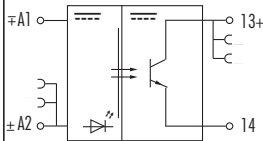
**MIRO 6.2**  
Transistor 10 A

**MIRO 6.2**  
Transistor 10 A  
overload and short-circuit protection



### Circuit diagram

Common connection up to max. 50 V AC/DC



Ordering data	Art.-No.	Art.-No.	Art.-No.	Art.-No.
Input voltage	Spring clamp/screw terminals	Spring clamp/screw terminals	Spring clamp/screw terminals	Spring clamp/screw terminals
5 V DC		UL + CSA <b>6652502</b>		
24 V DC	UL + CSA <b>6652500</b>	UL + CSA <b>6652501</b>	<b>6652520</b>	<sup>2)</sup> <b>6652521</b>
48 V DC	UL + CSA <b>6652505</b>			
110 V AC/DC	UL + CSA <b>6652506</b>	UL + CSA <b>6652508</b>		
230 V AC	UL + CSA <b>6652507</b>	UL + CSA <b>6652508</b>		

Input				
ON/OFF/Control current	5 V DC	4 ... 5.5 V DC	/ 0 ... 2 V DC	/ 6 mA
	24 V DC	10 ... 44 V DC	/ 0 ... 3 V DC	/ 6 mA
	48 V DC	18 ... 56 V DC	/ 0 ... 12 V DC	/ 6 mA
	110 V AC/DC	70 ... 130 V AC/DC	/ 0 ... 30 V AC/DC	/ 6 mA (at Art.-No. 6652508 90...250 V AC)
	230 V AC	90 ... 250 V AC	/ 0 ... 30 V AC	/ 7 mA (at Art.-No. 6652508 15 mA)

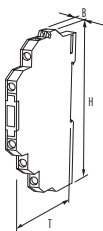
Status indicator: yellow LED

Output				
Switching element	Transistor	Transistor		
Switching current min./max.	0.1 mA/0.5 A (see de-rating curve)	1 mA/2 A (no de-rating)	1 mA/10 A (see de-rating curve)	<sup>1)</sup> 1 mA/10 A (see de-rating curve)
Switched voltage	5 ... 48 V DC	5 ... 48 V DC	5 ... 48 V DC	
Saturation voltage (across output)	≤ 1.2 V DC	≤ 0.3 V DC	≤ 0.12 V DC	
Leakage current (when output is open)	< 0.3 mA		< 25 µA	
Switching time ON/OFF	100/700 µs	1/5 ms, (3/10 ms at Art.-No. 6652508)	2/5 ms (at 10 A load)	
Switching frequency ohmic/inductive	500/30 Hz	10/1 Hz	1 Hz	

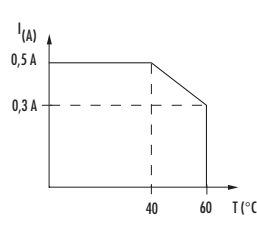
General data				
Test isolation voltage	3.75 kV AC	2.5 kV AC	2.75 kV AC	
Temperature range	-20...+60 °C			
Housing	flame retardant black plastic			
Mounting method	DIN-rail mounting to EN 60715			
Dimensions H x B x T	78 x 6.2 x 65 mm			

Accessories	Art.-No.
Bridging link max. 2 A	<b>90961</b>
Bridging comb 10-pole, red	<b>90976</b>
End caps, 2 pieces, red	<b>90982</b>
Bridging comb 10-pole, blue	<b>90975</b>
End caps, 2 pieces, blue	<b>90980</b>
Wire chain 16-pole	<b>90977</b>
Label plate	<b>90901</b>

### Dimension drawing

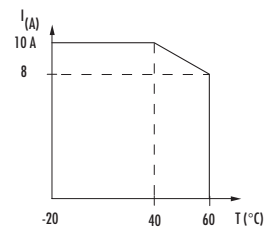


### De-rating curve



Transistor 0.5 A

### De-rating curve



Transistor 10 A

### Notes

For screw-type terminal connection, the item number changes from 6652... to 52... (i.e. the prefix 66 is dropped).

<sup>1)</sup> Pulse switched overload and short-circuit protection. <sup>2)</sup> Art.-No. 6652522 resp. 52522 with 5 A switching current.

## Terminal opto-coupler

fast transistor output  
C/O contact

with enhanced features

### MIRO 6.2

Transistor 2 A  
with soldering terminal



### MIRO 6.2

Transistor 0.5 A  
with C/O output

### MIRO 6.2

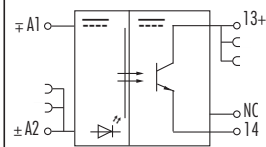
Transistor 0.5 A  
control current 0.1 mA  
<sup>1)</sup>max. switching frequency 20 kHz

### MIRO 6.2

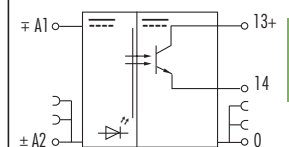
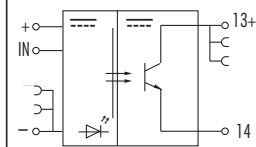
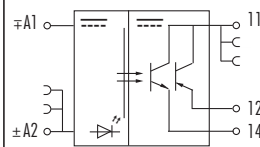
Transistor 2 A  
short-circuit protected  
max. 1 kHz switching frequency

#### Circuit diagram

Common connection up to max. 50 V DC



Opposite potential can be applied at NC



#### Ordering data

	Art.-No.	Art.-No.	Art.-No.	Art.-No.
Control voltage input	Spring clamp/screw terminals	Spring clamp/screw terminals	Spring clamp/screw terminals	Spring clamp/screw terminals
5 V DC				
24 V DC	UL	UL + CSA	UL + CSA	
48 V DC	<b>6652512</b>	<b>6652510</b>	<sup>1)</sup> <b>6652511</b>	<b>6652503</b>
110 V AC/DC				
230 V AC				

#### Input

ON/OFF/Control current	5 V DC			
	24 V DC	10 ... 44 V DC	/ 0 ... 5 V DC / 6 mA	4.2 ... 30 V DC / 0 ... 2 V DC / 0.1 mA
	48 V DC			10 ... 48 V DC / 0 ... 5 V DC / 6 mA
	110 V AC/DC			
	230 V AC			

Status indicator

yellow LED

#### Output

Switching element	Transistor		
Switching current min./max.	<sup>2)</sup> 1 mA/2 A overload protection	0.1 mA/0.5 A (see de-rating curve)	1 mA/2 A short-circuit protected
Switched voltage	5 ... 48 V DC		10 ... 35 V DC
Saturation voltage (across output)	≤ 0.35 V DC	≤ 1.2 V DC	≤ 1.2 V DC
Leakage current (when output is open)	< 0.1 mA		
Switching time ON/OFF	5/10 ms	40/150 μs	12/12 μs
Switching frequency ohmic/inductive	10 Hz	1 kHz	20 kHz
			1 kHz

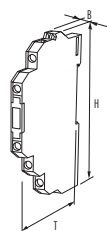
#### General data

Test isolation voltage	2.5 kV AC	3.75 kV AC	
Temperature range	-20 ... +60 °C		
Housing	flame retardant black plastic		
Mounting method	DIN-rail mounting to EN 60715		
Dimensions H x B x T	90 x 6.2 x 65 mm		

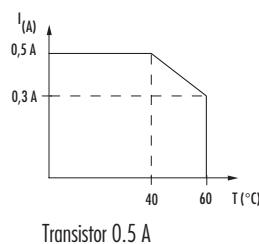
#### Accessories

	Art.-No.
Bridging link max. 2 A	<b>90961</b>
Bridging comb 10-pole, red	<b>90976</b>
End caps, 2 pieces, red	<b>90982</b>
Bridging comb 10-pole, blue	<b>90975</b>
End caps, 2 pieces, blue	<b>90980</b>
Wire chain 16-pole	<b>90977</b>
Label plate	<b>90901</b>

#### Dimension drawing



#### De-rating curve



#### Notes

For screw-type terminal connection, the item number changes from 6652... to 52... (i.e. the prefix 66 is dropped).  
<sup>1)</sup> 30 kHz switching frequency with spring terminals available under Art.-No. 526071. <sup>2)</sup> Making current limitation.

## Terminal opto-coupler with enhanced features

**MIRO 6.2**  
Triac 0.5 A

**MIRO 6.2**  
Triac 0.5 A  
with enhanced features

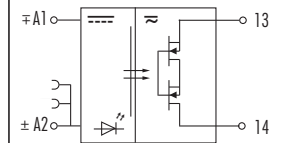
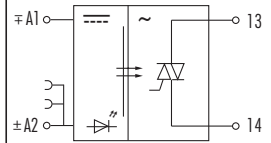
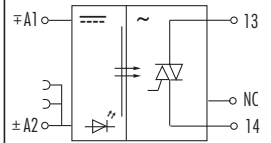
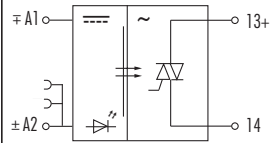
**MIRO 6.2**  
Triac 1 A

**MIRO 6.2**  
Transistor 1 A  
with multiple voltage output AC/DC



### Circuit diagram

Common connection up to max. 50 V AC/DC



### Ordering data

	Art.-No.	Art.-No.	Art.-No.	Art.-No.
Input voltage	Spring clamp/screw terminals	Spring clamp/screw terminals	Spring clamp/screw terminals	Spring clamp/screw terminals
5 V DC	UL <b>6652551</b>			
24 V DC	UL <b>6652550</b>	UL <b>6652560</b>	<b>6652571</b>	<b>6652572</b>
48 V DC	<b>6652555</b>			
110 V AC/DC	UL <b>6652556</b>			
230 V AC	UL <b>6652557</b>			

### Input

ON/OFF/Control current	5 V DC	4.0 ... 5.5 V DC	/ 0 ... 2 V DC	/ 6 mA		
	24 V DC	10 ... 44 V DC	/ 0 ... 3 V DC	/ 6 mA	10 ... 53 V DC/0 ... 3 V DC/9 mA	10 ... 53 V DC/0 ... 5 V DC/10 mA
	48 V DC	18 ... 56 V DC	/ 0 ... 12 V DC	/ 6 mA		
	110 V AC/DC	70 ... 130 V AC/DC	/ 0 ... 35 V AC/DC	/ 4 mA		
	230 V AC	140 ... 250 V AC	/ 0 ... 80 V AC	/ 7 mA		

Status indicator

yellow LED

### Output

Switching element	Triac	Triac	Transistor
Switching current min./max.	0.1 mA/0.5 A (see de-rating curve)	0.01 mA/1.0 A (see de-rating curve)	1 mA/1.0 A (see de-rating curve)
Switched voltage	24 ... 250 V AC	12 ... 280 V AC	5 ... 250 V AC/5 ... 350 V DC
Saturation voltage (across output)	≤ 1.5 V AC	≤ 1.5 V AC	≤ 0.7 V AC/DC
Leakage current (when output is open)	< 0.3 mA	< 1 mA	< 25 µA
Switching time ON/OFF	10/10 ms	10/10 ms	3/6 ms
Switching frequency ohmic/inductive	20 Hz	2 Hz	10 Hz

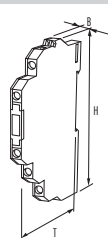
### General data

Test isolation voltage	2.5 kV AC		2.75 kV AC
Temperature range	-20 ... +60 °C		
Housing	flame retardant black plastic		
Mounting method	DIN-rail mounting to EN 60715		
Dimensions H x B x T	78 x 6.2 x 65 mm	90 x 6.2 x 65 mm	78 x 6.2 x 65 mm

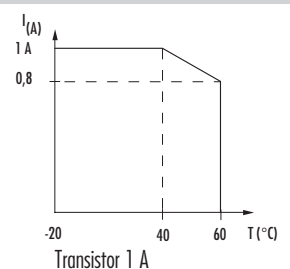
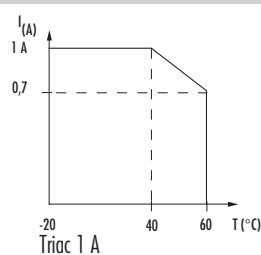
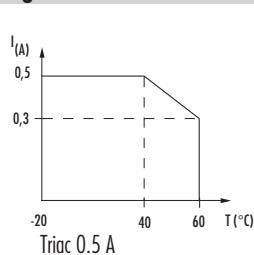
### Accessories

	Art.-No.
Bridging link max. 2 A	<b>90961</b>
Bridging comb 10-pole, red	<b>90976</b>
End caps, 2 pieces, red	<b>90982</b>
Bridging comb 10-pole, blue	<b>90975</b>
End caps, 2 pieces, blue	<b>90980</b>
Wire chain 16-pole	<b>90977</b>
Label plate	<b>90901</b>

### Dimension drawing



### De-rating curves



### Notes

For screw-type terminal connection, the item number changes from 6652... to 52... (i.e. the prefix 66 is dropped).

## Terminal opto-coupler

### MIRO 6.2

Transistor 2 A  
with output isolation link



### MIRO 6.2

Triac 0.5 A  
with output isolation link

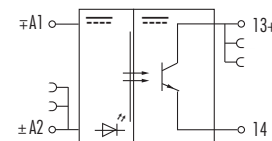
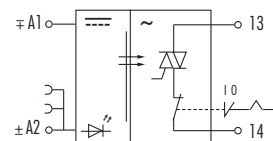
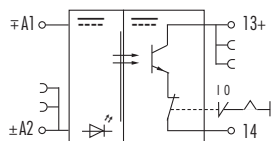
### MIRO 6.2 Pluggable

Transistor



### Circuit diagram

Common connection up to max. 50 V DC



### Ordering data

Input voltage	Spring clamp/screw terminals	Art.-No.	Spring clamp/screw terminals	Art.-No.	Spring clamp terminals	Art.-No.
5 V DC						
24 V DC	UL + CSA	<b>6652513</b>		<b>6652561</b>	UL	<b>3000-32512-2100010</b>
48 V DC						
110 V AC/DC						
230 V AC						

### Input

ON/OFF/Control current	5 V DC	24 V DC	48 V DC	110 V AC/DC	230 V AC
		10...53 V DC / 0...5 V DC / 7 mA			17...30 V DC / 0...5 V DC / 7 mA

Status indicator

yellow LED

—

### Output

Switching element	Transistor	Triac	Transistor
Switching current min./max.	1 mA/2 A	0.1 mA/0.5 A (see de-rating curve)	1 mA/2 A
Switched voltage	5...48 V DC	24...250 V AC	1.5...24 V DC
Saturation voltage (across output)	≤ 0.3 V DC	≤ 15 V AC	≤ 0.15 V AC
Leakage current (when output is open)	< 0.3 mA	< 0.3 mA	< 10 µA
Switching time ON/OFF	1/5 ms	10/10 ms	0.1/0.3 ms
Switching frequency ohmic/inductive	10/1 Hz	20/1 Hz	1000/100 Hz

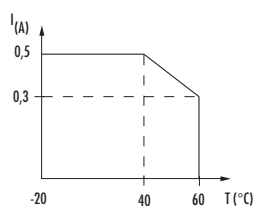
### General data

Test isolation voltage	2.5 kV AC
Temperature range	-20...+60 °C
Housing	flame retardant black plastic
Mounting method	DIN-rail mounting to EN 60715
Dimensions H x B x T	78 x 6.2 x 65 mm

### Accessories

Accessories	Art.-No.
Bridging link max. 2 A	<b>90961</b>
Bridging comb 10-pole, red	<b>90976</b>
End caps, 2 pieces, red	<b>90982</b>
Bridging comb 10-pole, blue	<b>90975</b>
End caps, 2 pieces, blue	<b>90980</b>
Wire chain 16-pole	<b>90977</b>
Label plate	<b>90901</b>

### De-rating curve



### Accessories

Accessories	Art.-No.
Bridging link, blue	<b>3000-90000-0300010</b>
Bridging link, black	<b>3000-90000-0300020</b>
Removable opto-coupler	<b>3000-32522-2100010</b>
Isolation plate	<b>3000-90000-0300030</b>

### Notes

For screw-type terminal connection, the item number changes from 6652... to 52... (i.e. the prefix 66 is dropped)

## Mini-opto-coupler

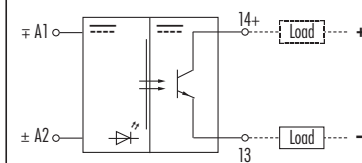
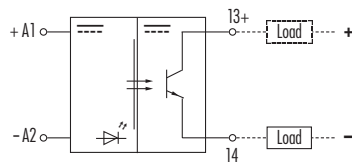
### Transistor output

## AMMS

## AMMS



### Circuit diagram



### Ordering data

Control voltage input  
3.5...5.5 V DC  
24 V DC

### Art.-No.

50041

### Art.-No.

50040

### Input

Voltage range "ON" 3.5...5.5 V DC  
Voltage range "OFF" 0...0.8 V DC  
Nominal current 6 mA  
Status indicator red LED

10...53 V DC  
0...3 V DC

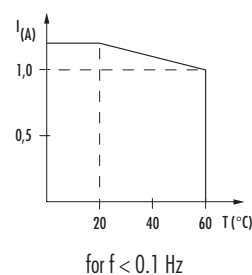
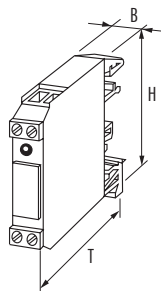
### Output

Switching element Transistor  
Switching voltage min./max. 4.5...53 V DC  
Switching current min./max. 1 mA...1.2 A  
Saturation voltage (across output)  $\leq 1.2$  V DC  
Leakage current (when output is open)  $< 0.3$  mA  
Switching time ON/OFF 100/700  $\mu$ s  
Switching frequency ohmic/inductive 500/30 Hz<sup>1)</sup>

### General data

Test isolation voltage 3.75 kV AC  
Temperature range -20...+60 °C  
Housing flame retardant black plastic  
Mounting method DIN-rail mounting to EN 60715 (TH 35) or (G 32)  
Dimensions H x B x T 56 x 12 x 64 mm

### Dimension drawing/Load curve



### Notes

<sup>1)</sup> Max. switching frequency 500 Hz at resistive load and max. 0.2 A.  
Accessories can be found in chapter 3.13

Opto-coupler modules

## Mini-opto-coupler

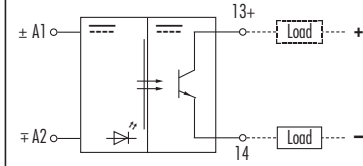
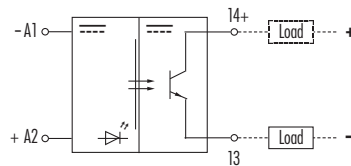
### Transistor output

#### AMMS

#### AMMS



#### Circuit diagram



#### Ordering data

#### Art.-No.

#### Art.-No.

Control voltage input

4...30 V DC

**50010**

24 V DC

**50070**

#### Input

Voltage range "ON"

4...30 V DC

10...53 V DC

Voltage range "OFF"

0...2 V DC

0...3 V DC

Nominal current

10 mA

6 mA

Status indicator

red LED

LED red

#### Output

Switching element

Transistor

Transistor

Switching voltage min./max.

4.5...44 V DC

4.5...40 V DC

Switching current min./max.

1 mA...1.2 A

10 mA...2 A

Saturation voltage (across output)

≤ 1.2 V DC

< 0.1 V DC

Leakage current (when output is open)

< 0.3 mA

0.1 mA

Switching time ON/OFF

65/65 μs

2/8 ms

Switching frequency ohmic/inductive

7 kHz/10 Hz<sup>1)</sup>

2.5 Hz

#### General data

Test isolation voltage

3.75 kV AC

2.5 kV AC

Temperature range

-20...+60 °C

Housing

flame retardant black plastic

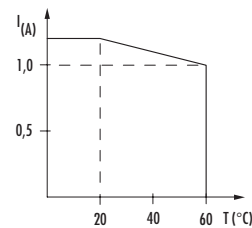
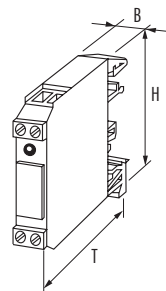
Mounting method

DIN-rail mounting to EN 60715 (TH 35) or (G 32)

Dimensions H x B x T

56 x 12 x 64 mm

#### Dimension drawing/Load curve



Art.-No. 50010

#### Notes

<sup>1)</sup>max. switching frequency at Art.-No. 50010: 7 kHz at resistive load and max. 0.3 A.  
Accessories can be found in chapter 3.13

## Mini-opto-coupler

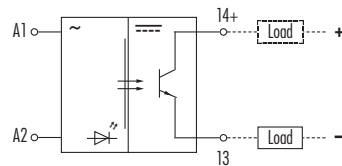
### Transistor output

EMMS

AMMS



#### Circuit diagram



#### Ordering data

Art.-No.

Control voltage input  
110/230 V AC

50105

#### Input

Voltage range "ON"	93.5...253 V AC
Voltage range "OFF"	0...40 V AC
Nominal current	10 mA
Status indicator	LED red

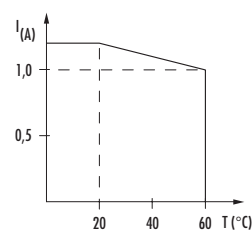
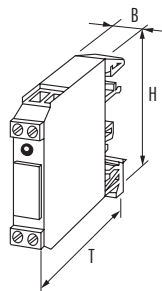
#### Output

Switching element	Transistor
Switching voltage min./max.	4.5...53 V DC
Switching current min./max.	1 mA...1.2 A
Saturation voltage (across output)	$\leq 1.2$ V DC
Leakage current (when output is open)	$< 0.3$ mA
Switching time ON/OFF	20/50 ms
Switching frequency ohm.	5 Hz

#### General data

Test isolation voltage	3.75 kV AC
Temperature range	-20...+60 °C
Housing	flame retardant black plastic
Mounting method	DIN-rail mounting to EN 60715 (TH 35) or (G 32)
Dimensions H x B x T	56 x 12 x 64 mm

#### Dimension drawing/Load curve



for  $f < 0.1$  Hz

#### Notes

Accessories can be found in chapter 3.13

## Mini-opto-coupler

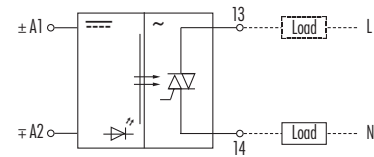
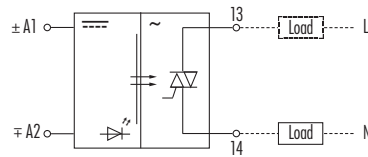
### Triac output

## AMMS

## AMMS



### Circuit diagram



At Art.-No. 50031  
+A1; -A2

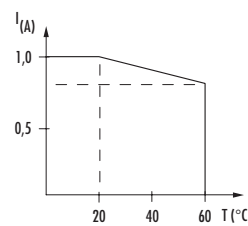
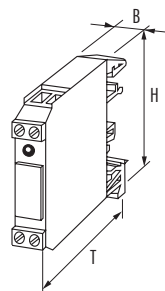
Ordering data	Art.-No.	Art.-No.	Art.-No.
Control voltage input			
TTL (3.5...5.5 V DC)			50031
24 V DC	50032	50030	

Input			
Voltage range "ON"	10...53 V DC	10...53 V DC	3.5...5.5 V DC
Voltage range "OFF"	0...5 V DC	0...3 V DC	0...0.8 V DC
Nominal current	15 mA	10 mA	
Status indicator	red LED	LED red	

Output		
Switching element	Triac	Triac
Switching voltage min./max.	24...253 V AC	24...253 V AC
Switching current min./max.	1 mA...0.1 A	50 mA...1 A
Saturation voltage (across output)	< 1.3 V AC	≤ 1.3 V AC
Leakage current (when output is open)	< 0.1 mA	< 5 mA
Switching time ON/OFF	10/10 ms	
Switching frequency ohm.	25 Hz	

General data	
Test isolation voltage	2.5 kV AC
Temperature range	-20...+60 °C
Housing	flame retardant black plastic
Mounting method	DIN-rail mounting to EN 60715 (TH 35) or (G 32)
Dimensions H x B x T	56 x 12 x 64 mm

### Dimension drawing/Load curve



Art.-No. 50030/50031

Notes	
	Accessories can be found in chapter 3.13

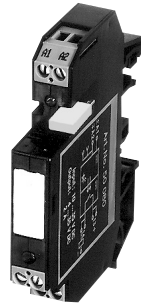
## Mini-opto-coupler

### Transistor output

Double terminals on the output side

## AMMDS

with negative plug-link

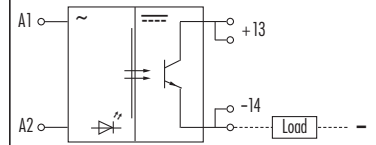
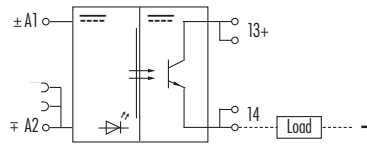


## AMMDS

with negative plug-link

## AMMDS

### Circuit diagram



### Ordering data

Control voltage input	Art.-No.	Art.-No.	Art.-No.
24 V DC	50081	50080	
230 V AC			50110

### Input

Voltage range "ON"	10...53 V DC		195...253 V AC
Voltage range "OFF"	0...3 V DC		0...110 V AC
Nominal current	6 mA		10 mA
Status indicator	red LED		LED red
Plug link	Art.-No. 90960 included with module		no plug-link facility

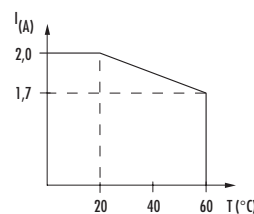
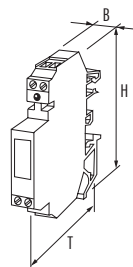
### Output

Switching element	transistor switched positive	transistor switched positive	transistor switched positive
Switching voltage min./max.	4...40 V DC	4...35 V DC	4...40 V DC
Switching current min./max.	1 mA...0.1 A	10 mA...2 A (short-circuit protected)	1 mA...0.1 A
Saturation voltage (across output)	< 1.2 V DC	< 0.5 V DC	< 1.2 V DC
Leakage current (when output is open)	< 0.3 mA	< 0.3 mA	< 0.3 mA
Switching time ON/OFF	2/2 ms	2/15 ms	20/45 ms
Switching frequency ohmic/inductive	300/40 Hz	10/1 Hz	10/1 Hz

### General data

Test isolation voltage	3.75 kV AC	2.5 kV AC	3.75 kV AC
Temperature range	-20...+60 °C		
Housing	flame retardant black plastic		
Mounting method	DIN-rail mounting to EN 60715 (TH 35) or (G 32)		
Dimensions H x B x T	82 x 12 x 68 mm		

### Dimension drawing/Load curve



Art.-No. 50080

### Notes

Accessories can be found in chapter 3.13

Opto-coupler modules

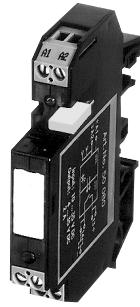
## Mini-opto-coupler

### Transistor output

### Negative plug-link

## AMMDS

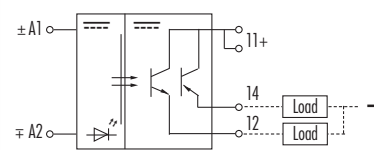
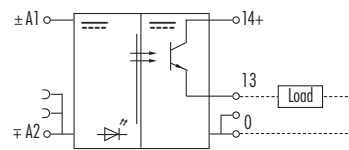
double terminals on the output side  
for rapid switching



## AMMDU

with electronic C/O contact

### Circuit diagram



### Ordering data

### Art.-No.

### Art.-No.

Control voltage input  
24 V DC

**50082**

**50085**

### Input

Voltage range "ON"

10...35 V DC

10...53 V DC

Voltage range "OFF"

0...5 V DC

0...6 V DC

Nominal current

15 mA

10 mA

Status indicator

red LED

red LED

Plug link

Art.-No. 90960 included with module

no plug-link facility

### Output

Switching element

Transistor

Transistor

Switching voltage min./max.

5...35 V DC

4.5...53 V DC

Switching current min./max.

1 mA...2 A

1 mA...1 A

Saturation voltage (across output)

< 0.5 V DC

< 1.5 V DC

Leakage current (when output is open)

< 0.3 mA

< 0.3 mA

Switching time ON/OFF

7/6  $\mu$ s

25/75  $\mu$ s

Switching frequency ohmic/inductive

30 kHz/200 Hz

1 kHz/10 Hz

### General data

Test isolation voltage

2.5 kV AC

Temperature range

-20...+60 °C

Housing

flame retardant black plastic

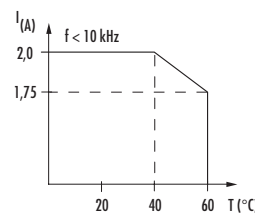
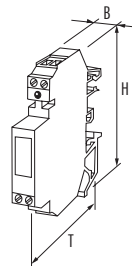
Mounting method

DIN-rail mounting to EN 60715 (TH 35) or (G 32)

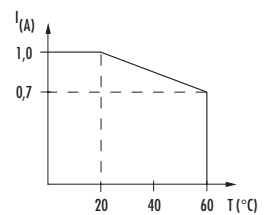
Dimensions H x B x T

82 x 12 x 68 mm

### Dimension drawing/Load curve



Art.-No. 50082



Art.-No. 50085

### Notes

Accessories can be found in chapter 3.13

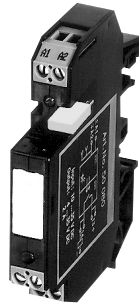
## Mini-opto-coupler

**Triac output or all voltage version**

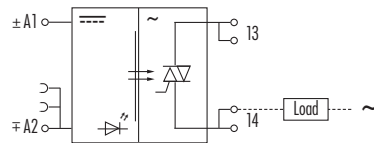
**with double terminals on the output side**

## AMMDS

with negative plug-link



### Circuit diagram



### Ordering data

Control voltage input  
24 V DC

**Art.-No.**

**50092**

### Input

Voltage range "ON"	10...35 V DC
Voltage range "OFF"	0...3 V DC
Nominal current	6 mA
Status indicator	red LED
Plug link	Art.-No. 90960 included with module

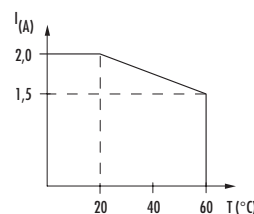
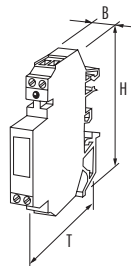
### Output

Switching element	Triac
Switching voltage min./max.	24...280 V AC
Switching current min./max.	50 mA...2 A
Saturation voltage (across output)	≤ 1 V
Leakage current (when output is open)	≤ 2 mA
Switching time ON/OFF	10/10 ms
Switching frequency ohmic/inductive	20/5 Hz

### General data

Test isolation voltage	2.5 kV AC
Temperature range	-20...+60 °C
Housing	flame retardant black plastic
Mounting method	DIN-rail mounting to EN 60715 (TH 35) or (G 32)
Dimensions H x B x T	82 x 12 x 68 mm

### Dimension drawing/Load curve



Art.-No. 50092

### Notes

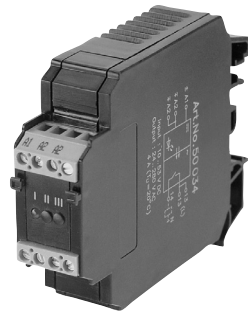
Accessories can be found in chapter 3.13

Opto-coupler modules

## MCVO Opto-coupler modules

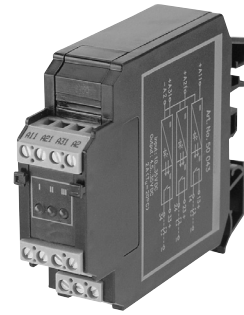
### Transistor output

#### AMS

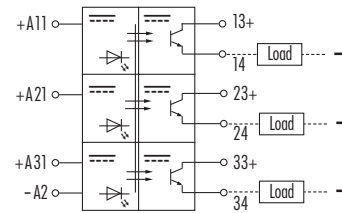
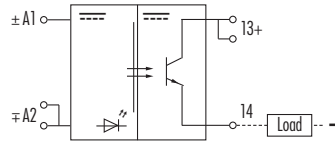


#### AMS

#### 3-way Transistor



#### Circuit diagram



common negative for all 3 inputs = -A2

#### Ordering data

#### Art.-No.

#### Art.-No.

Control voltage input  
24 V DC

**50044**

**50043**

#### Input

Voltage range "ON" 10...53 V DC <sup>1)</sup>  
 Voltage range "OFF" 0...3 V DC  
 Nominal current 10 mA  
 Status indicator red LED

red LED per input

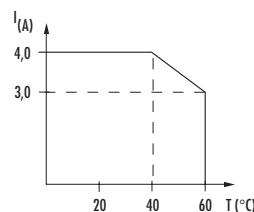
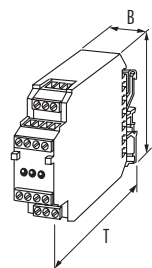
#### Output

Switching element	transistor switched positive	transistor switched positive
Switching voltage min./max.	4.5...53 V DC	4.5...35 V DC
Switching current min./max.	0.1...4 A	10 mA...2 A (short-circuit protected)
Saturation voltage (across output)	< 1.5 V DC	< 0.5 V DC
Leakage current (when output is open)	< 10 mA	< 0.3 mA
Switching time ON/OFF	8/14 μs	2/15 ms
Switching frequency ohmic/inductive	2 kHz/4 Hz	10/1 Hz

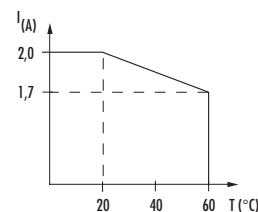
#### General data

Test isolation voltage	3.75 kV AC	2.5 kV AC
Temperature range	-20...+60 °C	
Housing	flame retardant black plastic	
Mounting method	DIN-rail mounting to EN 60715 (TH 35) or (G 32)	
Dimensions H x B x T	75 x 22.5 x 102 mm	

#### Dimension drawing/Load curve



Art.-No. 50044



Art.-No. 50043

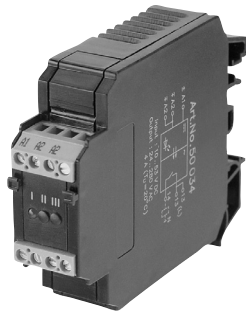
#### Notes

Accessories can be found in chapter 3.13  
<sup>1)</sup> 230 V AC control voltage on request

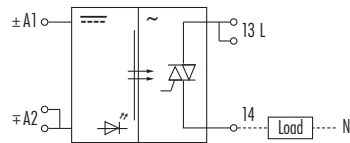
## MCVO Opto-coupler modules

## AMS

### Triac output



### Circuit diagram



### Ordering data

Art.-No.

Control voltage input  
24V DC

50034

### Input

Voltage range "ON"	10...53 V DC <sup>1)</sup>
Voltage range "OFF"	0...3 V DC
Nominal current	6 mA
Status indicator	red LED

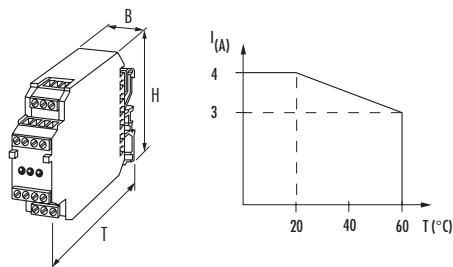
### Output

Switching element	Triac
Switching voltage min./max.	24...253 V AC
Switching current min./max.	50 mA...4 A
Saturation voltage (across output)	< 1.4 V
Leakage current (when output is open)	< 10 mA
Switching time ON/OFF	10/20 ms
Switching frequency ohmic/inductive	30/5 Hz

### General data

Test isolation voltage	3.75 kV AC
Temperature range	-20...+60 °C
Housing	flame retardant black plastic
Mounting method	DIN-rail mounting to EN 60715 (TH 35) or (G 32)
Dimensions H x B x T	75 x 22.5 x 102 mm

### Dimension drawing/Load curve



### Notes

Accessories can be found in chapter 3.13  
<sup>1)</sup> 230 V AC control voltage on request

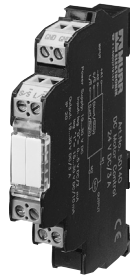
Opto-coupler modules

**Pole changing switch for DC motors**

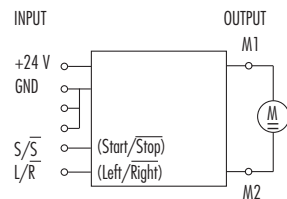
**Start-stop/left-right  
Active stop modus**

**Over current or  
temperature indication**

**MIRO 12.4**  
DC MOTOR CONTROL



### Circuit diagram



### Ordering data

Control voltage input	Spring clamp/screw terminals	<b>Art.-No.</b>
24V DC		<b>6650140</b>

### Input

Voltage range "ON"	15...30 V DC
Voltage range "OFF"	0...5 V DC
Nominal current	max. 10 mA
Status indicator	yellow LED - right running, green LED - left running

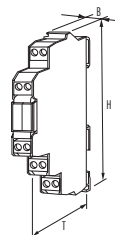
### Output

Switching element	Transistor
Switching voltage min./max.	19.2...30 V DC
Switching current max.	3 A (see de-rating curve)
Highest current	approx. 6 A for 100 ms
Saturation voltage (across output)	< 1.4 V
Leakage current (when output is open)	< 10 mA
Switching time ON/OFF	1.2/10 ms
Switching frequency ind.	max. 1 Hz (motor dependant)
Changing time	50 ms
Status indicator	LED red failure (overvoltage/overtemperature)

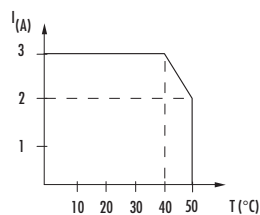
### General data

Test isolation voltage	no separation
Temperature range	0...+50 °C
Housing	flame retardant black plastic
Mounting method	DIN-rail mounting to EN 60715 (TH 35) or (G 32)
Dimensions H x B x T	90 x 12.4 x 65 mm

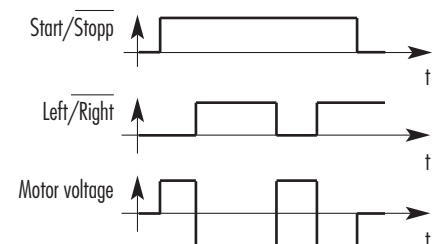
### Dimension drawing



### De-rating curve



### Time diagram



### Notes

For screw-type terminal connection, the item number changes from 6650... to 50... (i.e. the prefix 66 is dropped)  
Accessories can be found in chapter 3.13