



## GW32 Gateway

### Features

- Connection of touch panel
- Communication with software MPC<sup>net</sup> ProcessDesigner
- Integration in a control system via MODBUS in conjunction with the touch panel

### Description

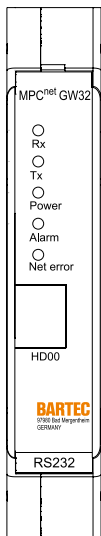
The GW32 gateway connects the MC32 modules, which operate independently of each other, into a complete system. It serves as an interface between the controller hardware and the MPC<sup>net</sup> ProcessDesigner software.

The PA00 touch panel also accesses the control system's parameters through the gateway. The physical connection is established by means of the RS232 interface.

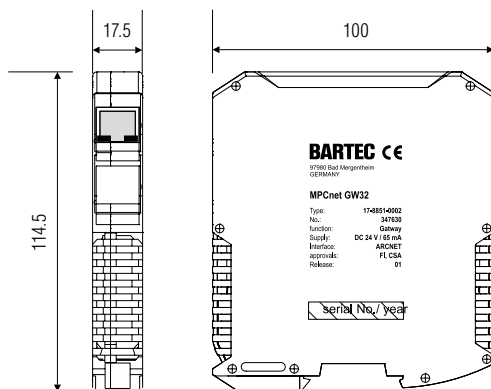
In conjunction with the PA00 touch panel, the GW32 also establishes communication between a higher-ranking control system and the MPC<sup>net</sup>. The PA00 touch panel serves as the interface here.

See the System Description for the Installation Instructions.

### Wiring diagram/terminal assignment



### Dimensions



### Technical data

#### Enclosure material

Polyamide PA

#### Protection class (EN 60529)

IP 20

#### Electrical connections

RJ-45 plug connectors, RS-232

#### Fastening onto mounting rail

TH 35-15 DIN EN 60715 (metal)

#### Dimensions (W x H x D)

17.5 mm x 100 mm x 114.5 mm

#### Weight

108 g

#### Storage and transport temperature

-30 °C to +70 °C

#### Operating temperature

0 °C to +60 °C

#### Degree of contamination

2

#### Electrical data

##### Interface

RS232 via RJ45 connectors

##### Voltage supply

DC 24 V through internal bus

##### Current consumption

65 mA

##### Displays

LEDs in the front of the enclosure:  
Operation voltage OK, alarm, network error,  
Data transfer, data receiving

### Order no.

MPC<sup>net</sup> GW32 Gateway

**17-8851-0002**

#### Accessories

MPC<sup>net</sup> PA00 touch panel

**17-8851-0003**

Technical data subject to change without notice.



## MC32 controller module

### Features

- Regulation of up to 32 heating circuits per module
- User-defined group alarms
- Number of heating circuits extendable at will

### Description

The MC32 controller module regulates and monitors up to 32 heating circuits. It flexibly accesses the individual I/O modules by means of the bus system integrated in the DIN rail.

By inserting more MC32 modules into the bus, the number of heating circuits to be monitored can be increased at will. Two setpoint values can be assigned to each heating circuit and changed by means of an external switching contact.

The MC32 monitors parameters, such as temperature, overheating, load current, residual current, and external status signals such as rccb auxiliary contacts, limiter alarms, manual switches etc. for each of the 32 heating circuits individually

Up to three temperature sensors per circuit are monitored, whereby the controlled variable is fixed in relation to one sensor. The other sensors serve to monitor a high and a low alarm value.

Individual upper and lower limits can be assigned to each monitored value and individual alarms emitted by means of the MPC<sup>net</sup> control system's digital outputs.

In addition, all individual alarms can be emitted through the MC32 module's group alarm contact to an indicator light or suchlike. The bus status signals and alarms are also indicated by means of LEDs.

Connecting the GW32 gateway and PA00 touch-panel allows a transfer not only of the setpoint and actual values but also of all alarms into a higher ranking control. All of the control system's parameters and alarms can be altered or acknowledged from the control centre.

See System Description for the Installation Instructions.

### ➔ Technical data

#### Enclosure material

Polyamide PA

#### Protection class (EN 60529)

IP 20

#### Electrical connections

plug-in screw-type terminal, 3-pole terminal range 0.2 to 2.5 mm<sup>2</sup>  
RJ45 jack

#### Fastening to mounting rail

TH 35-15 DIN EN 60715 (metal)

#### Dimensions (W x H x D)

17.5 mm x 100 mm x 114.5 mm

#### Weight

108 g

#### Storage and transport temperature

-30 °C to +70 °C

#### Operating temperature

0 °C to +60 °C

#### Degree of contamination

2

### ■ Electrical data

#### Voltage supply

DC 24 V by means of an internal bus

#### Current consumption

65 mA

#### Displays

LEDs in the front of the enclosure:  
Bus status, TRIAC status, alarm, power

### ■ Bus connection to I/O modules

#### Configurable inputs per heating circuit

##### Temperature measurements

each 1 x temperature, controller, limiter and alarm sensor

##### Digital inputs

Setpoint selection, alarm suppression, Alarm contact monitoring by contactor, circuit-breaker and residual-current protective device, Heating output reduction (25 %, 50 %, 75 %), Heating switch-off, limiter monitoring

##### Current measurement

Load current (1ph and 3ph)  
Residual current

#### Configurable outputs per heating circuit

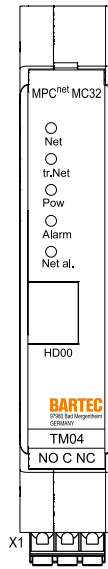
##### Control outputs

Digital output for activation of power contactor or direct activation of the heating circuit through TRIAC

##### Alarm outputs

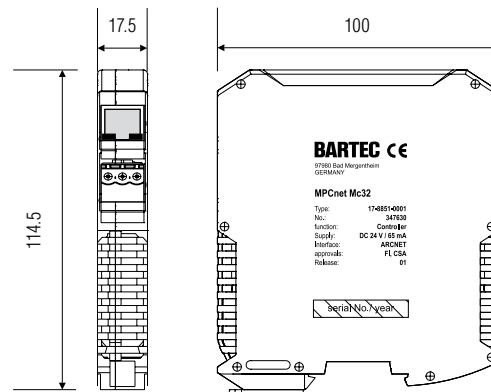
Overheating  
Triggering of limiter  
Group alarm  
Residual-current alarm

Wiring diagram/terminal assignment



Terminal block	Terminal	Description
X1	NO	normally open contact
	C	common
	NC	normally closed contact

Dimensions (in mm)



➔ **Order no.**  
**MPC<sup>net</sup> MC32 controller module**  
**17-8851-0001**

Technical data subject to change without notice.



## MPC<sup>net</sup> 8TI/16TI

### Features

- Up to 16 temperature inputs
- 3-wire Pt100
- Galvanic isolation between the inputs and the system
- Open-circuit/short-circuit detection

### Description

The 8TI and 16TI temperature registering modules are suitable for the direct connection of 3-wire Pt100 temperature sensors.

They are operated and supplied by means of the MC32 controller. The internal, galvanically isolated bus connection is established by simply joining the modules.

The modules feature open-circuit/short-circuit detection. LEDs display the bus status messages and fault signals.

See System Description for the Installation Instructions.

### ➔ Technical data

#### Enclosure material

Polyamide PA

#### Protection class (EN 60529)

IP 20

#### Electrical connections

plug-in screw-type terminal, 3-pole  
Terminal range 0.2 to 2.5 mm<sup>2</sup> numbered

#### Attachment to mounting rail

TH 35-15 DIN EN 60715 (metal)

#### Dimensions (W x H x D)

8TI 54.0 mm x 100 mm x 114.5 mm

16TI 88.0 mm x 100 mm x 114.5 mm

#### Weight

8TI 274 g

16TI 398 g

#### Storage and transport temperature

-30 °C to +70 °C

#### Operating temperature

0 °C to +60 °C

#### Degree of contamination

2

#### ■ Electrical data

##### Number of channels

8TI 8 inputs

16TI 16 inputs

for 3-wire Pt100 in each case

##### Measuring range

-49 °C to +650 °C

##### Galvanic isolation

between inputs and internal bus

##### Line break/short circuit

per channel

automatic reporting by means of controller

##### Voltage supply

DC 24 V by means of an internal bus

##### Current consumption

8TI 91 mA

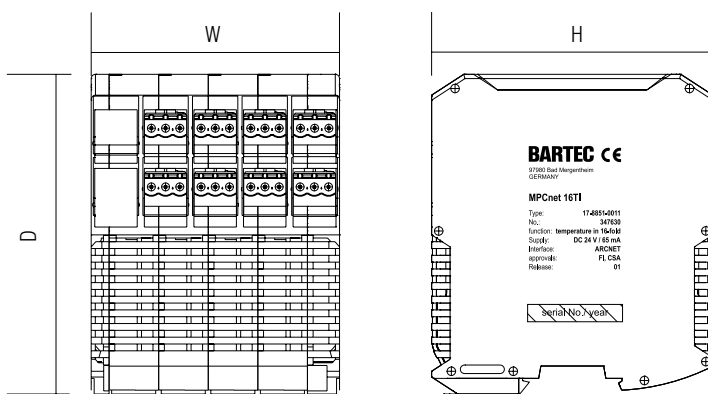
16TI 117 mA

##### Displays

LEDs in the front of the enclosure:

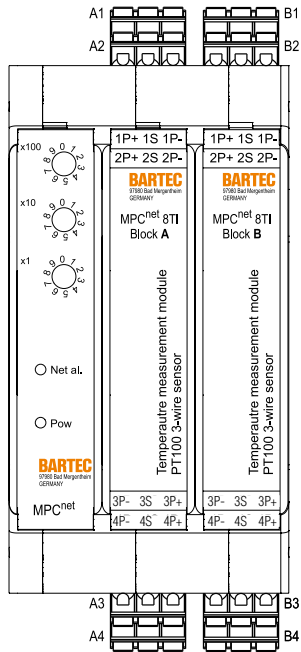
Status Net al. Pow.

### Dimensions (in mm)



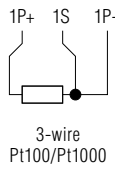
	W	H	D
8 TI	54.0	100	114.5
16 TI	88.0	100	114.5

**Wiring diagram/terminal assignment**



Terminal block	Terminal	Description	Terminal block	Terminal	Description
A1	1P+	Supply +	B1	1P+	Supply +
	1S	Signal		1S	Signal
	1P-	Supply -		1P-	Supply -
A2	2P+	Supply +	B2	2P+	Supply +
	2S	Signal		2S	Signal
	2P-	Supply -		2P-	Supply -
A3	3P-	Supply -	B3	3P-	Supply -
	3S	Signal		3S	Signal
	3P+	Supply +		3P+	Supply +
A4	4P-	Supply -	B4	4P-	Supply -
	4S	Signal		4S	Signal
	4P+	Supply +		4P+	Supply +

**Example of connection**

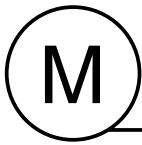


➔ **Order no.**  
Remote MPC<sup>net</sup> 8TI I/O module  
**17-8851-0010**

Remote MPC<sup>net</sup> 16TI I/O module  
**17-8851-0011**

**Accessories**  
Pt100Ex 27-71-13..

Technical data subject to change without notice.



### MPCnet 8DO/16DO

### Features

- 8 and 16 floating N/O contacts
- Galvanic isolation between the inputs and the system
- Activation of power contactors/SSRs
- Output of alarms

### Description

The 8DO and 16DO output modules are suitable for indirectly switching heating cables by means of a power contactor.

In addition, the individually adjustable alarms can be outputted through the digital outputs.

They are operated and supplied with the aid of the MC32 controller. The internal, galvanically isolated bus connection is established by simply joining the modules together.

LEDs display the bus status signals and the status signals per channel.

See System Description for Installation Instructions.

### Technical data

#### Enclosure material

Polyamide PA

#### Protection class (EN 60529)

IP 20

#### Electrical connections

plug-in screw-type terminal, 3-pole terminal range 0.2 to 2.5 mm<sup>2</sup> numbered

#### Attachment to mounting rail

TH 35-15 DIN EN 60715 (metal)

#### Dimensions (W x H x D)

8DO 41.0 mm x 100 mm x 114.5 mm

16DO 63.5 mm x 100 mm x 114.5 mm

#### Weight

8DO 253 g

16DO 368 g

#### Storage and transport temperature

-40 °C to +70 °C

#### Operating temperature

-40 °C to +46 °C

#### Degree of contamination

2

### Electrical data

#### Number of Channels

8DO 8 outputs

16DO 16 outputs

floating contacts in each case

#### Contact rating

direct switching 4 A - AC 1, 250 V

by means of

power contactor 0.5 A - AC 15, 230 V

#### Voltage supply

DC 24 V through internal bus

#### Current consumption

8DO max. 169 mA

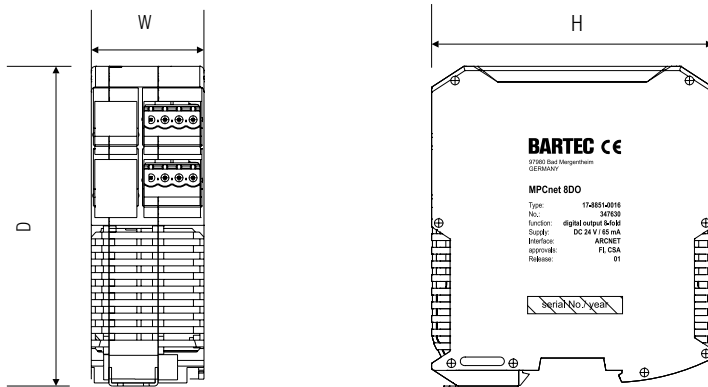
16DO max. 273 mA

### Displays

LEDs in the front of the enclosure

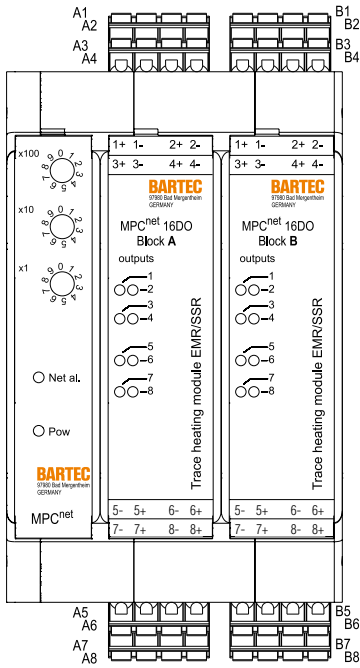
Status Net al. Pow. Output status

### Dimensions (in mm)



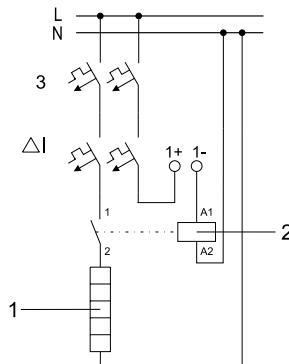
	W	H	D
8 DO	41,0	100	114,5
16 DO	63,5	100	114,5

**Wiring diagram/terminal assignment**



Terminal block	Terminal	Description	Terminal block	Terminal	Description
A1	1+	load/relay +	B1	1+	load/relay +
	1-	load/relay -		1-	load/relay -
A2	2+	load/relay +	B2	2+	load/relay +
	2-	load/relay -		2-	load/relay -
A3	3+	load/relay +	B3	3+	load/relay +
	3-	load/relay -		3-	load/relay -
A4	4+	load/relay +	B4	4+	load/relay +
	4-	load/relay -		4-	load/relay -
A5	5-	load/relay -	B5	5-	load/relay -
	5+	load/relay +		5+	load/relay +
A6	6-	load/relay -	B6	6-	load/relay -
	6+	load/relay +		6+	load/relay +
A7	7-	load/relay -	B7	7-	load/relay -
	7+	load/relay +		7+	load/relay +
A8	8-	load/relay -	B8	8-	load/relay -
	8+	load/relay +		8+	load/relay +

**Example of connection**



- 1 Heating tape
- 2 Power contactor, 0.5 A to AC 15, 250 V
- 3 Power circuit breaker, C characteristics



**Order no.**  
**Remote I/O module MPC<sup>net</sup> 8DO**  
**17-8851-0016**

**Remote I/O module MPC<sup>net</sup> 16DO**  
**17-8851-0017**

Technical data subject to change without notice.



## MPC<sup>net</sup> 8DI/16DI

### Features

- Up to 16 inputs
- Galvanic isolation between the inputs and the system
- Monitoring of safety temperature limiters
- Monitoring of rcbs, contactors etc.

### Description

The 8DI and 16DI digital input modules register and monitor diverse status signals. The inputs are floating, and this means that non-floating contacts are required for transmitting signals.

They are operated and supplied through the MC32 controller.

The internal, galvanically isolated bus connection is established by simply joining the modules together.

LEDs display the bus status messages and other status messages per channel.

See the System Description for the Installation Instructions.

### ➔ Technical data

#### Enclosure material

Polyamide PA

#### Protection class (EN 60529)

IP 20

#### Electrical connections

plug-in screw-type terminal, 3-pole  
Terminal range 0.2 to 2.5 mm<sup>2</sup> numbered

#### Attachment to mounting rail

TH 35-15 DIN EN 60715 (metal)

#### Dimensions (W x H x D)

8DI 41.0 mm x 100 mm x 114.5 mm  
16DI 63.5 mm x 100 mm x 114.5 mm

#### Weight

8DI 220 g  
16DI 304 g

#### Storage and transport temperature

-40 °C to +70 °C

#### Operating temperature

-40 °C to +60 °C

#### Degree of contamination

2

### ■ Electrical data

#### Number of channels

8DI 8 inputs  
16DI 16 inputs  
each for connecting non-floating auxiliary contacts for rcbs, contactors, limiters, buttons etc.

#### Input loading capability

AC/DC 22 to 280 V, CAT II

#### Galvanic isolation

between inputs and internal bus

#### Voltage supply

DC 24 V through internal bus

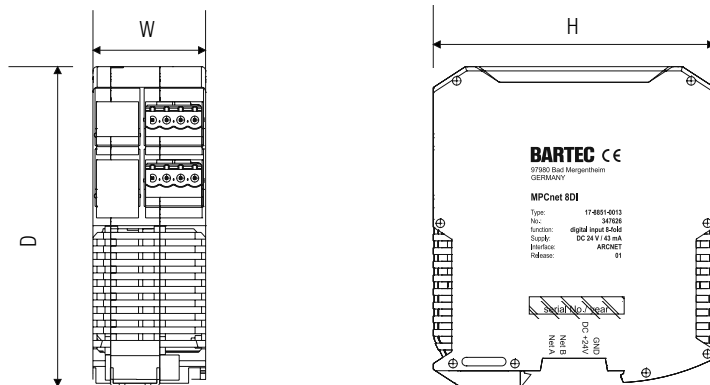
#### Current consumption

8DI 43 mA  
16DI 65 mA

#### Displays

LEDs in the front of the enclosure:  
Status Net al. Pow. Input status

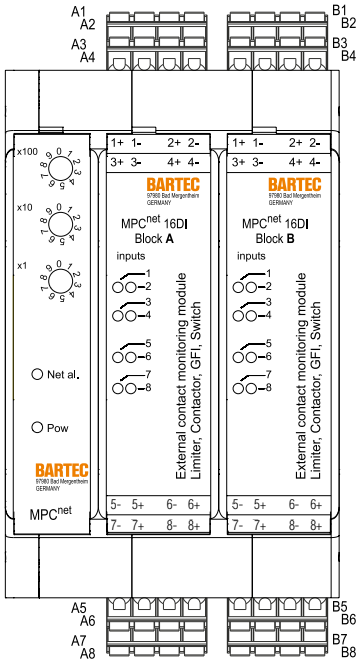
### Dimensions (in mm)



	W	H	D
8 DI	41.0	110	114.5
16 DI	63.5	110	114.5

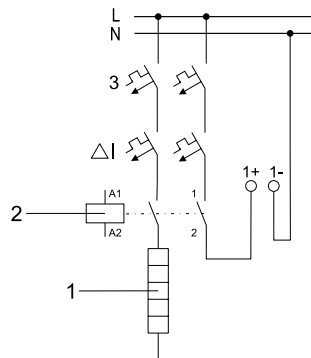


**Wiring diagram/terminal assignment**



Terminal block	Terminal	Description	Terminal block	Terminal	Description
A1	1+	L/signal +	B1	1+	L/signal +
	1-	N/signal -		1-	N/signal -
A2	2+	L/signal +	B2	2+	L/signal +
	2-	N/signal -		2-	N/signal -
A3	3+	L/signal +	B3	3+	L/signal +
	3-	N/signal -		3-	N/signal -
A4	4+	L/signal +	B4	4+	L/signal +
	4-	N/signal -		4-	N/signal -
A5	5-	L/signal -	B5	5-	L/signal -
	5+	N/signal +		5+	N/signal +
A6	6-	L/signal -	B6	6-	L/signal -
	6+	N/signal +		6+	N/signal +
A7	7-	L/signal -	B7	7-	L/signal -
	7+	N/signal +		7+	N/signal +
A8	8-	L/signal -	B8	8-	L/signal -
	8+	N/signal +		8+	N/signal +

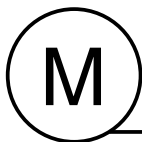
**Example of connection**



- 1 Heating tape
- 2 Power contactor, 2 x N/C contacts
- 3 Capacity circuit breaker, C characteristics

➔ **Order no.**  
**Remote I/O module MPC<sup>net</sup> 8DI**  
**17-8851-0013**  
**Remote I/O module MPC<sup>net</sup> 16DI**  
**17-8851-0014**

Technical data subject to change without notice.



## MPC<sup>net</sup> 8CI/16CI

### Features

- Up to 16 inputs
- Measurement of load or residual current up to 100 A
- Galvanic isolation between the inputs and the system
- Monitoring of up to three phases

### Description

The 8CI and 16CI current measuring modules register load and residual currents in conjunction with the LoaC and LeaC measuring transducers. Up to three phases and the total current can be monitored for each heating circuit. The individual inputs are assigned and configured either by means of the MPC<sup>net</sup> ProcessDesigner software or by the touch panel.

The modules are operated and supplied through the MC32 controller. The internal, galvanically isolated bus connection is established by simply joining the modules together.

See the System Description for the Installation Instructions.

### Technical data

#### Enclosure material

Polyamide PA

#### Protection class (EN 60529)

IP 20

#### Electrical connections

plug-in screw-type terminal, 3-pole terminal range 0.2 to 2.5 mm<sup>2</sup> numbered

#### Fastened to mounting rail

TH 35-15 DIN EN 60715 (metal)

#### Dimensions (W x H x D)

8CI 41.0 mm x 110 mm x 114.5 mm  
 16CI 63.5 mm x 110 mm x 114.5 mm

#### Weight

8CI 274 g  
 16CI 398 g

#### Storage and transport temperature

-30 °C to +70 °C

#### Operating temperature

0 °C to +60 °C

#### Degree of contamination

2

### Electrical data

#### Number of channels

8CI 8 inputs  
 16CI 16 inputs  
 each for LoaC and LeaC measuring transducers

#### Measuring range

LoaC 0 to 70 A  
 LeaC 0 to 700 mA

#### Galvanic isolation

between inputs and internal bus

#### Voltage supply

DC 24 V through internal bus

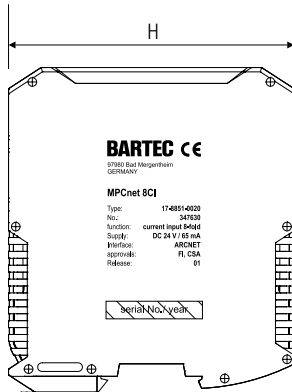
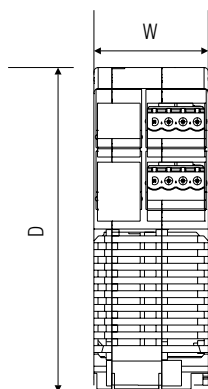
#### Current consumption

8CI 91 mA  
 16CI 117 mA

#### Displays

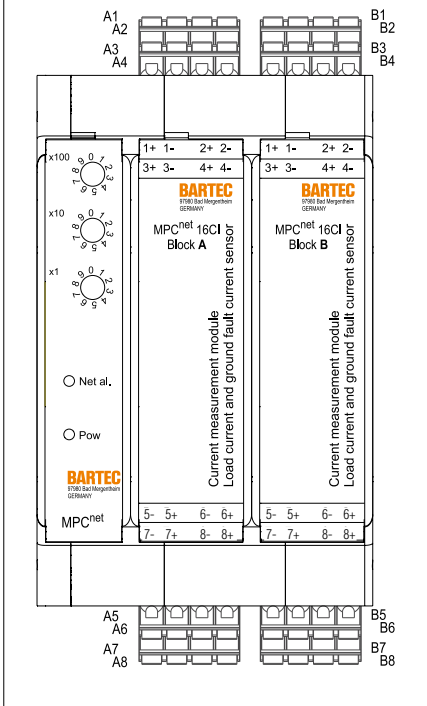
LEDs in The front of the enclosure:  
Status Net al. Pow.

### Dimensions (in mm)



	W	H	D
8 CI	41.0	110	114.5
16 CI	63.5	110	114.5

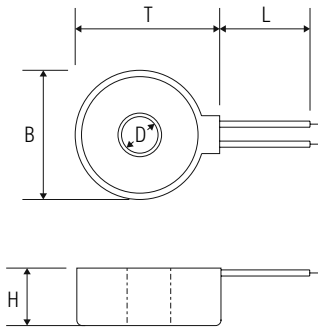
**Wiring diagram/terminal assignment**



Terminal block	Terminal	Description
A1	1+	current transformer +
	1-	current transformer -
A2	2+	current transformer +
	2-	current transformer -
A3	3+	current transformer +
	3-	current transformer -
A4	4+	current transformer +
	4-	current transformer -
A5	5-	current transformer -
	5+	current transformer +
A6	6-	current transformer -
	6+	current transformer +
A7	7-	current transformer -
	7+	current transformer +
A8	8-	current transformer -
	8+	current transformer +

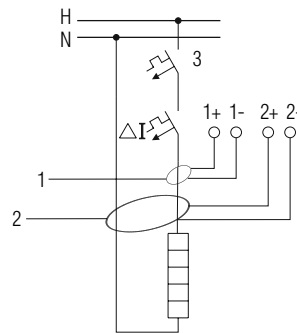
Terminal block	Terminal	Description
B1	1+	current transformer +
	1-	current transformer -
B2	2+	current transformer +
	2-	current transformer -
B3	3+	current transformer +
	3-	current transformer -
B4	4+	current transformer +
	4-	current transformer -
B5	5-	current transformer -
	5+	current transformer +
B6	6-	current transformer -
	6+	current transformer +
B7	7-	current transformer -
	7+	current transformer +
B8	8-	current transformer -
	8+	current transformer +

**Accessories**



	B	H	T	L
LeaC	30.4	9	33.4	250
LoaC	23.6	11	26.8	250

**Example of connection**



- 1 Load current transformer LoaC
- 2 Total current transformer LeaC
- 3 Power circuit breaker, C characteristics

- ➔ **Order no.**  
**Remote I/O modul MPC<sup>net</sup> 8CI**  
**17-8851-0020**  
**Remote I/O modul MPC<sup>net</sup> 16CI**  
**17-8851-0021**  
**Accessories**  
**MPC<sup>net</sup>**  
**LoaC load current transformer**  
**17-8851-0023**  
**MPC<sup>net</sup>**  
**LeaC total current transformer**  
**17-8851-0024**

Technical data subject to change without notice.



**MPC<sup>net</sup> TM04/TS04**

**Features**

- Integration of the TR16, TR36 and TR38 modules into the MPC<sup>net</sup>
- Up to 4 power modules for each communication module
- Easily extendable by adding more modules

**Description**

The TR16, TR26 and TR38 power modules are integrated into the MPC<sup>net</sup> network architecture by means of the TM04 and TS04 communication modules, whereby up to 4 power modules can be connected to each communication module.

The communication between the individual power modules and the MC32 controller is established by means of the TM04 master module. By inserting more TS04 communication modules into the bus, the number of connectable power modules can be extended to 32.

See System Description for the Installation Instructions.

**➔ Technical data**

**Enclosure material**

Polyamide PA

**Protection class (EN 60529)**

IP 20

**Electrical connections**

RJ-45 connectors, RS-485

**Fastening to mounting rail**

TH 35-15 DIN EN 60715 (metal)

**Dimensions (W x H x D)**

17.5 mm x 100 mm x 114.5 mm

**Weight**

148 g

**Storage and transport temperature**

-40 °C to +70 °C

**Operating temperature**

-40 °C to +60 °C

**Degree of contamination**

2

**■ Electrical data**

**Total number of communication modules**

8 modules

**Total number of power modules**

32 modules

**Connection power modules**

via 8-pole RJ-45 plug-in connector

**Connection of TM04 and TS04 modules**

via bus connectors integrated into the DIN rail

**Voltage supply**

DC 24 V by means of an internal bus

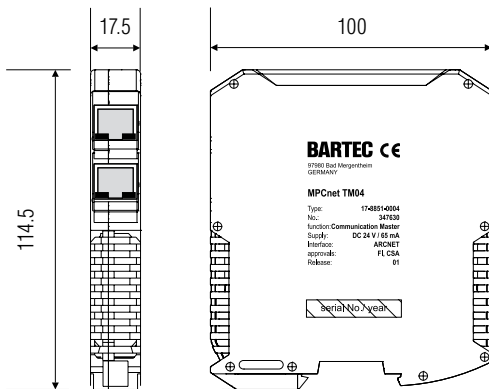
**Current consumption**

65 mA

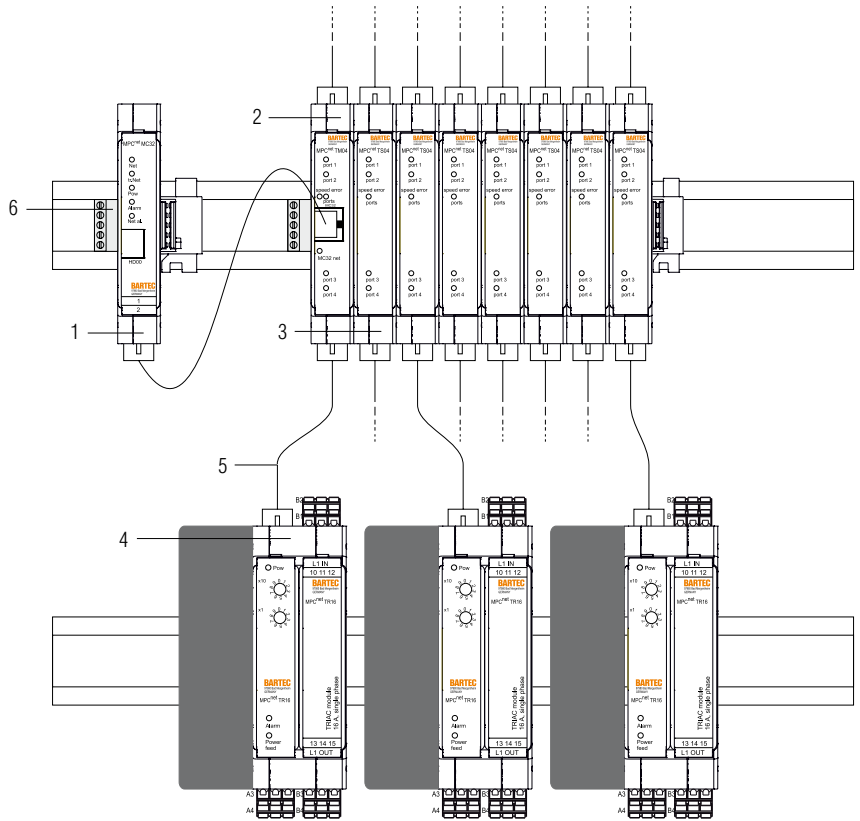
**Displays**

LEDs in the front of the enclosure:  
 TM04: Port status, error, MC32 error  
 TS04: Port status, error

**Dimensions (in mm)**



**Example of connections**



- 1 MC32 controller
- 2 TM04 master module
- 3 TS04 slave module
- 4 TR16/36/38 power module
- 5 Ethernet cable
- 6 Bus connector

**➔ Order no.**  
**MPC<sup>net</sup> communication master module**  
**17-8851-0004**

**MPC<sup>net</sup> communication slave module**  
**17-8851-0005**

Technical data subject to change without notice.



MPC<sup>net</sup> TR16/TR36

Features

- Temperature monitoring and power setpoint adjustment in one module
- Measurement of load or residual current up to 16 A
- Power setpoint adjustment 1- and 3-phase
- Recording of up to two temperatures

Description

The TR16 and TR36 power modules combine the functions of all MPC<sup>net</sup> I/O modules in one single module. Each module has two Pt100 inputs and digital inputs for monitoring RCCBs and limiters. For each heating circuit the heating power can be adjusted steplessly between 10 % and 100 % for up to three phases, whereby the load and total current are monitored.

The modules are operated and supplied via the TM04 or TS04 power module controllers. The set point value is determined by the MC32 controller.

The internal, galvanically isolated bus connection is established by simply joining the modules together by means of RJ-45 plug connectors.

➔ Technical data

Enclosure material

Polyamide PA

Protection class (EN 60529)

IP 20

Electrical connections

plug-in screw-type terminals, 3-pole terminal range 0.2 to 2.5 mm<sup>2</sup> numbered plug connectors RJ-45, RS485

Fastening onto mounting rail

TH 35-15 DIN EN 60715 (metal)

Abmessungen (W x H x D)

TR16	62.5 mm x 110 mm x 114.5 mm
TR36	126 mm x 110 mm x 114.5 mm

Masse

TR16	410 g
TR36	775 g

Lager- und Transporttemperatur

-30 °C bis +70 °C

Betriebstemperatur

0 °C bis +45 °C

Verschmutzungsgrad

2

■ Electrical data

Number of channels

TR16	1 x L (1-phase)
TR36	1 x L1, 1 x L2, 1 x L3 each AC 230 V/16 A

Inputs

2 x Pt100 (controllers and limiters)  
2 x digital input  
(RCCB and limiter monitoring)  
Load input L1, L2, L3 and N

Galvanic isolation

between inputs and internal bus

Voltage supply

DC 24 V through RJ45 cable, RS485

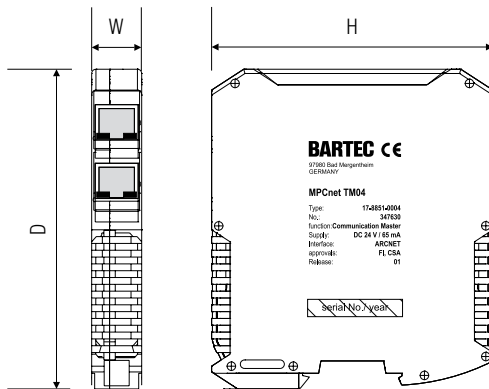
Current consumption

TR16	91 mA
TR36	91 mA

Displays

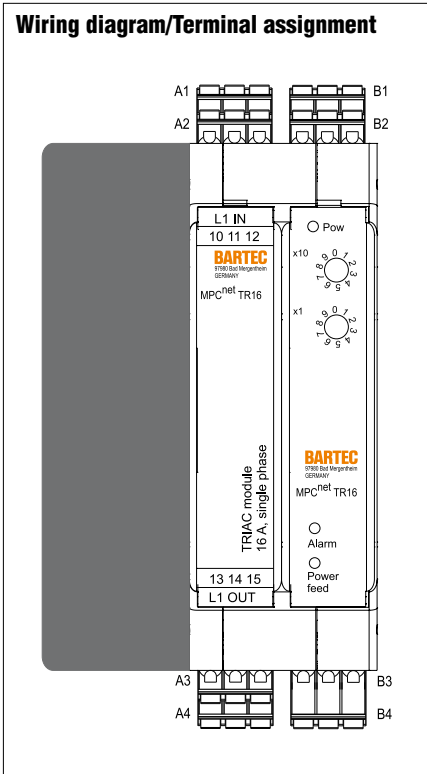
LEDs in the front of enclosure:  
Status, net alarm, power

Dimensions (in mm)



	W	H	D
TR16	62.5	110	114.5
TR36	126	110	114.5

**Wiring diagram/ Terminal assignment**



Terminal block	Terminal	Description	Terminal block	Terminal	Description
A1 (C1/D1 in TR36)	L1 (2/3) IN	Supply L	B1 (TC)	1	Supply +
	L1 (2/3) IN	Supply L		2	Signal
	L1 (2/3) IN	Supply L		3	Supply -
A2	10	N	B2 (TL)	4	Supply +
	11	Supply +		5	Signal
	12	not assigned		6	Supply -
A3	13	Limiter monitoring	B3	RJ45	Connection of TM04
	14	Limiter monitoring			
	15	Limiter monitoring			
A4 (C4/D4 in TR36)	L1 (2/3) OUT	eating cable L	B4	7	Connection of FI
	L1 (2/3) OUT	eating cable L		8	Connection of FI
	L1 (2/3) OUT	eating cable L		9	not assigned

**➔ Order no.**

**MPC<sup>net</sup> TR16 power module  
17-8851-0006**

**MPC<sup>net</sup> TR36 power module  
17-8851-0007**

Technical data subject to change without notice.