



Signal lamp

# TROXNETCOM

## TNC-EASYCONTROL



Display module



### System for controlling and monitoring fire dampers with and without a 24 V actuator

Stand-alone solution for control input signal and monitoring of up to 12 fire dampers with 24 V actuator or up to 24 damper blade end positions

- Easy electrical installation with coded plug connections
- Pre-installed application software
- No additional programming required
- Improves fire safety

General information	2	Control system TNC-EC-Z03	13
Order code	3	Connection box – TNC-LINKBOX	16
Control system TNC-EC-Z00	4	Main PCB – TNC-EC-GP	17
Control system TNC-EC-Z01	6	Display module – TNC-EC-AZM	19
Control system TNC-EC-Z02	9	Display and control panel – TP070EC	21

## General information

### Application

- For controlling and monitoring up to 6 motorised fire dampers with a 24 V actuator (up to 12 fire dampers with parallel operation); alternatively for capturing the end positions of up to 12 mechanical dampers with one limit switch (up to 24 limit switches with parallel operation)
- With installed user software, ready to use
- Topology: star-shaped with 4-wire line
- Manual control (OPEN/CLOSE) of individual fire dampers
- Processing of a signal from the smoke detector or central fire alarm system
- Automated and time-controlled functional test using external control by central BMS and manual triggering
- Menu-driven operation and error display with integral LCD and softkeys
- Manual control (OPEN/CLOSE) of individual fire dampers
- Monitoring of the fire damper opening and closure times
- Simple plug-in connection
- Control system encased in sheet steel casing with cutout window, including power supply unit, completely wired and ready for plug-in
- Output of alarm messages: fire, smoke, fire damper closed, fault during functional test, running/limit switch faults, duct smoke detector contamination

**Order code****TNC-EC-Z00**|  
1**1 Product****TNC-EC-Z00** Standard construction in casing**TNC-EC-Z01** Standard construction with signal lamp**TNC-EC-Z02** Standard construction with display module**TNC-EC-Z03** Standard construction with signal lamp and display module**TNC-EC-GP** Main PCB**TNC-EC-AZM** Display module**TNC LINKBOX** Linkbox/wiring aid**TP070EC** Display and control panel as communication master

## Control system TNC-EC-Z00



### Application

- For controlling and monitoring up to 6 motorised fire dampers with a 24 V actuator (up to 12 fire dampers with parallel operation); alternatively for capturing the end positions of up to 12 mechanical dampers with one limit switch (up to 24 limit switches with parallel operation)
- With installed user software, ready to use
- Topology: star-shaped with 4-wire line
- Manual control (OPEN/CLOSE) of individual fire dampers
- Processing of a signal from the smoke detector or central fire alarm system
- Automated and time-controlled functional test using external control by central BMS and manual triggering
- Menu-driven operation and error display with integral LCD and softkeys
- Manual control (OPEN/CLOSE) of individual fire dampers
- Monitoring of the fire damper opening and closure times
- Simple plug-in connection
- Control system encased in sheet steel casing with cutout window, including power supply unit, completely wired and ready for plug-in
- Output of alarm messages: fire, smoke, fire damper closed, fault during functional test, running/limit switch faults, duct smoke detector contamination

### Specification text

For controlling and monitoring up to 6 motorised fire dampers with a 24 V actuator - or up to 12 fire dampers with parallel operation); alternatively for capturing one end position each for up to 12 mechanical dampers (up to 24 limit switches with parallel operation); complete with switching power supply unit in a sheet steel casing, powder-coated RAL 9010 and with an acrylic glass window.

- With installed user software, ready to use
- CAN interface for connecting the external display
- Supply voltage: 230 V AC  $\pm 10\%$
- Current consumption: < 150 mA (without external load)
- Dimensions: 400 × 220 × 84 mm (B x H x T)
- Installation: on a wall
- Protection level: IP 40
- Power supply: 230 V AC/50 Hz
- Operating manual
- Make: TROX GmbH or equivalent
- Type: TNC-EC-Z00

**Technical data, main PCB**

Electrical design	16 inputs/outputs
Supply voltage	24 V DC, -15 – 25%
Current consumption	< 150 mA
Operating temperature	0 – 40 °C
Construction	Open PCB
Protection level	IP 00
Dimensions B x H x T	162 × 126 × 75 mm
Connection	Screw terminals
Fixing	On mounting rail (if mounted with casing)
Program memory	256 kB
Data memory	SRAM 2 × 128 kByte, EEPROM 1 kByte 256 kB
Interface	1 × RS232C, 9.6 kBaud, CAN1, CAN2, CANopen protocol
Status display	Power LED - green; status LEDs - green and red; programmed 8-digit LCD
Operating buttons	3 Softkeys
Number of inputs	16, common reference point (GND)
Display	Yellow LED
Input voltage	24 V DC nominal
Input current	Typically 10 mA
Activation level high	15 – 30 V DC
Deactivation level low	0 – 5.5 V DC
Number of outputs	16 (2 × 8), 24 V DC for 8 outputs each
Display	LED red
Switching voltage	12 – 34 V DC, 24 V DC nominal
Switching current	1.1 A per output
Coincidence factor	100 %
Short circuit protection	>6 A (electronic) per channel

**Technical data, switching power supply unit**

Input voltage	230 V AC
Output voltage	24 V DC
Output current	6.5 A
External fuse, output	T4 L/250 V (fuse in switch box)
Ambient temperature	-25 to 75 °C
Protection level	IP20
Dimensions B x H x T	97 × 174 × 38 mm
Connection	Screw terminals up to 2.5 mm <sup>2</sup>
Fixing	On mounting rail

**Technical data, casing**

Dimensions (B × H × T)	400 × 220 × 84 mm
Casing material	Galvanised sheet steel, powder-coated RAL 9010
Inspection window	Plexiglass XT, colourless
Components	Installed on mounting rail
Protection level	IP 40

## Control system TNC-EC-Z01



### Application

- For controlling and monitoring up to 6 motorised fire dampers with a 24 V actuator (up to 12 fire dampers with parallel operation); alternatively for capturing the end positions of up to 12 mechanical dampers with one limit switch (up to 24 limit switches with parallel operation)
- With installed user software, ready to use
- Topology: star-shaped with 4-wire line
- Manual control (OPEN/CLOSE) of individual fire dampers
- Processing of a signal from a duct smoke detector or central fire alarm system
- Automated and time-controlled functional test using external control by central BMS and manual triggering
- Menu-driven operation and error display with integral LCD and softkeys
- Manual control (OPEN/CLOSE) of individual fire dampers
- Monitoring of the fire damper opening and closure times
- Simple plug-in connection
- Control system encased in sheet steel casing with cutout window, including power supply unit, completely wired and ready for plug-in
- Output of alarm messages: fire, smoke, fire damper closed, fault during functional test, running/limit switch faults, duct smoke detector contamination
- Signal lamp for alarm signalling, mounted into the cover plate and completely wired (ready to use)

### Specification text

For controlling and monitoring up to 6 motorised fire dampers with a 24 V actuator (up to 12 fire dampers in parallel operation) or optionally for end position detection of up to 12 mechanical dampers with one end position each (up to 24 limit switches in parallel operation); complete with switching power supply unit in a sheet steel casing, powder-coated RAL9010 and with an acrylic glass window; with a signal lamp for alarm signalling, mounted into the cover plate and completely wired (ready to use)

- With installed user software, ready to use
- CAN interface for connecting the external display
- Supply voltage: 230 V AC  $\pm 10\%$
- Current consumption: < 150 mA (without external load)
- Dimensions: 400 × 220 × 84 mm (B x H x T)
- Installation: on a wall
- Protection level: IP 40
- Power supply: 230 V AC/50 Hz
- Operating manual
- Make: TROX GmbH or equivalent
- Type: TNC-EC-Z01

**Technical data, main PCB**

Electrical design	16 inputs/outputs
Supply voltage	24 V DC, -15 – 25%
Current consumption	< 150 mA
Operating temperature	0 – 40 °C
Construction	Open PCB
Protection level	IP 00
Dimensions B x H x T	162 × 126 × 75 mm
Connection	Screw terminals
Fixing	On mounting rail (if mounted with casing)
Program memory	256 kB
Data memory	SRAM 2 × 128 kByte, EEPROM 1 kByte 256 kB
Interface	1 × RS232C, 9.6 kBaud, CAN1, CAN2, CANopen protocol
Status display	Power LED - green; status LEDs - green and red; programmed 8-digit LCD
Operating buttons	3 Softkeys
Number of inputs	16, common reference point (GND)
Display	Yellow LED
Input voltage	24 V DC nominal
Input current	Typically 10 mA
Activation level high	15 – 30 V DC
Deactivation level low	0 – 5.5 V DC
Number of outputs	16 (2 × 8), 24 V DC for 8 outputs each
Display	LED red
Switching voltage	12 – 34 V DC, 24 V DC nominal
Switching current	1.1 A per output
Coincidence factor	100 %
Short circuit protection	>6 A (electronic) per channel

**Technical data, power supply unit**

Input voltage	230 V AC
Output voltage	24 V DC
Output current	6.5 A
External fuse, output	T4 L/250 V (fuse in switch box)
Ambient temperature	-25 to 75 °C
Protection level	IP20
Dimensions B x H x T	97 × 174 × 38 mm
Connection	Screw terminals up to 2.5 mm <sup>2</sup>
Fixing	On mounting rail

**Technical data, casing**

Dimensions (B × H × T)	400 × 220 × 84 mm
Casing material	Galvanised sheet steel, powder-coated RAL 9010
Inspection window	Plexiglass XT, colourless
Components	Installed on mounting rail
Protection level	IP 40

**Technical data, signal lamp**

Casing	PC-ABS blend
Dome cap	PC, transparent
Illumination pattern	LED continuous
Type of tone	Continuous tone
Dimensions (Ø × H)	49.5 × 75 mm



Noise level	80 dB
Tone frequency	3 kHz
Switch-on current	0.5 A
Current consumption	80 mA
Supply voltage	24 V DC
Protection level	IP65
Service life	50,000 h
Connection	Plug with screw terminal, max. 0.5 mm <sup>2</sup>



## Control system TNC-EC-Z02



### Application

- For controlling and monitoring of up to 6 motorised fire dampers with a 24-V actuator (up to 12 fire dampers with parallel operation); alternatively for capturing the end positions of up to 12 mechanical dampers with one limit switch (up to 24 limit switches with parallel operation)
- With installed user software, ready to use
- Topology: star-shaped with 4-wire line
- Manual control (OPEN/CLOSE) of individual fire dampers
- Processing of a signal from a duct smoke detector or central fire alarm system
- Automated and time-controlled functional test using external control by central BMS and manual triggering
- Menu-driven operation and error display with integral LCD and softkeys
- Manual control (OPEN/CLOSE) of individual fire dampers
- Monitoring of the fire damper opening and closure times
- Simple plug-in connection
- Control system encased in sheet steel casing with cutout window, including power supply unit, completely wired and ready for plug-in
- Output of alarm messages: fire, smoke, fire damper closed, fault during functional test, running/limit switch faults, duct smoke detector contamination
- With 2.8 inch display module mounted into the cover plate and completely wired (ready to use), for displaying damper blade positions
- For controlling individual fire dampers
- For starting a functional test

### Specification text

For controlling and monitoring up to 6 motorised fire dampers with a 24 V actuator (up to 12 fire dampers in parallel operation) or optionally for capturing of the end positions of up to 12 mechanical dampers with one end position each (up to 24 limit switches in parallel operation); with a switching power supply unit in a sheet steel casing, powder-coated RAL9010 and with an acrylic glass window, with a 2.8 inch display module mounted into the cover plate and completely wired (ready to use), for displaying damper blade positions, for controlling individual fire dampers, and for starting a functional test

- With installed user software, ready to use
- CAN interface for connecting the external display
- Supply voltage: 230 V AC  $\pm 10\%$
- Current consumption: < 150 mA (without external load)
- Dimensions: 400 × 220 × 84 mm (B × H × T)
- Installation: on a wall
- Protection level: IP 40
- Power supply: 230 V AC/50 Hz
- Operating manual
- Make: TROX GmbH or equivalent
- Type: TNC-EC-Z02

**Technical data, main PCB**

Electrical design	16 inputs/outputs
Supply voltage	24 V DC, -15 – 25%
Current consumption	< 150 mA
Operating temperature	0 – 40 °C
Construction	Open PCB
Protection level	IP 00
Dimensions B x H x T	162 × 126 × 75 mm
Connection	Screw terminals
Fixing	On mounting rail (if mounted with casing)
Program memory	256 kB
Data memory	SRAM 2 × 128 kByte, EEPROM 1 kByte 256 kB
Interface	1 × RS232C, 9.6 kBaud, CAN1, CAN2, CANopen protocol
Status display	Power LED - green; status LEDs - green and red; programmed 8-digit LCD
Operating buttons	3 Softkeys
Number of inputs	16, common reference point (GND)
Display	Yellow LED
Input voltage	24 V DC nominal
Input current	Typically 10 mA
Activation level high	15 – 30 V DC
Deactivation level low	0 – 5.5 V DC
Number of outputs	16 (2 × 8), 24 V DC for 8 outputs each
Display	LED red
Switching voltage	12 – 34 V DC, 24 V DC nominal
Switching current	1.1 A per output
Coincidence factor	100 %
Short circuit protection	>6 A (electronic) per channel

**Technical data, power supply unit**

Input voltage	230 V AC
Output voltage	24 V DC
Output current	6.5 A
External fuse, output	T4 L/250 V (fuse in switch box)
Ambient temperature	-25 to 75 °C
Protection level	IP20
Dimensions B x H x T	97 × 174 × 38 mm
Connection	Screw terminals up to 2.5 mm <sup>2</sup>
Fixing	On mounting rail

**Technical data, casing**

Dimensions (B × H × T)	400 × 220 × 84 mm
Casing material	Galvanised sheet steel, powder-coated RAL 9010
Inspection window	Plexiglass XT, colourless
Components	Installed on mounting rail
Protection level	IP 40

**Technical data, display module**

Display	2.8 inch TFT colour LCD
Resolution	320 × 240 pixels
Colours	256
Backlighting	LED
Dimensions B x H x T	87.5 × 87.5 × 37.7 mm



Casing material	Plastic, black
Buttons	5 function buttons
Rocker switch	Cursor functions (UP, DOWN, LEFT, RIGHT)
Protection level	IP 67 when installed in the front panel of the casing, otherwise IP 65
Operating temperature	-20 to 30 °C
Supply voltage	8 – 32 V DC
Current consumption	70 mA at 24 V DC
CAN interface	CANopen protocol

## Control system TNC-EC-Z03



### Application

- For controlling and monitoring up to 6 motorised fire dampers with a 24 V actuator (up to 12 fire dampers with parallel operation); alternatively for capturing the end positions of up to 12 mechanical dampers with one limit switch (up to 24 limit switches with parallel operation)
- With installed user software, ready to use
- Topology: star-shaped with 4-wire line
- Manual control (OPEN/CLOSE) of individual fire dampers
- Processing of a signal from a duct smoke detector or central fire alarm system
- Automated and time-controlled functional test using external control by central BMS and manual triggering
- Menu-driven operation and error display with integral LCD and softkeys
- Manual control (OPEN/CLOSE) of individual fire dampers
- Monitoring of the fire damper opening and closure times
- Simple plug-in connection
- Control system encased in sheet steel casing with cutout window, including power supply unit, completely wired and ready for plug-in
- Output of alarm messages: fire, smoke, fire damper closed, fault during functional test, running/limit switch faults, duct smoke detector contamination
- Signal lamp for alarm signalling, mounted into the cover plate and completely wired (ready to use)
- With 2.8 inch display module mounted into the cover plate and completely wired (ready to use), for displaying damper blade positions
- For controlling individual fire dampers
- For starting a functional test

**Specification text**

For controlling and monitoring up to 6 motorised fire dampers with a 24 V actuator (up to 12 fire dampers in parallel operation) or optionally for capturing of the end positions of up to 12 mechanical dampers with one end position each (up to 24 limit switches in parallel operation); with a switching power supply unit in a sheet steel casing, powder-coated RAL9010 and with an acrylic glass window; with a signal lamp for alarm signalling, mounted in the front cover and functionally wired, with a 2.8 inch display module mounted into the cover plate and completely wired (ready to use), for displaying damper blade positions, for controlling individual fire dampers, and for starting a functional test

- With installed user software, ready to use
- CAN interface for connecting the external display
- Supply voltage: 230 V AC ±10 %
- Current consumption: < 150 mA (without external load)
- Dimensions: 400 × 220 × 84 mm (B x H x T)
- Installation: on a wall
- Protection level: IP 40
- Power supply: 230 V AC/50 Hz
- Operating manual
- Make: TROX GmbH or equivalent
- Type: TNC-EC-Z03

**Technical data, main PCB**

Electrical design	16 inputs/outputs
Supply voltage	24 V DC, -15 – 25%
Current consumption	< 150 mA
Operating temperature	0 – 40 °C
Construction	Open PCB
Protection level	IP 00
Dimensions B x H x T	162 × 126 × 75 mm
Connection	Screw terminals
Fixing	On mounting rail (if mounted with casing)
Program memory	256 kB
Data memory	SRAM 2 × 128 kByte, EEPROM 1 kByte 256 kB
Interface	1× RS232C, 9.6 kBaud, CAN1, CAN2, CANopen protocol
Status display	Power LED - green; status LEDs - green and red; programmed 8-digit LCD
Operating buttons	3 Softkeys
Number of inputs	16, common reference point (GND)
Display	Yellow LED
Input voltage	24 V DC nominal
Input current	Typically 10 mA
Activation level high	15 – 30 V DC
Deactivation level low	0 – 5.5 V DC
Number of outputs	16 (2 × 8), 24 V DC for 8 outputs each
Display	LED red
Switching voltage	12 – 34 V DC, 24 V DC nominal
Switching current	1.1 A per output
Coincidence factor	100 %
Short circuit protection	>6 A (electronic) per channel

**Technical data, power supply unit**

Input voltage	230 V AC
Output voltage	24 V DC
Output current	6.5 A
External fuse, output	T4 L/250 V (fuse in switch box)
Ambient temperature	-25 to 75 °C
Protection level	IP20
Dimensions B x H x T	97 × 174 × 38 mm
Connection	Screw terminals up to 2.5 mm <sup>2</sup>
Fixing	On mounting rail

**Technical data, casing**

Dimensions (B × H × T)	400 × 220 × 84 mm
Casing material	Galvanised sheet steel, powder-coated RAL 9010
Inspection window	Plexiglass XT, colourless
Components	Installed on mounting rail
Protection level	IP 40

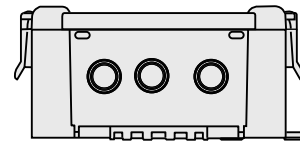
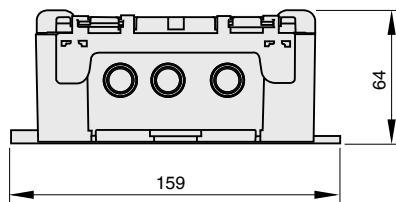
**Technical data, signal lamp**

Casing	PC-ABS blend
Dome cap	PC, transparent
Illumination pattern	LED continuous
Type of tone	Continuous tone
Dimensions (Ø × H)	49.5 × 75 mm
Noise level	80 dB
Tone frequency	3 kHz
Switch-on current	0.5 A
Current consumption	80 mA
Supply voltage	24 V DC
Protection level	IP65
Service life	50,000 h
Connection	Plug with screw terminal, max. 0.5 mm <sup>2</sup>

**Technical data, display module**

Display	2.8 inch TFT colour LCD
Resolution	320 × 240 pixels
Colours	256
Backlighting	LED
Dimensions B x H x T	87.5 × 87.5 × 37.7 mm
Casing material	Plastic, black
Buttons	5 function buttons
Rocker switch	Cursor functions (UP, DOWN, LEFT, RIGHT)
Protection level	IP 67 when installed in the front panel of the casing, otherwise IP 65
Operating temperature	-20 to 30 °C
Supply voltage	8 – 32 V DC
Current consumption	70 mA at 24 V DC
CAN interface	CANopen protocol

## Connection box – TNC-LINKBOX



### Application

Module to be combined with TNC-EASYCONTROL for controlling motorised fire dampers and for capturing the damper blade end positions.

- Quick and easy connection of actuator cables to TNC-EASYCONTROL (as connection box)
- 24 V DC power supply to actuator
- Ready to be used with actuators with AMP plug
- Capturing damper blade positions OPEN and CLOSED
- Parallel operation of 2 damper actuators (as distribution box)
- Easy function change with a jumper on the PCB

### Specification text

Module for quick and easy connection of the actuator control cables to TNC-EASYCONTROL (as connection box); if there are 2 motorised fire dampers in parallel operation, the LINKBOX acts as a distributor box. Can be attached to fire dampers with a mounting bracket (accessory ZA14).

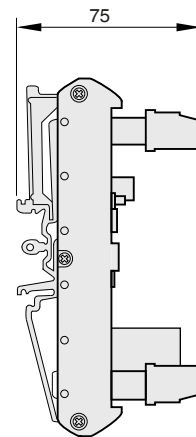
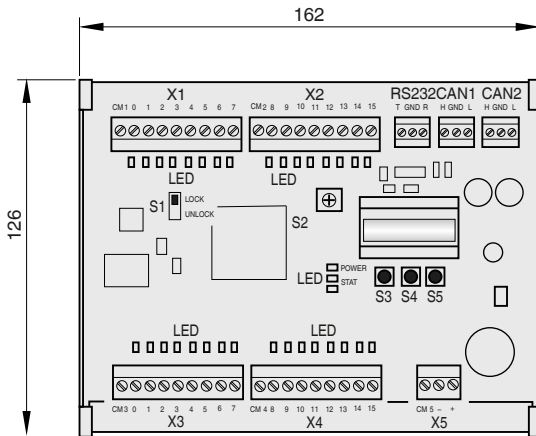
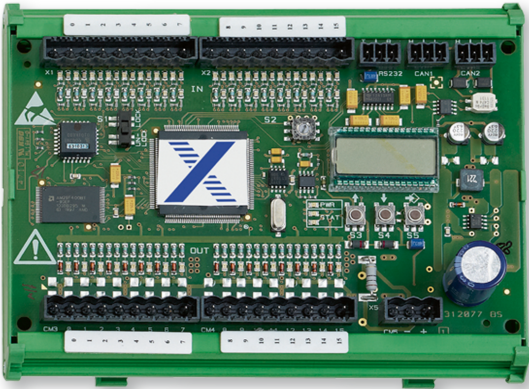
- Supply voltage: 24 V DC
- Current consumption:  $\leq 850$  mA
- Ambient temperature:  $-5 - 75$  °C
- Protection level: IP 42
- Make: TROX GmbH or equivalent
- Type: TNC-LINKBOX

### Technical data

Description	TNC-LINKBOX
Supply voltage	24 V DC
Current consumption	$\leq 850$ mA
IEC protection class	IP 42
Double-stack terminal block	4-pole; $0.12 - 1.5$ mm <sup>2</sup>
Socket, type AMP Mate-N-LOK	Control cable, 3-pole; end positions, 6-pole



Main PCB – TNC-EC-GP



**Application**

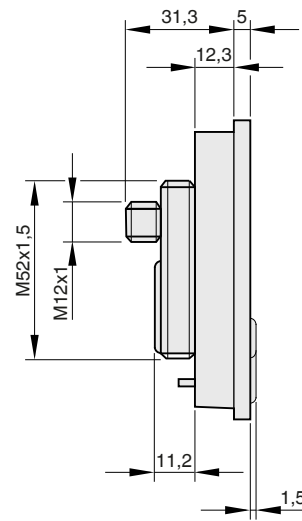
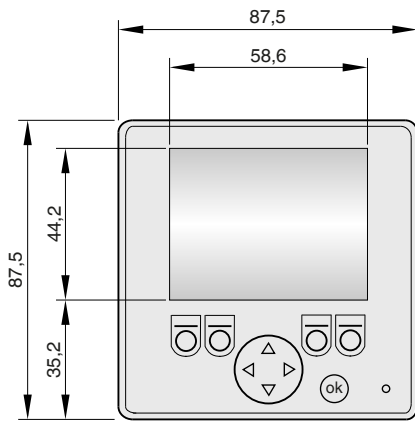
- Single PCB control for installation on a mounting rail
- Stand-alone solution for controlling and monitoring up to 6 motorised fire dampers with 24 V DC (up to 12 fire dampers with parallel operation); alternatively for capturing the end positions of up to 12 mechanical dampers with one limit switch (up to 24 limit switches with parallel operation)
- With installed user software, ready to use
- Menu-driven operation with integral LCD and softkeys on the main PCB, signalling with LEDs
- Topology: star-shaped with 4-wire line
- Processing of a signal from the duct smoke detector or central fire alarm system (smoke detection, contamination of duct smoke detector)
- Manual control (OPEN/CLOSE) of individual fire dampers
- Automatic functional test

**Specification text**

Single PCB control for controlling and monitoring up to 6 motorised fire dampers with 24 V DC (up to 12 fire dampers with parallel operation); alternatively for capturing the end positions of up to 12 mechanical dampers with one limit switch (up to 24 limit switches with parallel operation)

- With installed user software
- CAN bus interface for the connection of an external display and control panel
- Supply voltage: 24 V DC, -15 – 25 %
- Current consumption: < 150 mA (without external load)
- Dimensions: 162 × 126 × 75 mm (B x H x T)
- Installation: on mounting rail
- Make: TROX GmbH or equivalent
- Type: TNC-EC-GP

Display module – TNC-EC-AZM



**Application**

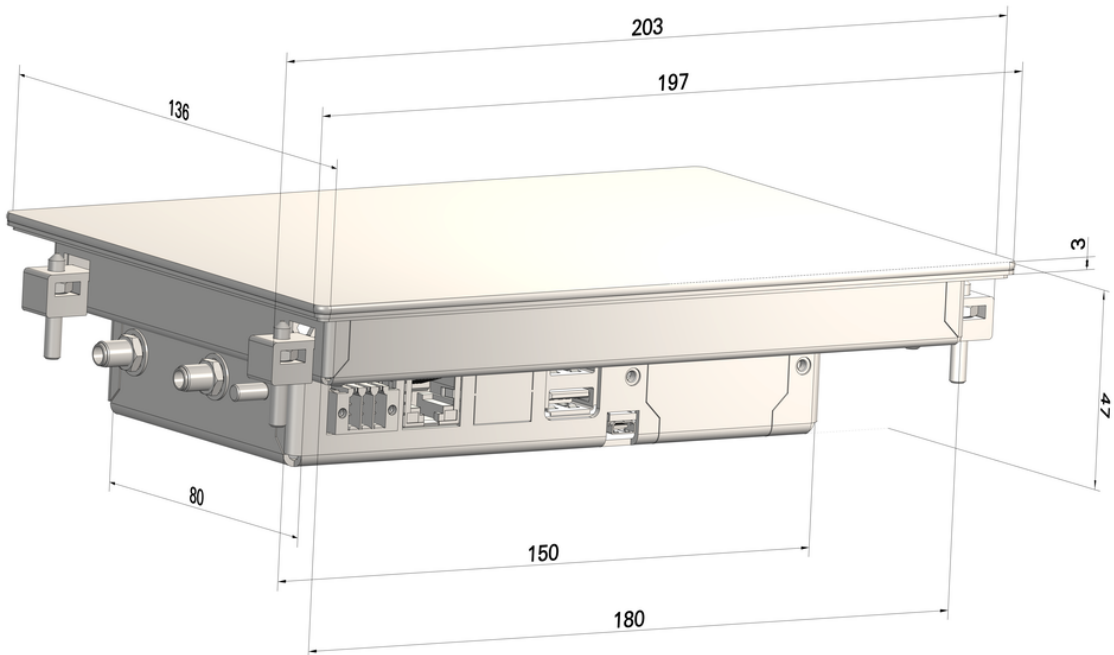
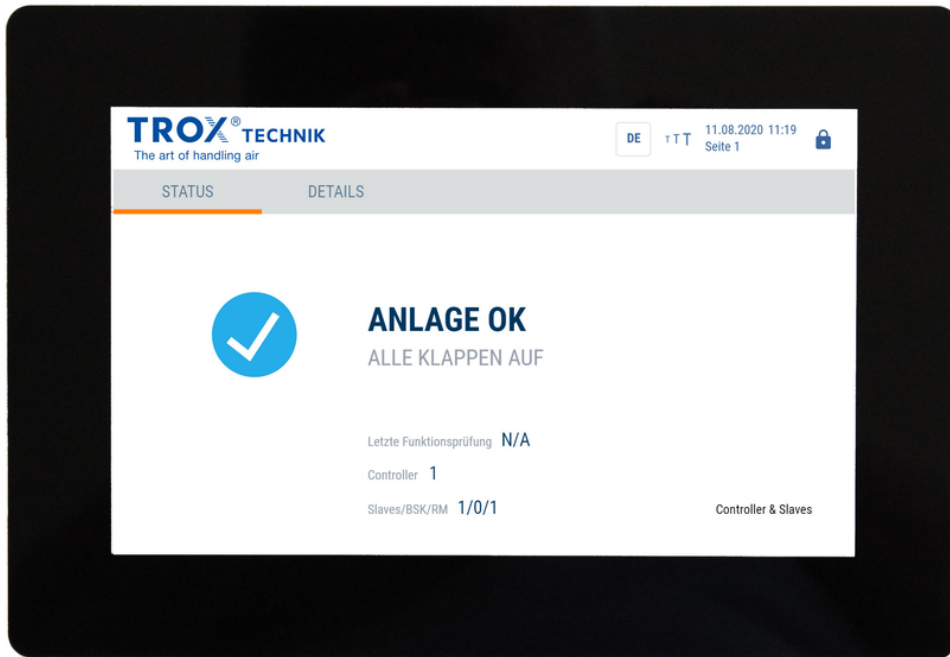
- Display module for menu-driven operation and error display
- 2.8 inch colour LED and backlit function buttons with rocker switch for cursor allow for menu-driven operation and error display
- Language selection (German, English, Finnish; other languages upon request)
- Connecting cable for data and supply voltage, standard length of 5 m
- Menu-driven functional test
- Manual control of fire dampers
- Password protection

**Specification text**

Menu-driven operation and display of the TNC-EASYCONTROL control system.

- 2.8 inch colour LCD with 5 function buttons and rocker switch for cursor
- Language selection (for operation and display): German, English, Finnish
- CAN bus interface
- Supply voltage: 8 – 32 V DC
- Current consumption: 70 mA at 24 V DC
- Dimensions: 87.5 × 87.5 × 37.5 mm (B x H x T)
- Casing: plastic, black
- Protection level: IP 67 when installed in the front panel of the casing, otherwise IP 65
- Operating manual
- Make: TROX GmbH or equivalent
- Type: TNC-EC-AZM

# Display and control panel – TP070EC



**Application**

- 7.0 inch MMI system for display, operation and as communication master for up to 2 TNC-EASYCONTROL units
- ModBus TCP and BACnet/IP interfaces for integration with central BMS without additional project engineering work
- With integral TNC Basic User Software/EC

**Specification text**

MMI system for display, operation and as communication master for up to 2 TNC-EASYCONTROL units

- 7.0 inch colour display, touchscreen
- Interfaces: ModBus RTU/TCP and BACnet/IP interfaces for integration with the central BMS (no additional design effort required)
- With Basic User Software/EC for controlling and for the display of all system status values
- Automatic functional test, including documentation
- Real time clock
- Ethernet, USB
- Dimensions of front panel (B x H x T): 197 × 136 × 3 mm
- Protection level: Front IP 65; back IP 20
- Supply voltage 24 V DC
- Make: TROX GmbH or equivalent
- Type: TP070EC

**Technical data**

Description	TP070EC
Display	Widescreen 16:9
Operation	Touch screen (PCAP multi touch sensor)
Casing	Metal
Front panel material	Anti-reflective and tempered glass
Front panel B × H × T	197 × 136 mm × 3 mm
Cut-out B × H	184 × 122 mm
Installation depth	44.5 mm
Protection level	IP65 front, IP20 back
Total weight	Approx. 450 g
Interfaces	CAN bus Ethernet, USB
Memory	1 GB (4 GB max.) NAND flash (optional), 1 x SD card slot
Temperature range	0 to 55 °C
Supply voltage	24 V DC via control unit
Current consumption	0.5 A
Power required	Approx. 12 W