



# ACTIVE INTERFACE TECHNOLOGY

## ANALOG AND DIGITAL

- Solid state or relay outputs are short circuit protected
- LED display
- DIN rail mounting

### CONVERT MEASURED VALUES INTO SIGNALS

While measuring, positioning or checking systems, the status of the machine or installation should be monitored. The measured values have to be converted into digital or standard signals (0...20 mA, 4...20 mA or 0...10V) so that PLCs and computers can process them.

**Murrelektronik offers a wide range of intelligent interface modules that enable signal conversion or signal acquisition with galvanic separation.**

### Active Interface Technology



#### Converters

AD/DA converters, Analog converters, Frequency converters, U/I converters

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#### Timer

MIRO 6.2 Timer

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#### Comparator modules

MAK

Page 1.12.14



#### Temperature converter

MTW

Page 1.12.15



#### Switches

Tree

Page 1.12.16



#### Further

Brake rectifiers, Demagnetizer, MIRO GSM

Page 1.12.18

# ACTIVE INTERFACE TECHNOLOGY

## AD/DA converters

- Input and output galvanically separated
- Screw terminals

### MAW

A/D converter

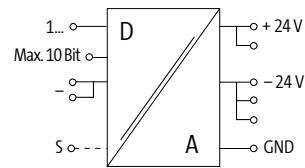
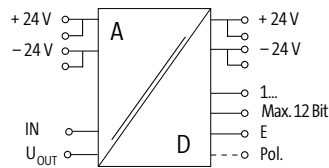


### MDW

D/A converter



### Circuit diagram

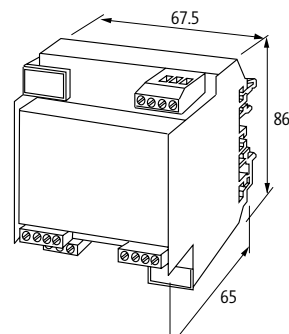
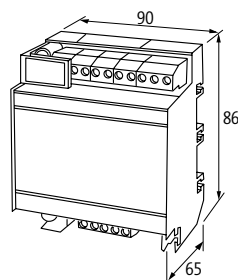


Order Data	Art-No.	Art-No.
4...20 mA/8 Bit	44091	44073
0...10 V DC/8 Bit	44062	44067
0...10 V DC/10 Bit	44063	44068

Technical Data		
Operating voltage	2 x 21...30 V DC, smoothed (with LED)	21...30 V DC, smoothed (with LED)
Operating current	60 mA (idle load) plus max. 100 mA per digital output	100 mA (idle load), max. 150 mA (full load)
Tolerance	±1 LSB	±1 %
Conversion time	80 ms, (6 Bit adjustable 2.5...150 ms)	-
Release input E	log 1 ≥ 16 V, log 0 ≤ 6 V	
<b>Input</b>		
Input current	type dependent	max. 10 mA/Bit
Input signal	type dependent	0...30 V DC (with LED display)
<b>Output</b>		
Output current	100 mA/Bit, with LED	max. 40 mA (0...10 V DC); max. 20 mA (0...20 mA), 4...20 mA
<b>General data</b>		
Test isolation voltage	2.5 kV	
Temperature range	0...+85 °C	0...+50 °C
Mounting method	DIN-rail mountable (EN 60715)	

Description		
Functional description	On modules with voltage inputs, it is possible to set the maximum input signal using a trimmer. The output "POL" indicates the polarity. A voltage output U <sub>out</sub> 15 V/20 mA (minimal ripple) can be used as a power supply for the analog output device. The hold input E will sample and hold the analog value. When E is set to HIGH the outputs will show the last measured value. When E is set to LOW the converter will run again.	The maximum output signal of converters with voltage output can be adjusted to the operating voltage minus 2 V. The outputs are short-circuit protected and overload protected due to internal current limiting.

### Dimension drawing



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### Notes

# ACTIVE INTERFACE TECHNOLOGY

## Voltage converter

– Input and output galvanically separated

### MU..W 6.2 Voltage (U)

INPUT: 0...10 V DC  
with bridge system  
Screw terminals

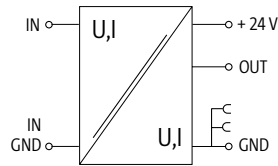


### MU..W 6.2 Voltage (U)

INPUT: 0...10 V DC  
with bridge system  
Spring clamp terminals



## Circuit diagram



Order Data	Art-No.	Art-No.	Art-No.	Art-No.	Art-No.	Art-No.
OUTPUT: 0...10 V DC / 20 mA	44205			6644205		
OUTPUT: 0...20 mA		44232			6644232	
OUTPUT: 4...20 mA			44233			6644233

## Technical Data

Operating voltage	24 V DC $\pm 20\%$ , smoothed					
Operating current	50...70 mA					
Tolerance	max. 0.5 %					
Frequency	max. 500 Hz					

## Voltage inputs

Input resistor	approx. 200 kOhm	approx. 250 kOhm	approx. 200 kOhm	approx. 250 kOhm	approx. 200 kOhm
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## Voltage output signals

Load	max. 25 mA					
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## Current outputs

Load	max. 500 Ohm					
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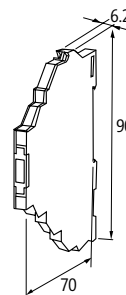
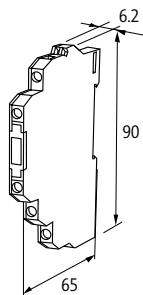
## General data

Test isolation voltage	1.5 kV		2.5 kV	1.5 kV	
Temperature range	0...+60 °C				
Mounting method	DIN-rail mountable (EN 60715)				

## Description

Functional description: The Murrelektronik analog converters convert standard signal formats (0...10 V, 0...20 mA, 4...20 mA) galvanically separated into one of these signal formats. Due to an integrated current limiter the output is short-circuit and overload protected. Module MIIW – 0/4...20 mA to 0/4...20 mA – without auxiliary supply

## Dimension drawing



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## Notes

# ACTIVE INTERFACE TECHNOLOGY

## Voltage converter

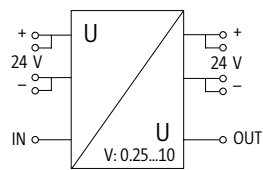
– Input and output galvanically separated

### MPUUW

INPUT: 0...10 V DC  
Screw terminals



## Circuit diagram



Regular voltage amplification

## Order Data

OUTPUT: 0...10 V DC/300 mA

Art-No.

44201

## Technical Data

Operating voltage	24 V DC $\pm 20\%$ , smoothed
Operating current	max. 300 mA
Tolerance	max. 0.5 %
Frequency	max. 1 kHz

## Voltage inputs

Input resistor approx. 10 kOhm

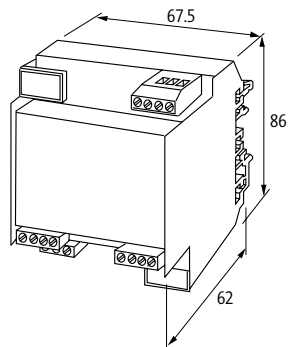
## Voltage output signals

Load max. 300 mA

## General data

Temperature range	0...+50 °C
Mounting method	DIN-rail mountable (EN 60715)

## Dimension drawing



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## Notes

# ACTIVE INTERFACE TECHNOLOGY

## Current converter

– Input and output galvanically separated

### MI..W 6.2 current (I)

INPUT: 0...20 mA  
Screw terminals

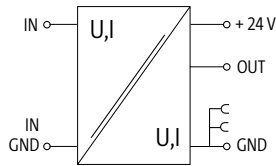


### MI..W 6.2 current (I)

INPUT: 0...20 mA  
Spring clamp terminals



## Circuit diagram



Order Data	Art-No.	Art-No.	Art-No.	Art-No.	Art-No.	Art-No.
OUTPUT: 0...10 V DC / 20 mA	44212			6644212		
OUTPUT: 0...20 mA		44226			6644226	
OUTPUT: 4...20 mA			44228			6644228

## Technical Data

Operating voltage	24 V DC $\pm$ 20 %, smoothed
Operating current	50...70 mA
Tolerance	max. 0.5 %
Frequency	max. 500 Hz

## Current input signals

Load	approx. 250 Ohm
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## Voltage output signals

Load	max. 25 mA
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## Current outputs

Load	max. 500 Ohm
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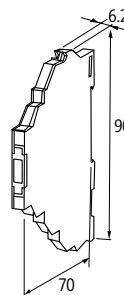
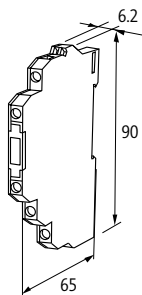
## General data

Test isolation voltage	1.5 kV
Temperature range	0...+60 °C
Mounting method	DIN-rail mountable (EN 60715)

## Description

Functional description	The Murrelektronik analog converters convert standard signal formats (0...10 V, 0...20 mA, 4...20 mA) galvanically separated into one of these signal formats. Due to an integrated current limiter the output is short-circuit and overload protected. Module MIIW – 0/4...20 mA to 0/4...20 mA – without auxiliary supply
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## Dimension drawing



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## Notes

## ACTIVE INTERFACE TECHNOLOGY

### Current converter

– Input and output galvanically separated

#### MI..W 6.2 current (I)

INPUT: 4...20 mA  
Screw terminals

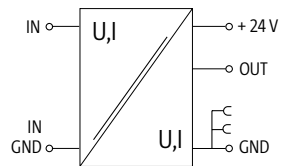


#### MI..W 6.2 current (I)

INPUT: 4...20 mA  
Spring clamp terminals



### Circuit diagram



### Order Data

OUTPUT: 0...10 V DC/20 mA

### Art-No.

44213

### Art-No.

6644213

### Technical Data

Operating voltage	24 V DC $\pm$ 20 %, smoothed
Operating current	50...70 mA
Tolerance	max. 0.5 %
Frequency	max. 500 Hz

### Current input signals

Load approx. 250 Ohm

### Voltage output signals

Load max. 25 mA

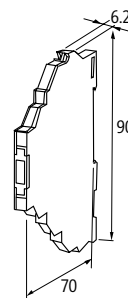
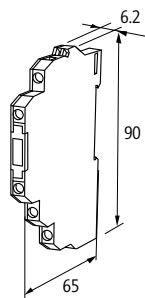
### General data

Test isolation voltage	1.5 kV
Temperature range	0...+60 °C
Mounting method	DIN-rail mountable (EN 60715)

### Description

Functional description  
The Murrelektronik analog converters convert standard signal formats (0...10 V, 0...20 mA, 4...20 mA) galvanically separated into one of these signal formats. Due to an integrated current limiter the output is short-circuit and overload protected. Module MIIW – 0/4...20 mA to 0/4...20 mA – without auxiliary supply

### Dimension drawing



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### Notes

# ACTIVE INTERFACE TECHNOLOGY

## Analog converter

– Input, output, and supply voltage galvanically separated

### MULTI Converter 12.4

INPUT: 0...5 V DC, 0...10 V DC, ±10 V DC  
 INPUT: 0...20 mA, 4...20 mA  
 Screw terminals

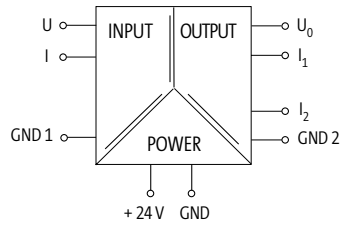


### MULTI Converter 12.4

INPUT: 0...5 V DC, 0...10 V DC, ±10 V DC  
 INPUT: 0...20 mA, 4...20 mA  
 Spring clamp terminals



## Circuit diagram



Order Data	Art-No.	Art-No.
OUTPUT: 0...10 V DC/20 mA	44207	6644207
OUTPUT: 0...20 mA	44207	6644207
OUTPUT: 4...20 mA	44207	6644207

## Technical Data

Operating voltage	24 V DC ±15 %
Operating current	approx. 50 mA
Tolerance	max. 0.5 %
Frequency	max. 25 Hz

## Voltage inputs

Input voltage	0...5, 0...10, ±10 V DC
Input resistor	approx. 100 kOhm

## Current input signals

Input current	0...20 mA, 4...20 mA
Load	approx. 75 Ohm

## Current outputs

Load	max. 400 Ohm
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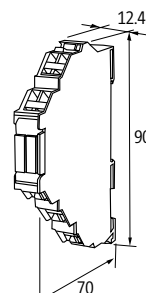
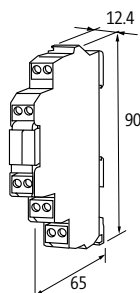
## General data

Test isolation voltage	0.75 kV
Temperature range	-25...+50 °C
Mounting method	DIN-rail mountable (EN 60715)

## Description

Functional description  
 Due to an integrated current limiter on the output, the output is short circuit and overload protected. A special characteristic of the MULTI Converter Art-No. 6644207 includes: Analog voltage signals 0...5 V/0...10 V and -10...+10 V and current signals 0...20 mA and 4...20 mA, these compact modules can be galvanically isolated in the three standard signals, which means all combinations are covered with one model. The selection of the input is done by means of a 5-pole rotary switch, accessible under the identification tag. The voltage supply is galvanically isolated from the input and output circuits (3-way isolation).

## Dimension drawing



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## Notes

## Analog converter

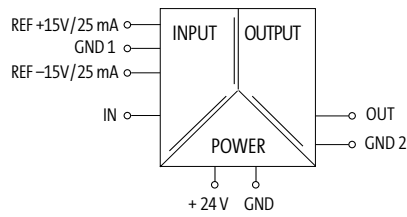
– Input, output, and supply voltage galvanically separated

### MUUW

INPUT:  $\pm 0 \dots 10$  V DC  
OUTPUT:  $\pm 0 \dots 10$  V  
Screw terminals



### Circuit diagram



### Order Data

OUTPUT:  $\pm 0 \dots 10$  V DC

Art-No.

44203

### Technical Data

Operating voltage	24 V DC (+15/-10 %)
Operating current	max. 200 mA
Tolerance	$\pm 1$ %
Frequency	5 kHz, sine wave

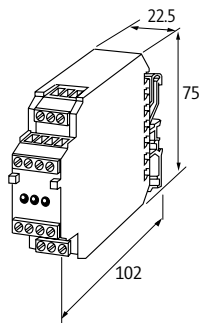
### Current outputs

Load	max. 400 Ohm
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### General data

Test isolation voltage	1.5 kV
Temperature range	0...+50 °C
Mounting method	DIN-rail mountable (EN 60715)

### Dimension drawing



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### Notes



# ACTIVE INTERFACE TECHNOLOGY

## Frequency converter

– Input and output galvanically separated

### M..FW 12.4

INPUT: 0...10 V DC, 0...20 mA, 4...20 mA  
Screw terminals



### M..FW 12.4

INPUT: 0...10 V DC, 0...20 mA, 4...20 mA  
Spring clamp terminals



### MF...W 12.4

INPUT: 0...1 kHz, 0...10 kHz, 0...100 kHz  
Screw terminals

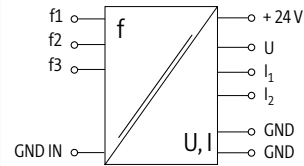
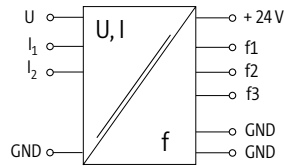


### MF...W 12.4

INPUT: 0...1 kHz, 0...10 kHz, 0...100 kHz  
Spring clamp terminals



## Circuit diagram



Order Data	Art-No.	Art-No.	Art-No.	Art-No.
0...1 kHz, 0...10 kHz, 0...100 kHz	44245	6644245		
0...10 V DC, 0...20 mA, 4...20 mA			44275	6644275

## Technical Data

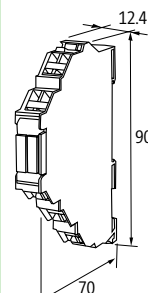
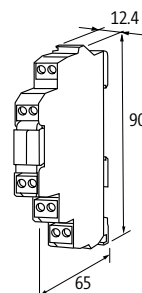
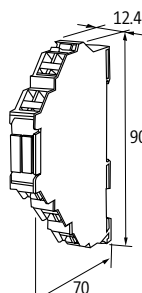
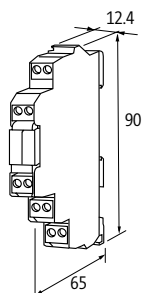
Operating voltage	24 V DC $\pm$ 20 %	
Operating current	max. 60 mA	max. 80 mA
Tolerance	0.5 % from end value	
Response time	–	max. 350 ms
<b>Voltage inputs</b>		
Input voltage	0...10 V DC	10...30 V DC
Input resistor	approx. 100 kOhm	–
<b>Current input signals</b>		
Input current	0...20 mA, 4...20 mA	6...25 mA
Input resistor	approx. 75 Ohm	approx. 1.2 kOhm
<b>Voltage output signals</b>		
Output signal	0...1 kHz, 0...10 kHz, 0...100 kHz	0...10 V DC, 0...20 mA, 4...20 mA
Output voltage	0.5 V (short-circuit protected)	–
<b>General data</b>		
Test isolation voltage	1.5 kV	2.5 kV
Temperature range	-25...+50 °C	
Mounting method	DIN-rail mountable (EN 60715)	

## Description

Functional description  
The new frequency converter in the slim MIRO housing can be universally used. An analog voltage or current, on one of the three inputs, is galvanically isolated, transformed and is at the same time available as square wave voltage (frequency) on all three outputs. The output frequencies are through a 4-pole switch separable in relation to 1:2, 1:4 and 1:8.

The new frequency converter in the slim MIRO housing can be universally used. The frequency that is applied on the three inputs, will be galvanically isolated, transformed and is available as analog signal on all three outputs.

## Dimension drawing



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## Notes

## Timer

– Relay output

– with bridge system

Approvals:

### MIRO 6.2 Timer

Switch-on delay  
Screw terminals



### MIRO 6.2 Timer

Switch-on delay  
Spring clamp terminals



### MIRO 6.2 Timer

Switch-off delay  
Screw terminals

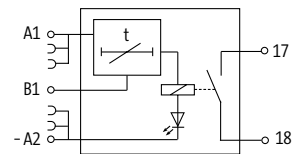
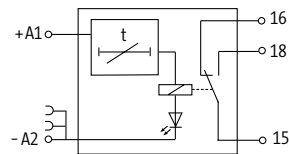


### MIRO 6.2 Timer

Switch-off delay  
Spring clamp terminals



## Circuit diagram



## Order Data

	Art-No.	Art-No.	Art-No.	Art-No.
0.1...10 s	52300	6652300	52310	6652310
3...300 s	52301	6652301	52311	6652311

## Switching capacity (EN 60947-5-1)

AC-12	6 A (24 V AC; 110 V AC; 230 V AC)
AC-15	3 A (24 V AC; 110 V AC; 230 V AC)
DC-13	1 A (24 V DC); 0.2 A (110 V DC); 0.1 A (230 V DC)

## Input

Input voltage	24 V DC (+10 -15 %) input A
Input current	20 mA (input A)
Control voltage	24 V DC (+10 -15 %) input B
Control current	5 mA (input B)

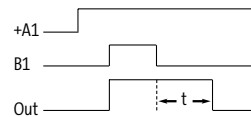
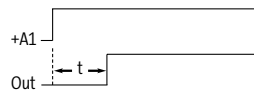
## Output

Output voltage	max. 250 V AC/DC
Output current	max. 6 A
Min. load current	10 mA (12 V DC)
Output rating	max. 1500 VA/120 W
Switching frequency	max. 10 Hz
Contact material	Ag Sn O <sub>2</sub>
Energize/release/contact bounce time	10/15/1.5 ms

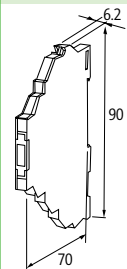
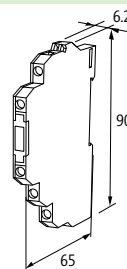
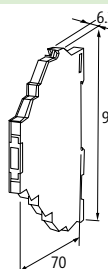
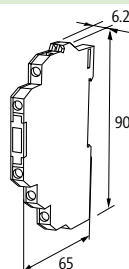
## General data

Mech./ elect. life	20.000.000 switching cycles/load depend
Test isolation voltage	4 kV; safe separation (EN 60947-1)
Temperature range	0...+55 °C
Mounting method	DIN-rail mountable (EN 60715)

## Functional diagram



## Dimension drawing



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## Notes

# ACTIVE INTERFACE TECHNOLOGY

## Timer

- Transistor output
- with bridge system

Approvals:  

## MIRO 6.2 Timer

Impulse expansion  
Screw terminals

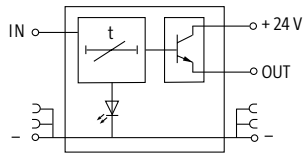


## MIRO 6.2 Timer

Impulse expansion  
Spring clamp terminals



### Circuit diagram



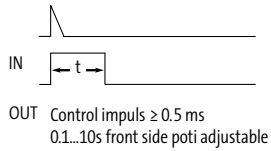
Order Data	Art-No.	Art-No.
0.1...10 s	52320	6652320

Input	
Input voltage	19...29 V DC
Control voltage	16...32 V DC
Time range	0.1...10 s
Impulse length	min. 0.5 ms

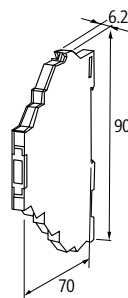
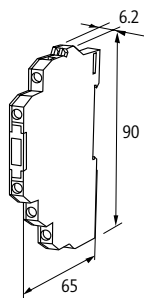
Output	
Switching voltage	Operating voltage - 1.5 V
Switching current per output	max. 100 mA

General data	
Test isolation voltage	no galvanic separation
Temperature range	0...+60 °C
Mounting method	DIN-rail mountable (EN 60715)

### Functional diagram



### Dimension drawing



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### Notes

# ACTIVE INTERFACE TECHNOLOGY

## Timer

– Switch-on delay

– Switch-off delay

Approvals:   

### MIRO 6.2 Timer

multifunctional  
Screw terminals

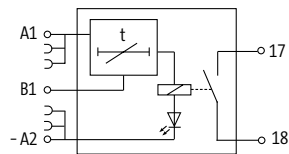


### MIRO 6.2 Timer

multifunctional  
Spring clamp terminals



## Circuit diagram



## Order Data

0.1...300 s

## Art-No.

52350

## Art-No.

6652350

## Input

Input voltage 24 V DC (+10 -15 %) input A

Input current 20 mA (input A)

Control voltage 24 V DC (+10 -15 %) input B

Control current 5 mA (input B)

## Output

Output voltage max. 250 V AC/DC

Output current max. 6 A

Min. load current 10 mA (12 V DC)

Output rating max. 1500 VA/120 W

Switching frequency max. 10 Hz

Contact material Ag Sn O2

Energize/release/contact bounce time 10/15/1.5 ms

## General data

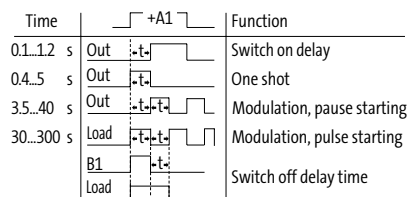
Mech./ elect. life 20.000.000 switching cycles/load dependent

Test isolation voltage 4 kV; safe separation (EN 60947-1)

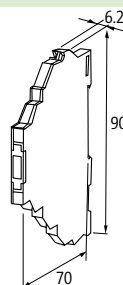
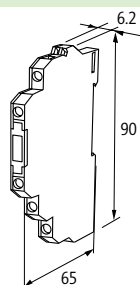
Temperature range 0...+55 °C

Mounting method DIN-rail mountable (EN 60715)

## Functional diagram



## Dimension drawing



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## Notes

# ACTIVE INTERFACE TECHNOLOGY

## Timer

- Switch-on delay
- Switch-off delay
- Changeover contact
- Memory function

### MIRO 6.2 Timer

Transistor output  
Screw terminals

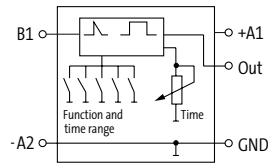


### MIRO 6.2 Timer

Transistor output  
Spring clamp terminals



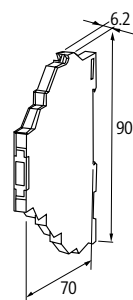
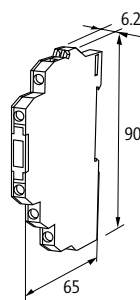
## Circuit diagram



Order Data	Art-No.	Art-No.
10 ms...0.1 s	3000-18502-0200010	3000-18512-0200010
10 ms...1 s	3000-18502-0200010	3000-18512-0200010
10 ms...10 s	3000-18502-0200010	3000-18512-0200010
10 ms...100 s	3000-18502-0200010	3000-18512-0200010

Input	
Input voltage	18...30 V DC
Control voltage	18...30 V DC
Output	
Switching voltage	Operating voltage - 0.2 V
Switching current per output	max. 100 mA
Min. load current	1 mA (short-circuit protected)
Switching frequency	max. 50 Hz
General data	
Test isolation voltage	no galvanic separation
Temperature range	-20...+60 °C
Mounting method	DIN-rail mountable (EN 60715)

## Dimension drawing



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## Notes

# ACTIVE INTERFACE TECHNOLOGY

## Timer

- Switch-on delay
- Switch-off delay
- Changeover contact
- Memory function

### MIRO 6.2 Timer

Relay output  
Screw terminals

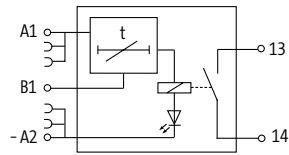


### MIRO 6.2 Timer

Relay output  
Spring clamp terminals



## Circuit diagram



## Order Data

	Art-No.	Art-No.
100 ms...1 s	3000-18503-0200012	3000-18513-0200013
100 ms...10 s	3000-18503-0200012	3000-18513-0200013
100 ms...100 s	3000-18503-0200012	3000-18513-0200013
100 ms...1000 s	3000-18503-0200012	3000-18513-0200013

## Switching capacity (EN 60947-5-1)

AC-12	6 A (24 V AC; 110 V AC; 230 V AC)
AC-15	3 A (24 V AC; 110 V AC; 230 V AC)
DC-13	1 A (24 V DC); 0.2 A (110 V DC); 0.1 A (230 V DC)

## Input

Input voltage	18...30 V DC
Control voltage	18...30 V DC

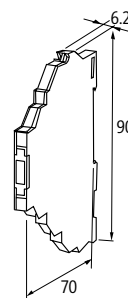
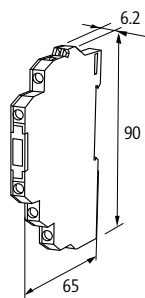
## Output

Switching voltage	max. 250 V AC/DC
Switching current per output	max. 6 A
Min. load current	10 mA
Switching frequency	max. 5 Hz
Contact material	Ag Sn O2
Energize/release/contact bounce time	19/15/1.5 ms

## General data

Mech./ elect. life	20.000.000 switching cycles/load dependent
Test isolation voltage	4 kV; safe separation (VDE 0106/ VDE 0160)
Temperature range	-20...+60 °C
Mounting method	DIN-rail mountable (EN 60715)

## Dimension drawing



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## Notes

# ACTIVE INTERFACE TECHNOLOGY

## Comparator modules

– with bridge system

### MAK 12.4

Input signal, voltage DC  
selectable via DIP switch  
Screw terminals

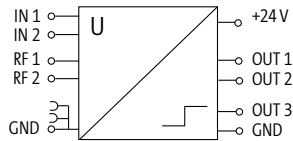


### MAK 12.4

Input signal, voltage DC  
selectable via DIP switch  
Spring clamp terminals



### Circuit diagram

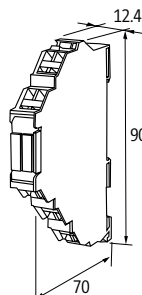
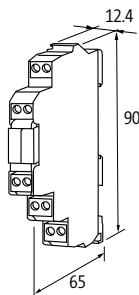


Order Data	Art-No.	Art-No.
24 V DC/0.7 A	44110	6644110

Technical Data	
Operating voltage	20...30 V DC, smoothed
Operating current	30 mA (idle load), max. 0.8 A (full load)
Time constant	approx. 10 ms
Input hysteresis	max. 0.5 % from end value, max. 150 mV
Input	
Input voltage	2 × 0...30 V DC (IN 1, IN 2)
Input resistor	100 kOhm
Output	
Number	3 transistor outputs
Output current	max. 0.7 A per channel, switched positive, short-circuit protected
General data	
Temperature range	0...+50 °C
Mounting method	DIN-rail mountable (EN 60715)

Description	
Functional description	The DC- or AC-voltage comparator serves for evaluating analog voltages, generated by pressure, temperature or other sensors. The analog input values are compared to internal or external reference voltages to over or underflow. Outputs will be switched, dependent on defined limits. Features: – 2 separate measuring channels (no galvanic separation), (only by comparator service) -2 operating modes (comparator/window discriminator) – adjustable reference voltage (internal/external) per channel – adjustable output (inverted/not inverted) per channel, (only by comparator service) – compact design (12.4 mm) – higher switched current at output – output state display through LED – Easy configuration of the module via DIP switch

### Dimension drawing



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### Notes

## Temperature converter

– for PT 100 sensors

### MTW 12.4

2-, 3-wire technology  
Screw terminals

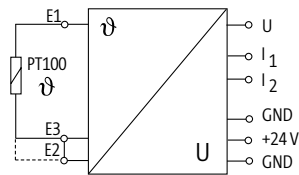


### MTW 12.4

2-, 3-wire technology  
Spring clamp terminals



### Circuit diagram



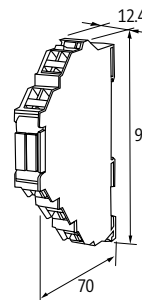
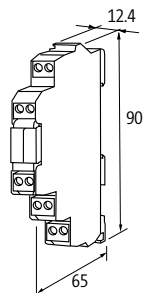
Order Data	Art-No.	Art-No.
INPUT: -50...+50 °C	44330	6644330
INPUT: -50...+150 °C	44331	6644331
INPUT: 0...100 °C	44332	6644332
INPUT: 0...200 °C	44334	6644334
INPUT: 0...600 °C	44336	6644336

Technical Data	
Operating voltage	24 V DC (18...30 V DC), smoothed
Operating current	max. 80 mA
Cable resistance (without PT100)	max. 100 Ohm (3-wire technology)
Output signals at 0...10 V DC	max. 25 mA, overload protected
Output signals at 4...20 V mA	max. 500 Ohm RL
Output signals at 0...20 mA	max. 500 Ohm RL
Tolerance	±1 % from end value
Temperature range	0...+60 °C

General data	
Mounting method	DIN-rail mountable (EN 60715)

Description	
Functional description	The Murrelektronik temperature converter module works in conjunction with a temperature sensor PT100 (IEC 751/EN 60751) and converts the temperature into a standard signal format of (0...10 V, 4...20 mA, 0...20 mA). The MTW modules supply a constant current to the PT100 resistor, which develops a variable voltage. This will be measured, linearized and converted to the output signal at the OUT terminals. All three signals can be used at the same time. The 2-wire technology allows short distances between the PT100 sensor and MTW module (< 5 m) to be covered. For longer distances the 3-wire technology has to be applied for compensating the cable resistance. This requires a 3rd cable (same length and type as the two measuring cables). The bridge between E2 and E3 has to be removed.

### Dimension drawing



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### Notes



# ACTIVE INTERFACE TECHNOLOGY

## Switches

– unmanaged

– RJ45

Approvals:  Listed

### Tree 6TX Eco

6 ports



### Tree 8TX Metal

8 ports

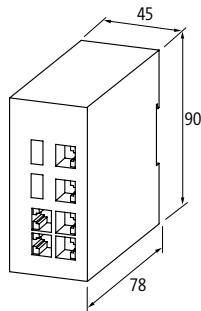


### Tree 6TX Metal

6 ports



Order Data	Art-No.	Art-No.	Art-No.
6 ports	58170		58172
8 ports		58171	
Connections			
Fieldbus	6 × RJ45	8 × RJ45	6 × RJ45
Supply System	Screw plug-in terminal: 0.2...1.5 mm <sup>2</sup>		
Technical Data			
Operating voltage	2 × 9...30 V DC, redundancy	2 × 9...48 V DC, redundancy	2 × 9...30 V DC, redundancy
Transfer rate	10/100 MBit/s full duplex		
Operating modes	Autocrossing Autonegotiation		
Diagnostic			
Communication status	via LED		
Monitoring - no voltage	yes		
General data			
Protection	IP20	IP50	
Housing	Black plastic	Metal black	
Temperature range	0...+60 °C (storage temperature -10...+70 °C)	-10...+70 °C (storage temperature -40...+85 °C)	
Mounting method	DIN-rail mountable TH35 (EN 60715)		
Dimension drawing			



## Brake rectifiers

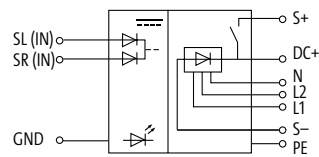
## Active controlled rectifier

Spring clamp terminals



Approvals: **us**

### Circuit diagram



### Order Data

24 V DC/0.8 A

### Art-No.

50001

### Input

Input voltage L1-N (230 V AC); L1-L2 (400 V AC); L1-L2 (480 V AC)

Input current max. 0.8 A

Control voltage 24 V DC

LED display LED (green)

Protection against reverse polarization yes

### Output

Output voltage 205 V DC (230 V AC); 180 V DC (400 V AC); 215 V DC (480 V AC)

Output current max. 0.75 A

Switching frequency max. 2.5 Hz

### General data

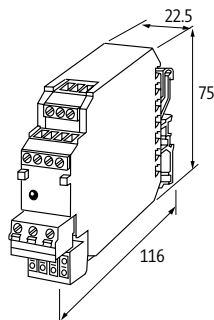
Temperature range 0...+55 °C (storage temperature -20...+60 °C), no condensation

Protection IP20

Mounting method DIN-rail mountable (EN 60715)

Connection Spring clamp terminals

### Dimension drawing



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### Notes

# ACTIVE INTERFACE TECHNOLOGY

## Demagnetizer

– with alarm contact

## Demagnetizer

Screw terminals



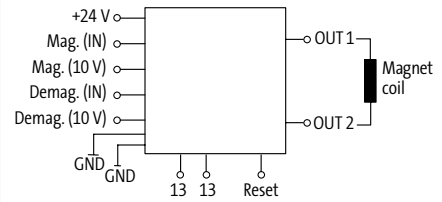
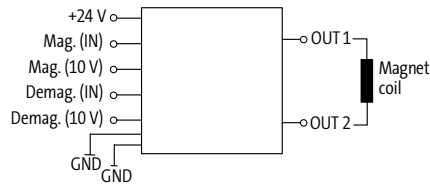
## Demagnetizer

Screw terminals

potential free alarm output 30 V AC/DC, 100 mA



### Circuit diagram



Order Data	Art-No.	Art-No.
24 V DC/40 mA	446140	446142

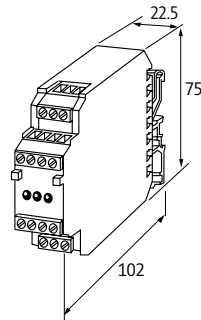
Technical Data		
Operating voltage	24 V DC (18...30 V DC)	
Operating current	approx. 40 mA	
LED display	LED (green)	
Protection against reverse polarization	yes	
Group alarm output	–	potential free alarm output 30 V AC/DC, 100 mA

Input		
Input resistor	approx. 10 kOhm	
Magnetization (digital)	safe OFF: max. 1V; safe ON: min. 5 V (LED yellow)	safe OFF: max. 1V; safe ON: min. 5 V (LED green)
Magnetization (analog)	0.8...8.8 V (0...100 %)	
Demagnetization (digital)	safe OFF: max. 1V; safe ON: min. 5 V (LED yellow)	
Demagnetization (analog)	0...10 V (44...55 %)	

Output		
Output voltage	24 V DC	
Output current	max. 1.5 A (short-circuit protected)	
PWM frequency	approx. 800 Hz	

General data		
Temperature range	-25...+50 °C (storage temperature -40...+80 °C)	
Protection	IP20	
Mounting method	DIN-rail mountable (EN 60715)	
Connection	Screw terminals	

### Dimension drawing




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### Notes

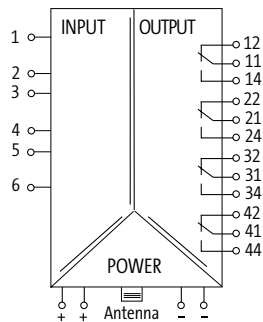
## Remote and Signalling Systems

## MIRO GSM



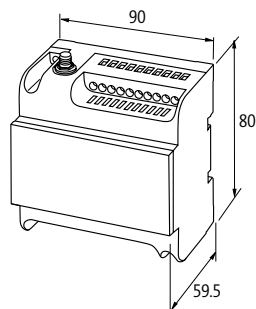
Approvals:  **UL** US  
Listed

### Circuit diagram



Order Data	Art-No.	Art-No.	Art-No.
DI6 DO4R - (Relay) 24 V DC	52530		
ADI6 DO4R (Relay) 24 V DC		52531	
DI6 DO4R - (Relay) 230 V AC			52532
Accessories			Art-No.
Stub antenna			52533
MIRO GSM Service Kit			52535
Input			
Connection voltage - current	12...48 V DC - 15 mA		110...240 V AC - 10 mA
Resolution (analog)	-	12 Bit	-
Input range (analog)	-	0...10 V DC	-
Input resistor (analog)	-	142 kOhm	-
Conversion time (analog)	-	max. 1 s	-
Output			
Switching voltage	max. 250 V AC/DC		
Switching current per output	max. 10 A		
Total current	max. 20 A		
Contact material	Ag Ni 90/10		
General data			
Mech./ elect. life	30.000.000 switching cycles/load dependent		
Protection	IP20		
Temperature range	-25...+55 °C (storage temperature -40...+85 °C)		
Connection	Screw terminals: max. 2.5 mm <sup>2</sup> (AWG 14)		
Mounting method	DIN-rail mountable (EN 60715) or screw fixing		

### Dimension drawing







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### Notes

For inductive loads we recommend EMC suppressors connected parallel to the coil

## ACTIVE INTERFACE TECHNOLOGY

Labeling accessories			Art-No.
	<b>ACS label plate KM 5</b> for self marking (9 × 20 mm)		7000-99001-000000
	<b>Label plate KM 4</b> 5 × 10 mm		90931
	<b>ACS label plate KM 6/18</b> for self marking with ADEMARK markers		7000-99003-000000
	<b>Label plate KWI 5/15</b> (88 pieces per plate)		90901
Wiring accessories			Art-No.
	<b>Potential plug link</b> max. 50 V/2 A	MIRO	90961
	<b>Potential rail blue</b> 10-pole, spacing 6.2 mm	MIRO 6.2 (screw terminals)	90975
	<b>Potential rail red</b> 40-pole, spacing 12 mm	RMM..., RMMD...	90971
	10-pole, spacing 6.2 mm	MIRO 6.2 (screw terminals)	90976
	<b>End caps for potential rail</b> blue	MIRO 6.2	90980
	red	RMM..., RMMD...	90982
	<b>Wire chain 16-pole</b> Connection cable left and right approx. 50 cm; bk; 1 mm <sup>2</sup>	MIRO (spring clamp terminals)	90977
	<b>MIRO GSM</b> Stub antenna		52533

Wiring accessories			Art-No.
	<p><b>MIRO GSM</b> External antenna Connection cable 5m</p>		52534
	<p><b>MIRO GSM Service Kit</b> Configuration CD USB/RS-232 converter Connection cable SUB-D9 (female/male)</p>		52535