

TMU-PO Touch Module Universal Priority Operation

Application

The TMU-PO is a touch module for local priority control and display of the operation/malfunction messages of the units and actuators in building services (BTA).

Configuration of user-specific function groups.

A TMU-PO and a BMD1204-PO or BMA0804-PO form a unit and fulfill the functionality of a local override and indication device (LO and ID) according to DIN EN ISO 16484-2.

The TMU-PO with the BMD1204-PO for applications where a maximum of 12 binary inputs and 4 binary outputs are used.

The TMU-PO with the BMA0804-PO for applications where a maximum of 8 analog inputs and 4 analog outputs are used.

In addition, a TMC-PO can be connected as a central malfunction message, acknowledgement and release module.



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Important Information on Product Safety

Safety instructions

This document contains information on installing and commissioning the product “TMU-PO”. Each person who carries out work on this product must have read and understood this document. If you have any questions that are not resolved by this document, you can obtain further information from the supplier or manufacturer.

If the product is not used in accordance with this document, the protection provided could be impaired.

The applicable regulations must be observed when installing and using the devices. Within the EU, these include regulations regarding occupational safety and accident prevention as well as those from the VDE (German Association for Electrical, Electronic & Information Technologies). If the device is used outside of the EU, it is the responsibility of the plant engineer or operator to comply with local regulations.

Mounting, installation and commissioning work on the devices may only be carried out by qualified technicians. Qualified technicians are persons who are familiar with the described product and who can assess given tasks and recognize possible dangers based on their technical training, knowledge and experience, as well as their knowledge of the applicable regulations.

Symbol meanings



WARNING

Indicates a hazard of medium risk which can result in death or serious bodily injury if not avoided.



CAUTION

Indicates a hazard of low risk which can result in minor or medium bodily injury if not avoided.



CAUTION

Indicates a hazard which can result in material damage or malfunctions if not avoided.



NOTE

Indicates additional information that can simplify working with the product.

Notes on disposal

In accordance with the applicable laws and directives of the European Union countries, the product should not be disposed of with household waste. This ensures environmental protection and sustainable recycling or raw materials.

Commercial users should contact their supplier and observe the conditions of the purchase agreement. This device may not be disposed of together with other commercial waste.

The local and currently applicable laws must be observed.



Item

TMU-PO Touch Module Universal Priority Operation

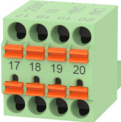
Technical Data

Nominal voltage	DC 12..24 V $\pm$ 10%; 2.0 W Power is supplied via the LO and ID bus interface from the BMD1204-PO or BMA0804-PO
Interfaces	■ LO and ID bus, 200 m PtP (point to point) connection to the input-output module BMD1204-PO or BMA0804-PO ■ LO and ID backbone, 200 m PtP connection to Touch Module Central TMC-PO
Displays	Two standard 2.4" TFT displays (240x320 pixels)
Housing	Plastic housing
Level of contamination	2
Rated impulse voltage	800 V
Method of operation	Type 1
Degree of protection	IP54
Ambient temperature	0..55 °C
Ambient humidity	20..80% r.h.; non-condensing
Mounting	Control cabinet door installation
Weight	0.13 kg
Dimensions	WxHxD: 50.2 x 135.4 x 75.8 mm

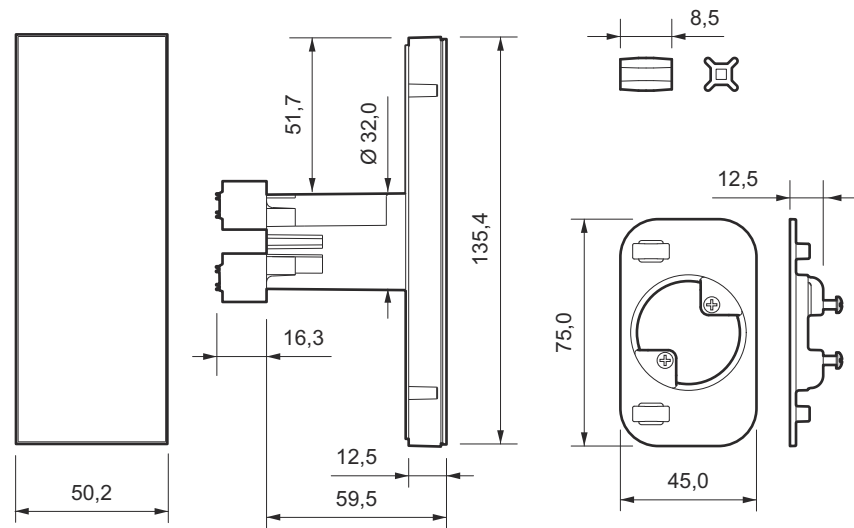


Connection clamps

- Spring-loaded terminals
- Twisting two conductors is not permitted, twin wire-end ferrules can be used

	Bus terminals  Terminals 7..10 and 17..20
Single-wire conductor Conductor cross-section: Stripping:	0.5..1.0 mm ² 10 mm
Multiwire conductor Conductor cross-section: Stripping:	0.5..1.0 mm ² 10 mm
Multi-wire conductor with wire end sleeve and plastic collar Conductor cross-section: Wire end sleeve length:	0.5..1.0 mm ² 10 mm
Multi-wire conductor with wire end sleeve without plastic collar Conductor cross-section: Wire end sleeve length:	0.5..1.0 mm ² 10 mm
Required crimping	Square crimping

Dimensions

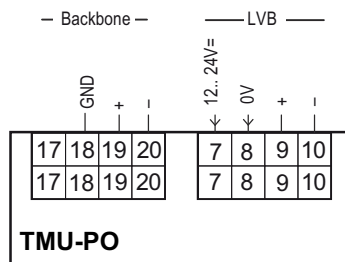




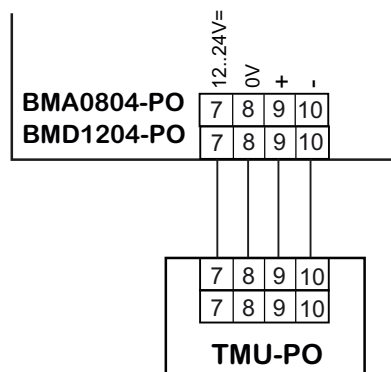
Accessories (not included in delivery)

TMB-PO	Dummy module cover for closing empty slots in the adaptor plate or the control cabinet door
Z851	Adaptor plate for KA 19" rack-mounted frame for installing four LO and ID modules
ADRA070-PO	Complete adapter frame for TPC070 and 4x TMx-PO

Connection



Connection BMD1204-PO or BMA0804-PO

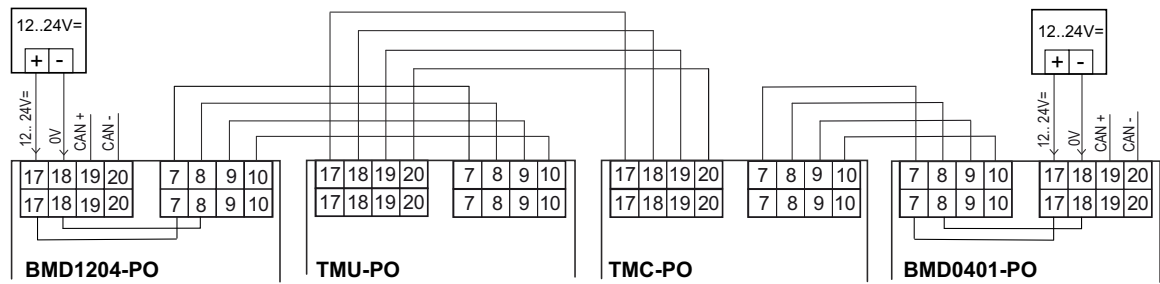




Product Description

TMU-PO

System overview LO and ID



CAUTION

Only one TMC-PO module and a maximum of 62 TMU-PO modules may be connected to the LO and ID backbone.

Only one TMU-PO module may be connected to a BMD1204-PO or BMA0804-PO.

CAUTION

At the end of the LO and ID backbone (most remote point), a terminating resistor of approximately 180 ohms must be installed between the two data lines (+ and -) terminal "19" and terminal "20". The terminating resistor is supplied with the TMC-PO module as an accessory.





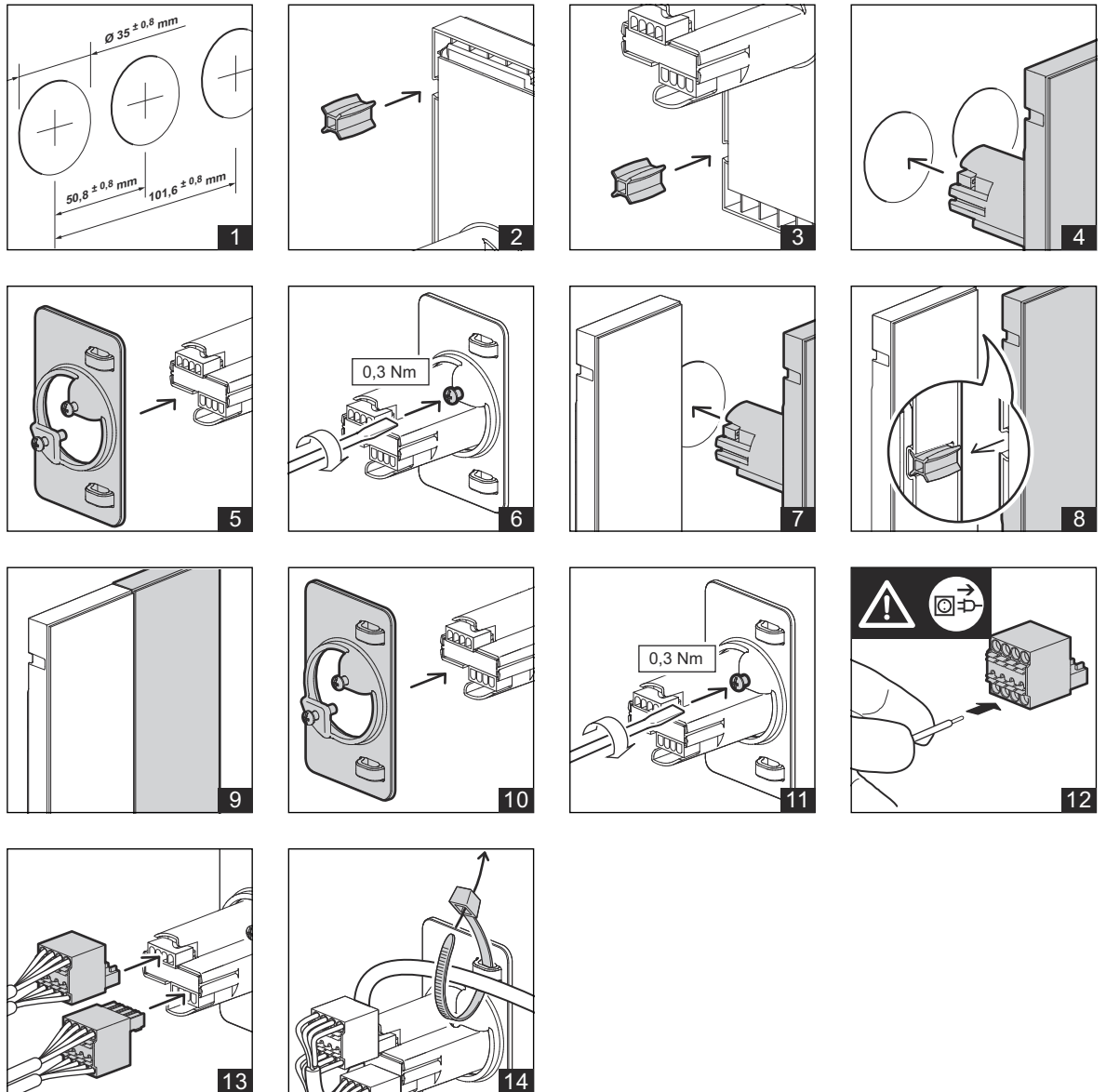
Mounting



WARNING

Danger of death by electrocution.

Mount or remove only when power is switched off.





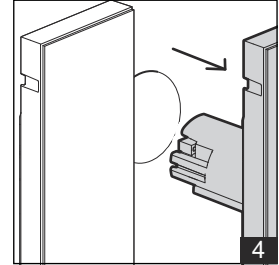
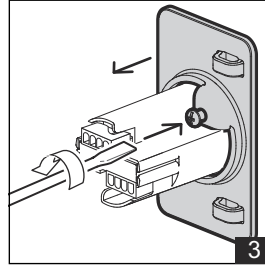
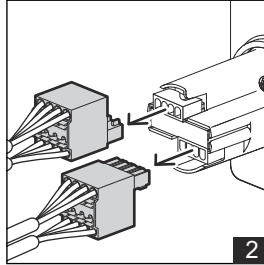
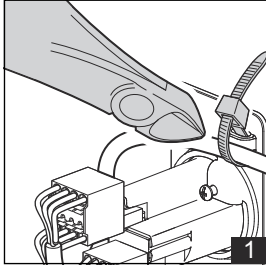
Removal



WARNING

Danger of death by electrocution.

Mount or remove only when power is switched off.





Operation and display icons

The control and display icons in the touch display are configured via software.

User-specific function groups are available for this purpose.

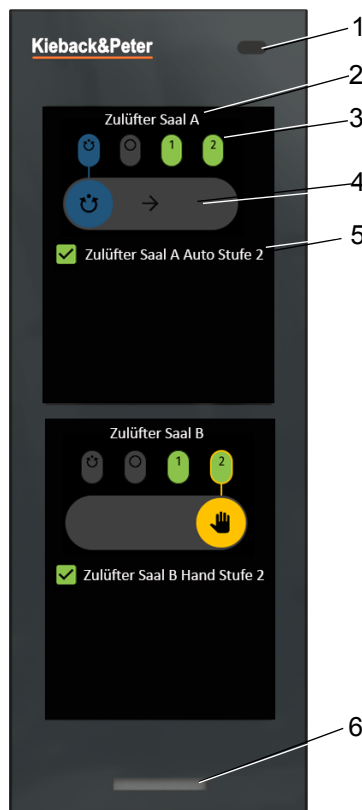
With the PS4000 planning system the appropriate function group for the respective TMU-PO is selected and configured when assigning an input/output module.

The operation is intuitive, as you know it from the operation of a smartphone.

The setting of the operating mode manual/automatic or 0..100/automatic mode is done with the sliders by tapping, touching and holding, dragging or releasing on the touch display.

- ▶ Touch and hold the slider icon
 - ▶ Drag the slider icon to the desired operating mode and then release it
- Display of the aggregate status as icon or position display 0..100

- with binary function group



- (1) Proximity sensor
- (2) Display text (system designation)
- (3) Aggregate status icon
- (4) Slider for setting the manual/automatic operating mode
- (5) Aggregate status with plain text
- (6) Module status (LED bar) TMU-PO module



NOTE

By default, the touch display is darkened to a brightness value of 80%.

As soon as a person approaches the device at a distance of < 0.5 m, the touch display switches to full brightness for approx. 60 seconds.



Product Description

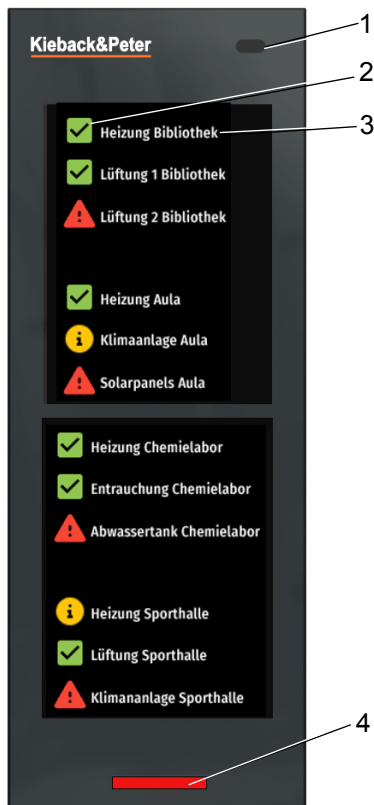
TMU-PO

- with analog function group



- (1) Proximity sensor
- (2) Display text (system designation)
- (3) Aggregate status icon (position indicator 0..100)
- (4) Slider for setting the control signal 0..100/automatic
- (5) Module status (LED bar) TMU-PO module

- with digital function group as alarm module



- (1) Proximity sensor
- (2) Status icon



- (3) Aggregate status plain text
- (4) Module status (LED bar) TMU-PO module

Display icons

Slider

- Slider



Automatic mode position



Manual position

Aggregate status

- Binary aggregate status (fan, pumps)

Display stage 1 to stage 4 depending on the function group used



Automatic mode position (e.g. aggregate stage 1 and 2 on)



Manual mode position (e.g. aggregate in stage 1 on and switched to stage 2, feedback stage 2 on not yet present)

- Aggregate status 3-point

Display Open, Stop, Closed used function group 3-point



Automatic mode position (e.g. valve in stop)



Manual mode position (e.g. valve set command open, end position not yet reached)

- Aggregate status 2-point

Display Open, Closed used function group 2-point



Automatic mode position (e.g. valve closed)



Manual mode position (e.g. valve set command open, end position not yet reached)

- Aggregate status continuous

Display position 0..100 used function group continuous



Automatic mode position (e.g. valve 64 %)



Manual mode position (e.g. valve set command 35%, currently at 64%)



Display icon visualization

Aggregate status icon

- for binary function groups

Aggregate status icon	Meaning
Light gray	Off
Green with frame, flashing yellow	no feedback End position, switching state not yet reached
Green without frame	On End position, switching state reached
Flashing red	Malfunction coming, not yet acknowledged
Red	Malfunction coming, acknowledged

Status icon

- for function group alarm module or unit status with plain text

 Signal-Betrieb

 Signal-Event

 Störmeldung

Priority of module status messages (LED bar) at TMC-PO

Priority	Status device message TMU-PO	Malfunction message	Acknowledge- ment at the TMC-PO	TMU-PO operation manual/auto
1	Yellow/Red	Present	Not acknowledged	Manual
2	Yellow/Red	Present	Acknowledged	Manual
3	Flashing red	Present	Not acknowledged	Auto
4	Red steady light	Present	Acknowledged	Auto
5	Yellow steady light	None	-	Manual
6	Off	None	-	Auto



LO and ID malfunction message processing

If a malfunction message is present on the BMD/BMA module, this is indicated in color in the module status (LED bar) at the associated TMC-PO module.

A collective malfunction message SSM is then present at the TMC-PO module. The acknowledgement button is red

(Red flashing = not acknowledged, Red = acknowledged). As long as the SSM has not been acknowledged, the relay (output DO1) is on at the BMD0401-PO. In addition, a horn can be controlled as an acoustic signal via this output DO1.

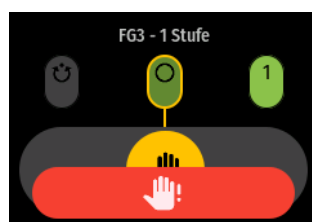
Event		Status				
BMD/BMA	TMC-PO	TMC-PO		TMU-PO		
Malfunction message at the BMD/BMA module	SSM acknowledgement	Device message (LED bar)	SSM acknowledgement on (acknowledgement button)	Aggregate status icon	Device message (LED bar) BMD/BMA in automatic mode	Device message (LED bar) BMD/BMA in manual mode
Not present	Not acknowledged	Off	Off	Off	Off	Yellow
Present	Not acknowledged	Flashing red	Flashing red	Flashing red	Flashing red	Flashing yellow/ red
Present	Acknowledged	Red	Red	Red	Red	Flashing yellow/ red
Passed	Not acknowledged	Off	Off	Off	Off	Yellow
Passed	Acknowledged	Off	Off	Off	Off	Yellow

Manual operation priorities

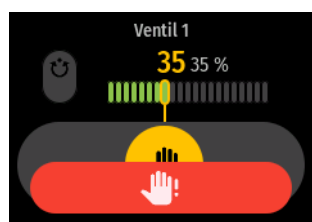
If the manual/automatic mode rotary switch at the BMD/BMA module is in position manual operation, this has priority to the manual operation at the TMU-PO module.

This is indicated visually in the touch display (red hand bar).

The aggregate status messages are still effective.



BMD1204-PO manual/automatic mode rotary switch in manual mode position Fan FG3 switched off from stage 1



BMA0804-PO manual/automatic mode rotary switch in position manual mode Valve 1 = 35%



Product Description

TMU-PO



NOTE

For more information, see "LO and ID System Overview" and "LO and ID Commissioning".
