Operating and installation manual

TNC-EASYCONTROL

TROX® TECHNIK

The art of handling air

Contents

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TROX GmbH

Heinrich-Trox-Platz
D-47504 Neukirchen-Vluyn

Telefon +49(0)28 45/2 02-0
Telefax +49(0)28 45/2 02-2 65
E-Mail trox@trox.de
www.trox.de

1 General Information

Contents

General information

This manual describes TNC-EASYCONTROL for fire dampers. It can be used to send control input signals to actuators for fire dampers and to capture the end positions of fire dampers.

To ensure complete functioning it is essential to read the provided installation manual before starting any work, and to comply with it. The manual must be given to the facilities manager when handing over the system. The facilities manager must include the manual with the system documentation.

The manufacturer does not accept any liability for any malfunction or damage resulting from non-compliance with this manual or non-compliance with relevant statutory regulations.

Other applicable documentation

In addition to this installation manual, the following documents apply:

- Technical leaflet for the fire damper
- Operating and installation manual for the fire damper
- Declaration of performance (DoP) for the fire damper

Symbols used in this manual

Danger
Designates danger to life and limb due to electrical voltage.

Warning!
Potentially hazardous situation which, if not avoided, may result in death or serious injury.

Caution
Potentially hazardous situation which, if not avoided, may result in minor injury or damage to property.

Caution
Potentially hazardous situation which, if not avoided, may result in injury to your hands.

3 Product description

General information regarding safety

Only specialist personnel are allowed to perform the described work on TNC-EASYCONTROL.

Only skilled qualified electricians are allowed to work on the electrical system.

Be sure to observe the code of good practice and especially safety and accident prevention regulations for all work on TNC-EASYCONTROL and on fire dampers.

In particular:

- National laws regarding the safety of devices and products, industrial health and safety regulations, and accident prevention regulations
- General regulations (VGB1) of the Accident Prevention Regulations for Electrical Installations and Equipment (Unfallverhütungsvorschriften für elektrische Anlagen und Betriebsmittel (BGV A2))

General safety measures

- General safety measures

Caution
If TNC-EASYCONTROL has been kept in an unheated area, wait for two hours before switching on the supply voltage. Condensation may damage the electronic components beyond repair. Only after about 2 hours will the system have reached room temperature.

- Exercise caution when installing the unit

Caution
Foreign objects or liquids may get into the casing and result in injuries to your hands.

Always wear protective gloves.

If objects or liquids get into the casing, or if the device emits a smell or smoke, have it checked by the manufacturer.

Correct use

TNC-EASYCONTROL is used to safely control and monitor TROX fire dampers.

- Use the controller only for the applications described in this manual.
- The controller must only be used within the limits specified in the technical data.

Incorrect use

- Do not use the controller for areas of application that are not described in this manual.
- Do not use the controller outdoors, in wet areas, or in potentially explosive atmospheres.

Residual risks

Danger of electric shock! Do not touch any live components!

Electrical equipment carries a dangerous electrical voltage.

- Only skilled qualified electricians are allowed to work on the electrical system.
- Before you work on the controller, switch off the voltage supply and secure it against being switched on again.
- Only then should you work on TNC-EASYCONTROL.

2 Safety and correct use

Product description and dimensions

Application

- Control system encased in sheet steel casing with cutout window, including power supply unit and timer, completely wired and ready for plug-in
- Control of 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 pre-installed user software, ready to use
- Topology: star-shaped with 4-wire line
- Manual control (OPEN/CLOSE) of individual fire dampers
- Monitoring of the fire damper opening and closure times
- Automated and time-controlled function test using timer, or external control by central BMS and manual triggering
- Output of alarm messages: fire, smoke, fire damper closed, fault during function test, running/limit switch faults, smoke detector contamination
- Menu-driven operation using integral LCD and softkeys on the main PCB, signalling with LEDs

Accessories

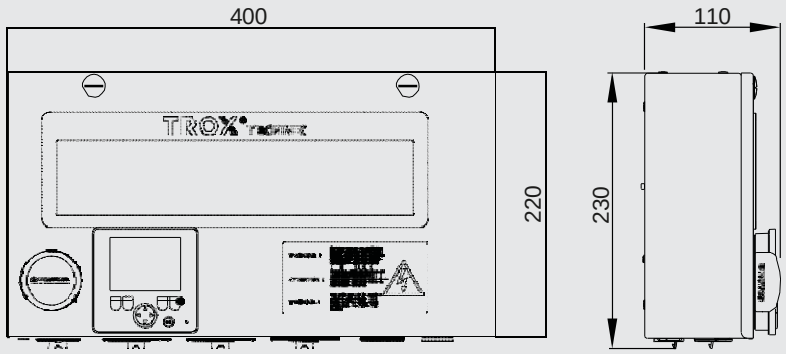
- Z01
  - LED/buzzer combination for alarm signalling
  - Mounted into the cover plate and completely wired (ready to use)
- Z02
  - 2.8 inch colour LCD, mounted into the cover plate and completely wired (ready to use)
  - For displaying damper blade positions
  - For controlling individual fire dampers
  - For starting a functional test
- Z03
  - 2.8 inch colour LCD and LED/buzzer combination

When a TP043EC display is used for operation and as a communication master, two TNC-EASYCONTROL units may be used in combination.

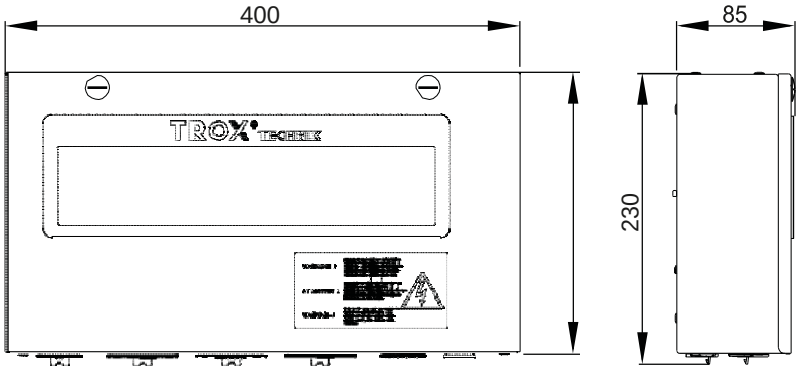
Maintenance

- Maintenance-free as construction and materials are not subject to wear

TNC-EASYCONTROL Z01 - Z03



TNC-EASYCONTROL, version Z00



5 Installation

TNC-EASYCONTROL (PCB)	
Electrical design	16 inputs/16 outputs
Supply voltage [V]	24 DC -15%...+25%
Current consumption [mA]	< 150
Operating temperature [°C]	0…+40
Construction	Open PCB
IP protection level	IP00
Dimensions (BxHxT) [mm]	162 x 126 x 75
Connection	Screw terminals
Installation	On mounting rail
Program memory [kB]	256
Data memory [kB]	256
Interface	1x RS232C, 9.6 kBaud CAN1, CAN2, CAN open protocol
Status display	Power LED - green; status LEDs - green and red; programmed 8-digit LCD
Operating buttons	3 softkeys

Inputs IN 0…IN 15	
Number of inputs	16, common reference point (GND)
Display	LED yellow
Input voltage [V]	24 V DC nominal
Input current [mA]	typ. 10
Activation level high [V]	>+15…+30 DC
Deactivation level low [V]	0…+5.5 DC

Outputs OUT 0…OUT 15	
Number of outputs	16 (2 × 8), +24 V DC for 8 outputs each
Display	LED red
Switching voltage [V]	12 ... 34 V DC, 24 V DC nominal
Switching current [A]	1.1 A per output
Coincidence factor [%]	100
Short circuit protection	>6 A (electronic) per channel

Technical data, switching power supply unit 24VDC/4.2A	
Input voltage (N, L) [V]	90…264 AC
Output voltage [V]	24…28 DC (adjustable)
Output current [A]	4.2
Internal fuse, input	T3.15A / 250 VAC
External fuse, output	T4 A/24 V DC (fuse holder in switch box)
Ambient temperature [°C]	-25…+71
IP protection level	IP20
Dimensions (BxHxT) [mm]	91 x 90 x 57
Connection	Screw terminals up to 2.5 mm²
Installation	On mounting rail TS35

4 Technical data

Delivery check

Check delivered items immediately after arrival for transport damage and completeness. In case of any damage or an incomplete shipment, inform the shipping company and your TROX contact person immediately.

A complete shipment includes:

- TNC-EASYCONTROL PCB and 230V/24V power supply unit in a metal casing, mounted on a mouting rail
- Metal cover with window
- Set of plugs and sockets, in a bag:
  - 1x GST18i3 socket, black (3-pole)
  - 6x GST18i5 plug, black/blue (5-pole)
  - 1x GST15i5 plug, white (5-pole)
  - 1x GST15i5 socket, white (5-pole)
  - 1x GST15i3 plug, brown (3-pole)
  - 1x BST14i2 plug, black (2-pole)
- Operating and installation manual

Transport on site

- If possible, take the controller in its transport packaging up to the installation location.
- Do not remove the protective wrapping until just before installation.

Storage

If you need to store the controller temporarily, make sure that the following conditions apply:

- Leave the unit in its packaging and do not expose it to the effects of weather.
- Store the unit in a dry place and away from direct sunlight.
- Temperature -10 °C to +60 °C, max. 90 % humidity (non-condensing)

Packaging

Properly dispose of packaging material.

Installation

For installation, wiring, and commissioning observe the code of good practice and especially safety and accident prevention regulations.

For any wiring work follow the national and local regulations and guidelines for electrical installation.

Danger

Danger of electric shock! Do not touch any live components!

Electrical equipment carries a dangerous electrical voltage.

- Only skilled qualified electricians are allowed to work on the electrical system.
- Before you work on the controller, switch off the voltage supply and secure it against being switched on again.
- Only then should you work on TNC-EASYCONTROL.

6 Commissioning

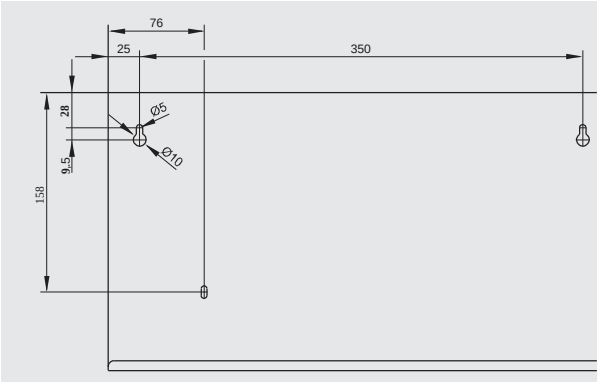
Mounting

Be careful when you mount the casing so as not to damage any electronic components or the wiring.

TNC-EASYCONTROL is intended for wall mounting. The wall must be strong enough to carry the unit. Use screws and wall plugs that are suitable for the type of wall.

Drill fixing holes according to the illustration.

The cover from the package may serve as a drill template.



Mains connection

TNC-EASYCONTROL requires 230V/AC voltage supply.
The GST18i3 socket is intended for mains connection.

Connection data:	
Pre fuse	min. 6 A
Cable diameter min. 8 mm	max. 12.5 mm/
Connection diameter	max. 2.5 mm²/ min. 0.75 mm²
Connections per pole	1

Fire damper actuator connection

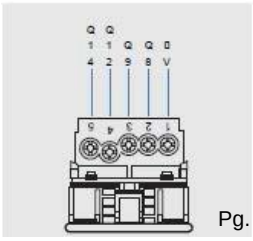
TNC-EASYCONTROL can be used to control and monitor up to six motorised fire dampers. If two fire dampers run in parallel, up to 12 fire dampers can be controlled and monitored. 4-wire cables are used for control and for capturing the end positions of the 24 V fire damper actuators.

Connections

All connections to TNC-EASYCONTROL can be made with plugs. These include the mains connection, signal inputs and outputs, display communication, and a socket to connect the RM-O-3-D duct smoke detector. Sockets and plugs are wired to the power supply unit in the casing. Mating pieces are included in the supply package.

Outputs

The connection for the outputs is made with a GST15i5 socket. All outputs are volt-free outputs.
The terminal connections are as follows:



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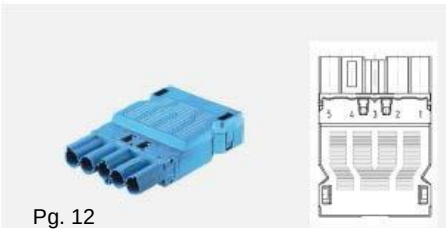
Mains

Above

Fire Damper

Connect the actuator cable to TNC-EASYCONTROL using a GST18i5 plug.



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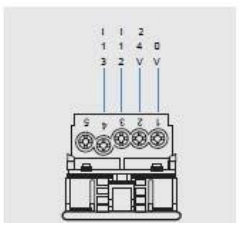
Smoke Detector

Connecting a duct smoke detector

The connection for the inputs is made with a GST15i5 plug.

The terminal connections are as follows:



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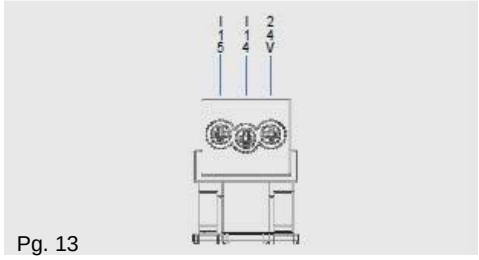
Inputs

The connection for the inputs is made with a GST15i3 plug
The terminal connections are as follows:



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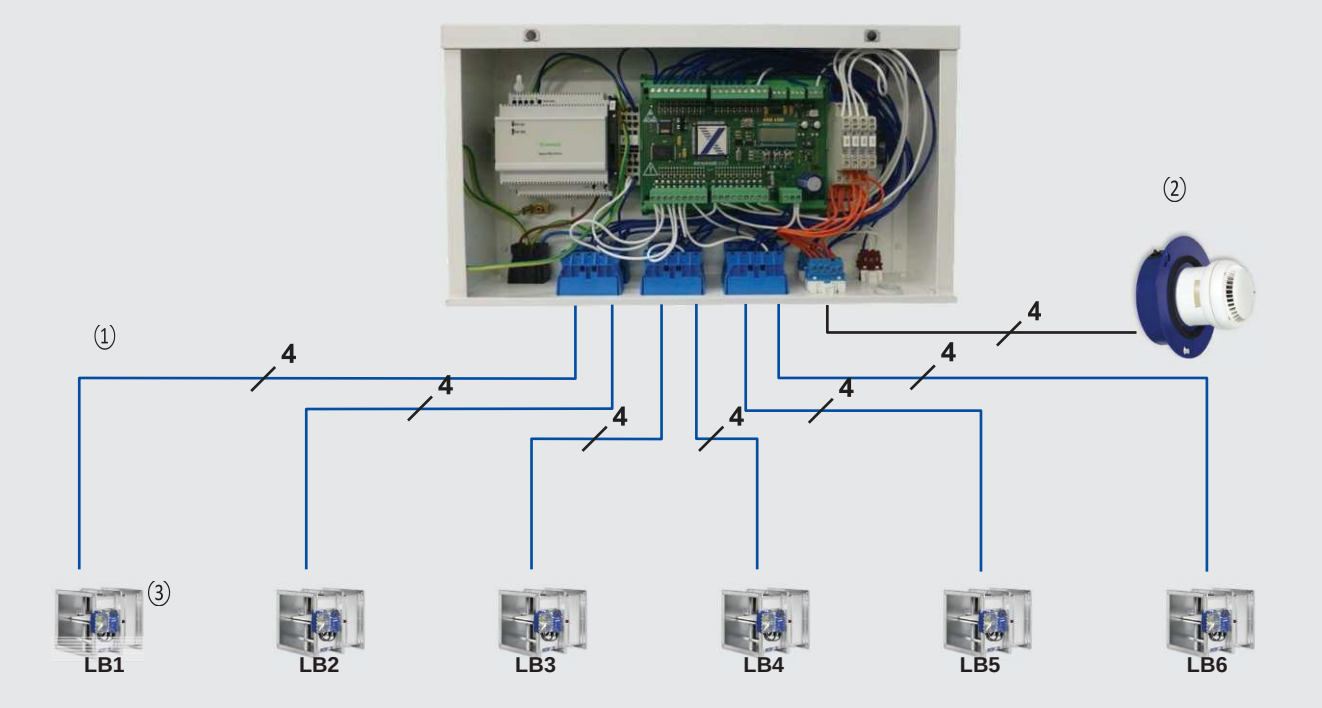
5 Installation

Standard mode



Configuration with 6 fire dampers (standard operation = 1 fire damper per output)

① Type of cable, e.g. HMH 5 x 1.5 mm² (control cable with better behavior in the event of a fire, free of halogens)

② Duct smoke detector RM-O-D

③ Fire damper with factory mounted TNC-LINKBOX

Easy and quick connection of actuator cables to TNC-EASYCONTROL is possible with the TNC-LINKBOX.

If you order the TNC-LINKBOX as an accessory, it will be factory mounted. Together with a mounting plate it is factory attached to the damper and wired to the actuator.

If mounting is to be carried out by others, the plugs of the actuator can simply be connected to the sockets on the TNC-LINKBOX.

Connect the 4 wires of the cable intended to connect the TNC-LINKBOX and TNC-EASYCONTROL to the numbered terminals in the BOX.

Terminals Box and plug	Connection
1.	0V / GND
2.	Q0…5 / 24V
3.	I0,2,4,6,8,10 / Closed
4.	I1,3,5,7,9,11 / OPEN

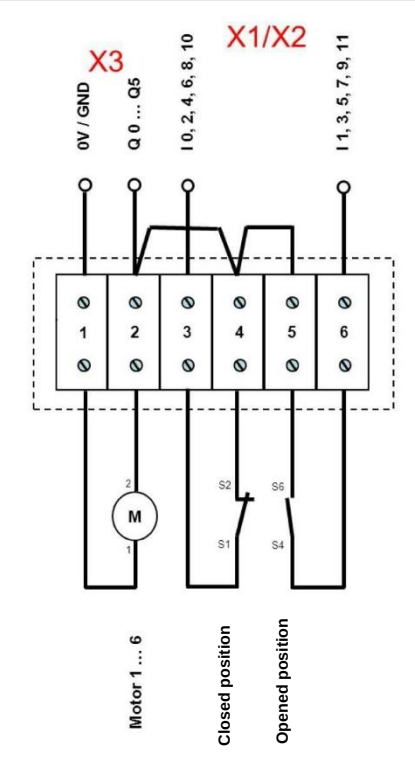
Connection data	
Cable diameter	max. 10.5 mm
	at least 6.5 mm
Connection diameter	max. 2.5 mm²
	min. 0.75 mm²
Connections per pole	1

6 Commissioning

If you do not use the TNC-LINKBOX for easy and quick wiring, conventional wiring with a junction box is also possible. In this case wiring should be as follows:

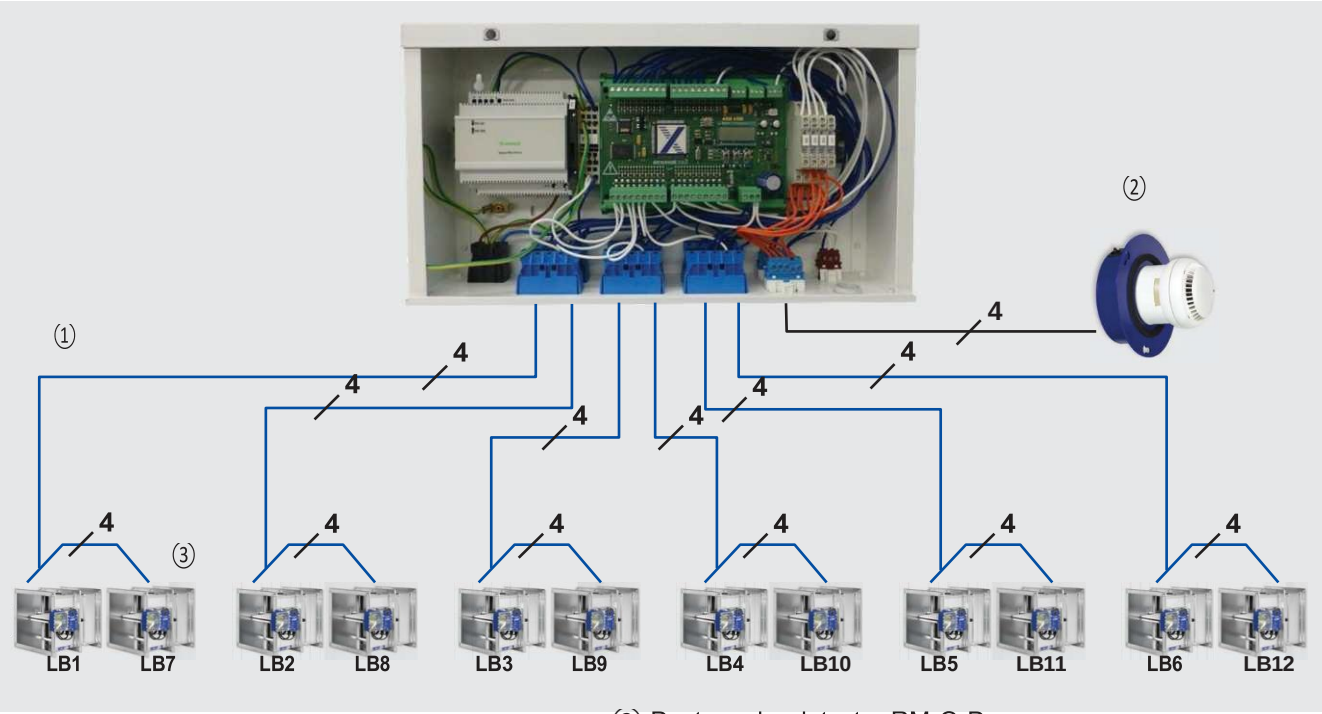
External wiring of a fire damper (standard operation)

Illustration shows fire damper 'power off to close'



6 Commissioning

Parallel operation



Configuration with 12 fire dampers (parallel operation = 2 fire dampers per output)

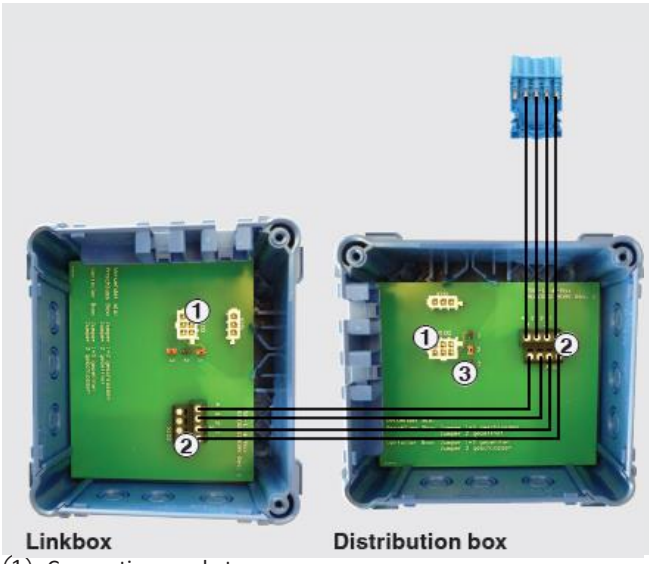
① Type of cable, e.g. HMH 5 x 1.5 mm² (control cable with better behaviour in the event of a fire, free of halogens)

② Duct smoke detector RM-O-D

③ Fire damper with factory mounted LINKBOX (LB)

It is possible to connect the actuators using the TNC-LINKBOX also for parallel operation.

TNC-LINKBOX as a distribution box



① Connection sockets

② X102 terminal strip

③ Jumper

Use of the TNC-LINKBOX as a distribution box for parallel operation (up to 12 fire dampers)

It is possible to use the TNC-LINKBOX also for the parallel operation of two motorised fire dampers. In this case the TNC-LINKBOX acts as a distribution box. This configuration requires a connecting cable between one TNC-LINKBOX and the other. Lead the connecting cable from the double stack terminal block (X102) to the terminal strip (X102) of the second TNC-LINKBOX. Wiring is the same as between TNC-EASYCONTROL and the TNC-LINKBOX.

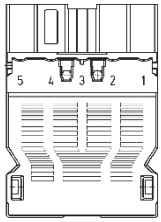
The TNC-LINKBOX acts as a distribution box when both the control cable of TNC-EASYCONTROL and the control cable of the second TNC-LINKBOX are connected to it.

If a TNC-LINKBOX is used as a distribution box, jumper 2 must be closed and jumpers 1 and 3 must be open.

6 Commissioning

Insert the plugs of the control cables for the actuators into the connection sockets.

Connect the actuator cable to TNC-EASYCONTROL using a GST18i5 plug.



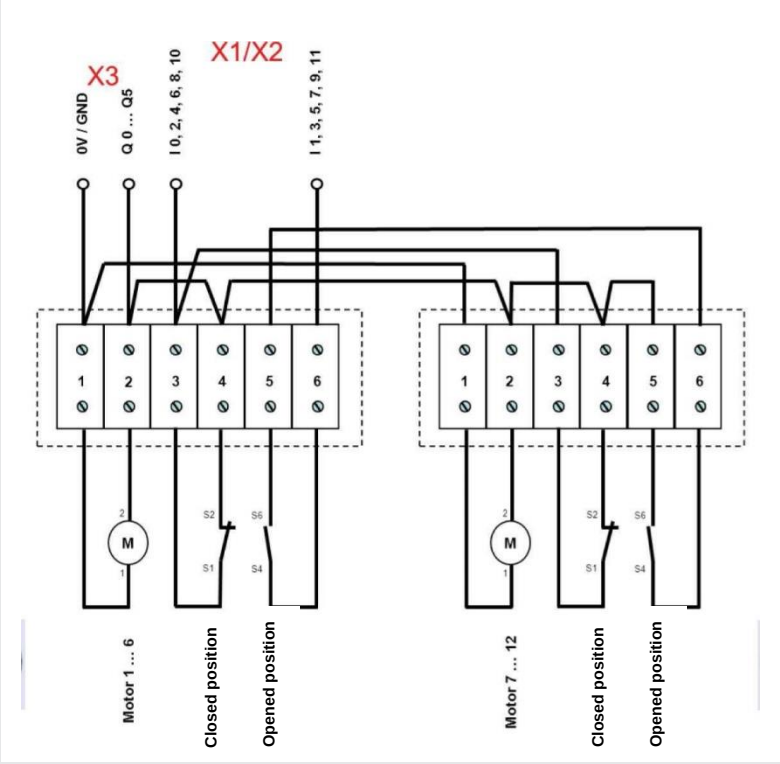
Terminals Box and plug	Connection
1.	0V / GND
2.	Q0…5 / 24V
3.	I0,2,4,6,8,10 / Closed
4.	I1,3,5,7,9,11 / OPEN

Connection data	
Cable diameter	max. 10.5 mm
	at least 6.5 mm
Connection diameter	max. 2.5 mm²
	min. 0.75 mm²
Connections per pole	1

If you do not use the TNC-LINKBOX for easy and quick wiring, conventional wiring with a junction box is also possible. In this case wiring should be as follows:

External wiring of a fire damper (standard operation)

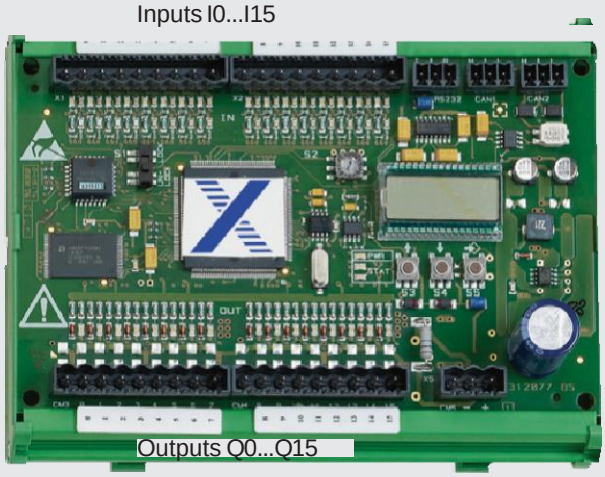
Illustration shows fire damper 'power off to close'



6 Commissioning

Input and output signals

The inputs and outputs on the PCB of TNC-EASYCONTROL which are required for the communication with a higher-level system are already used by the preinstalled application software.

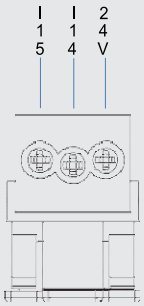


Inputs

The connection for the inputs is made with a GST15i3 plug.

The terminal connections are as follows:

FA input = 1 per TNC Easycontrol

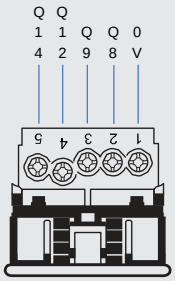


Terminal	Connection
1	24 V
2	I14 Start of functional test: It is possible to start the functional test for all fire dampers with a signal from an external point (e.g. central BMS) and/or with a timer. The damper blades CLOSE and OPEN again. In case the running time is exceeded, the affected damper remains closed, and an alarm is generated (output Q9).
3	I15 External release External signal (NC contact) to open all fire dampers. If you do not use this input, put a wire link between terminals 1 + 3.

Outputs

The connection for the outputs is made with a GST15i5 socket. All outputs are volt-free outputs.

The terminal connections are as follows:

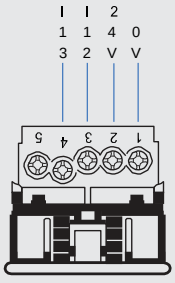


Terminal	Connection
1	0V / GND
2	Q8 Alarm1 Signal for smoke, fire; fire damper is closed
3	Q9 Alarm2 Signal for errors in the functional test; running time and end position error; smoke detector contamination
4	Q12 No fire damper is closed
5	Q14 Functional test is active

Connecting a duct smoke detector

The connection for the inputs is made with a GST15i5 plug.

The terminal connections are as follows:

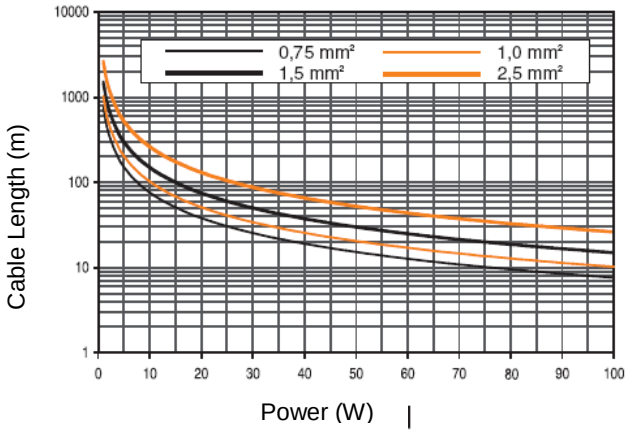


Terminal	Connection
1	0V / GND
2	24 V
3	I12 SD Smoke: When duct smoke detector RM-O-3-D or RM- O-VS-D or the central fi re alarm system sends an alarm signal (NC contact), all fire dampers close, and an alarm is issued (output Q8). If you do not use this input, put a wire link between terminals 2 + 3.

6 Commissioning

Terminal	Connection
4	I13 Duct smoke detector is contaminated: If duct smoke detector RM-O-3-D or RM-O-VS-D sends a contamination signal (NO contact), an alarm is generated (output Q9). This alarm is a warning and is generated when the contamination level is 70 %. All fire dampers remain open

Cable length vs active power applies to DC supply (minimum supply voltage DC 24.0 V)



Connecting display TNC-SVD-EC (optional)

The connection for the inputs is made with a BST14i2 plug.

The terminal connections are as follows:

Terminal	Connection
1+	CAN1 L
2-	CAN2 H

6 Commissioning

0	TNC-EASYCONTROL terminal connections			
	I/O	Designation		Note
Inputs	I0 X1	Fire damper 1 CLOSED		Limit switch for FD1, ncc
	I1	Fire damper1 OPEN		Limit switch for FD1, noc
	I2	Fire damper2 CLOSED		Limit switch for FD2, ncc
	I3	Fire damper2 OPEN		Limit switch for FD2, noc
	I4	Fire damper3 CLOSED		Limit switch for FD3, ncc
	I5	Fire damper3 OPEN		Limit switch for FD3, noc
	I6	Fire damper4 CLOSED		Limit switch for FD4, ncc
	I7	Fire damper4 OPEN		Limit switch for FD4, noc
	I8 X2	Fire damper5 CLOSED		Limit switch for FD5, ncc
	I9	Fire damper5 OPEN		Limit switch for FD5, noc
	I10	Fire damper6 CLOSED		Limit switch for FD6, ncc
	I11	Fire damper6 OPEN		Limit switch for FD6, noc
	I12	SD 1 Smoke		SD switch ncc
	I13	SD 1 Contamination		SD switch noc
	I14	Start of functional test:		Functional test noc
	I15 X3	External release		Release of BMS ncc
Outputs	Q0	FD1		FD actuator 1
	Q1	FD2		FD actuator 2
	Q2	FD3		FD actuator 3
	Q3	FD4		FD actuator 4
	Q4	FD5		FD actuator 5
	Q5	Fire damper6		FD actuator 6
	Q6	Initialisation active		signal noc
	Q7 X4	General alarm	Alarm 1 or Alarm 2	signal ncc
	Q8	Alarm 1	SD Smoke, fire, FD closed	signal ncc
	Q9	Alarm 2	Functional test error, running time and limit switch error, SD contamination	signal ncc
	Q10	Sys error	S2=0 or S2>6, SD contamination, running time and limit switch error	signal noc
	Q11	Fire		signal noc
	Q12	No fire damper is closed		signal noc
	Q13	Smoke		signal noc
	Q14	Functional test is active		signal noc
	Q15	Functional test error		signal noc

6 Commissioning

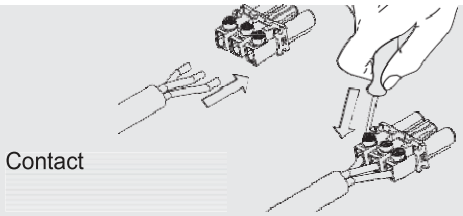
GST connector – assembly information

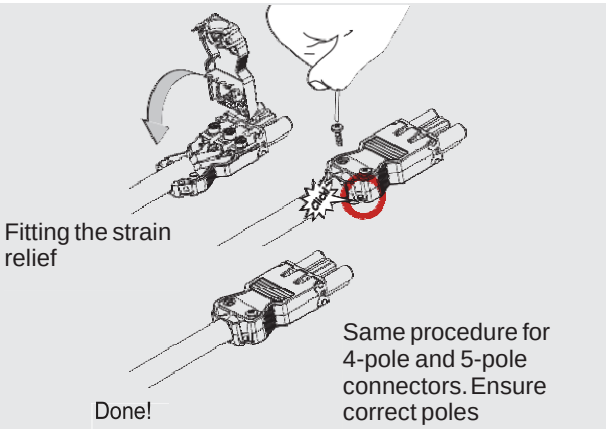
Connector with screw connection

Cable preparation

All dimensions are given in mm

One wire or fine wire conductors, 0.75 to 2.5 mm², without wire end sleeves.





Please note:

Only skilled qualified electricians are allowed to work on electrical systems. GST connectors (according to IEC 61535) must only be installed by appropriately trained individuals. The local regulations for health and safety at work and general safety regulations also apply.

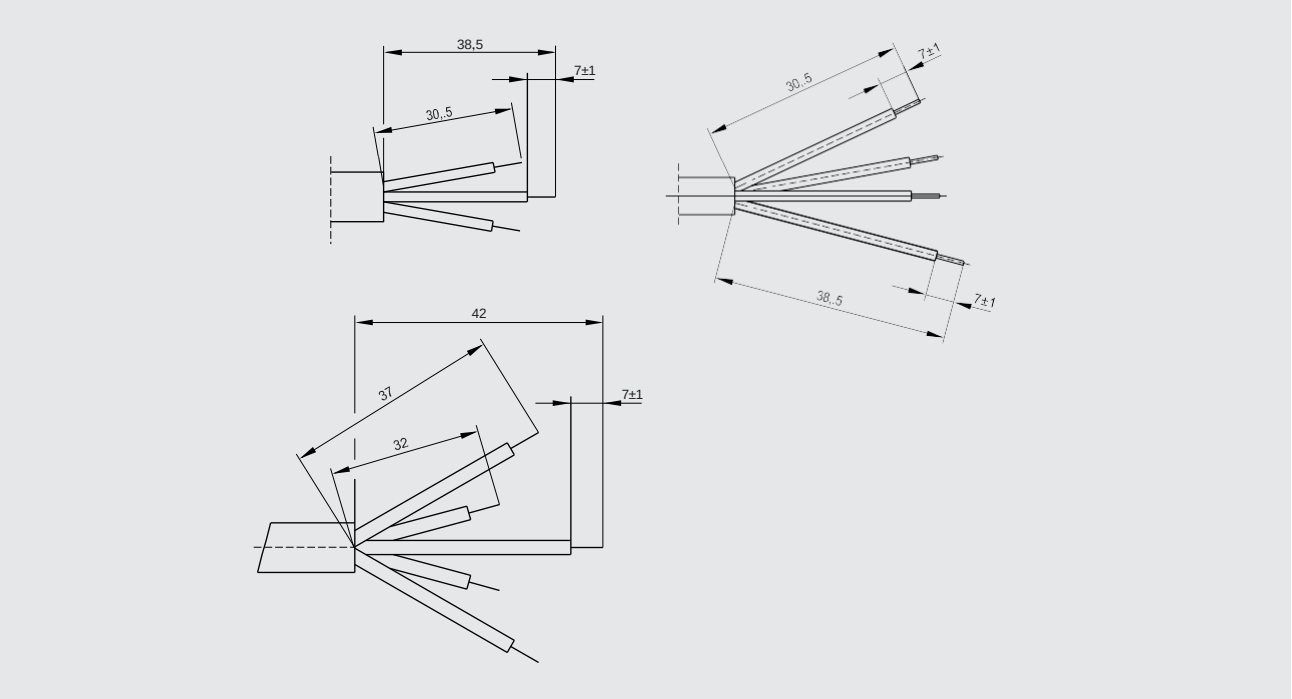
When installing GST connectors, please note:

Each GST has a certain colour which identifies its mechanical coding. Only sockets and connectors with the same colour can be connected. WIth one exception: Black and white connectors have the same coding. According to the local regulations for health and safety at work and general safety regulations, lockable plugs have to be used.

GST distributors and snap-in connectors are lockable. For non-fixed connections with ready-to-use cables, soldered parts or flat cable adapters, an interlock has to be retrofitted (see accessories). The interlock has to lock into place.

According to VDE0100-520, connections, joints and plug connections on cables must not be subjected to mechanical loads. Never use any force to connect or disconnect GST connectors. A tool, e.g. a screw driver, is required to open interlocks, then it is easy to disconnect connections.

Never connect or disconnect a GST connection while a voltage is being supplied. Do not use any third party components.



6 Commissioning

Operating status menu on the PCB display

The LC display on the PCB is used to display status information and operating values. Buttons S3, S4 and S5 are used for menu control.

Normal operation

During normal operation 'bS OK' is displayed.

Preselection

Preselecting fire dampers (FD1 to FD6)

Use button S2 to select the number of connected fire dampers (FD 1 to FD 6). The selected value will be set once you switch on the control (power on). Subsequent changes using S2 will not affect the control. If you enter a wrong value, e.g. S2 = 0 or >6, error message 'ErrorS2' will be displayed, and 'Q10 Sys error' will be set. Connect the dampers according to the wiring diagram in ascending order, starting with FD1 (FD1, FD2…FD6).

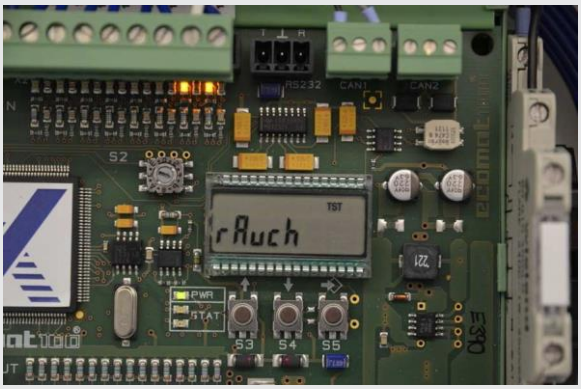
Initialisation

During initialisation, e.g. after switching on the control, 'bS Init' is displayed. 'bS Init' remains displayed until all fire dampers are open. After about 145 s, 'bS OK' is displayed. During initialisation, output 'Q6 Initialisation active' is set. The system is released 10 s after all fire dampers have been opened. Output 'Q12 No fire damper is closed' is switched. During this phase no operation is possible using the display. During initialisation, the running time for opening the fire damper is being monitored. If a fire damper fails to open within the set period of time, this fire damper is closed, and a message is displayed. Output 'Q12 No fire damper is closed' remains switched off, and output 'Q9 Alarm 2' is switched off.

Functional test / monitoring of the running time

The functional test for the fire dampers is started on input I14 (positive edge ↑), either by pressing a button or due to a signal from a higher-level system. During the test, 'bS tESt' is displayed, and output 'Q14 Functional test is active' is set. Output 'Q12 No fire damper is closed' is switched off. The functional test is interrupted only in the event of a fire (fire damper closes) or when smoke is detected and signalled to input 'I12 SD 1 Smoke'. The closure time (25 s) and opening time (145 s) for the fire damper is monitored also during the functional test. If a fire damper fails to open or close during the set period of time, the fire damper is closed and displayed. Output 'Q12 No fire damper is closed' is not switched, output 'Q9 Alarm2' is switched off, and output 'Q10 Sys error' and output 'Q15 Functional test error' are set. The next functional test is only possible after reset.

Smoke detection



If smoke is detected and signalled to input 'I12 RM 1 smoke', the message 'rAuch' is displayed, all fire dampers close, 'Q8 Alarm 1' is switched off, and 'Q13 Smoke' is set. If the duct smoke detector is contaminated, signal at input 'I13 RM 1 Contamination', the message 'SchmutZ' is displayed, 'Q10 Sys error' is set, and 'Q9 Alarm 2' is switched off.

Error messages

The following error messages may be displayed:

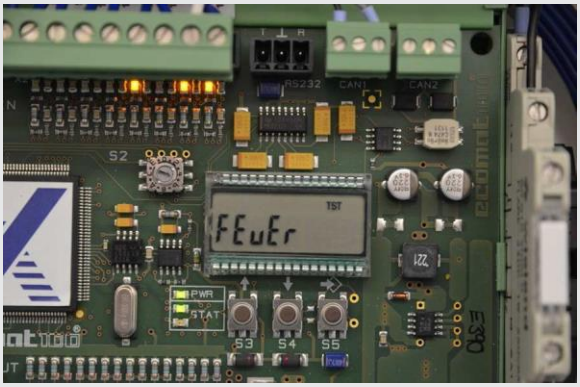
Error when opening (FEauF) fire damper bS1…bS6, running time error during initialisation and functional testing. 'FeaufbS1' 'FeaufbS2' 'FeaufbS3' 'FeaufbS4' 'FeaufbS5' 'FeaufbS6'. If during initialisation or functional testing a fire damper fails to open within 145 s, the fire damper is closed, an error message is displayed, and output 'Q9 Alarm 2' is switched off.

Error when closing (FE Zu) fire damper bS1…bS6, running time error 'FE ZubS1' 'FE ZubS2' 'FE ZubS3' 'FE ZubS4' 'FE ZubS5' 'FE ZubS6'

If during functional testing a fire damper fails to close within 25 s, the fire damper is closed, an error message is displayed, and output 'Q9 Alarm 2' is switched off.

6 Commissioning

Fire alarm (FEuEr) for fire damper bS1…bS6



FeuErbS1 'FeuErbS2' 'FeuErbS3' 'FeuErbS4' 'FeuErbS5' 'FeuErbS6'

The closing of a fire damper that should in fact open (FD OPEN) indicates a fire (thermal release). All fire dampers close, the triggering fire damper is displayed, output 'Q8 Alarm 1' is switched off, 'Q11 Fire' is switched on.

Any fire alarm remains saved (failsafe) and has to be reset on the operating menu 'rESEt'.

IMPORTANT
In case of a 4-wire connection, 24 V DC are supplied to the limit switches only when the fire damper is open or opened (outputs Q0…Q5 are set).

Error position, switch S2 (rotary switch) 'ErrorS2'

If the rotary switch is in position S2 =0 or >6, 'Q10 Sys error' is set. The number of connected fire dampers 1…6 has not been correctly set.

Controlling the operating menu

Releasing the operating menu

To access the operating menu, keep buttons S3↑ and S4↓ on the PCB pressed for 2 seconds. 'rESEt' will be displayed. Use buttons S3↑ and S4↓ in the menu to select an item. Activate the function with S5.

Reset 'rESEt'

Use this menu item to reset the system after a fire alarm or any other error. After resetting the system, the initialisation process starts again, i.e. all fire dampers OPEN. Use buttons S3↑ and S4↓ in the menu to select an item. Activate the function with S5.

Manual control of a fire damper 'bS OPEN.. / bS CLOSED..'

Here you can manually open or close any connected fire dampers (according to the I/O list). Terminal connections start with FD1! Use buttons S3↑ and S4↓ in the menu to select an item. Activate the function with S5.

Fire damper functional test 'bS tESt'

If you select this item and press button S5→, the test run for all connected fire dampers starts. Use buttons S3↑ and S4↓ in the menu to select an item. Activate the function with S5.

Language 'Deu / En9 / Suo'

Language selection German - English - Finnish. Use buttons S3↑ and S4↓ in the menu to select an item. Activate the function with S5.

'xxxx'

Displays the number of functional tests. Use buttons S3↑ and S4↓ in the menu to select an item.

'xxxxx SW'

The application software version is displayed. Use buttons S3↑ and S4↓ in the menu to select an item.

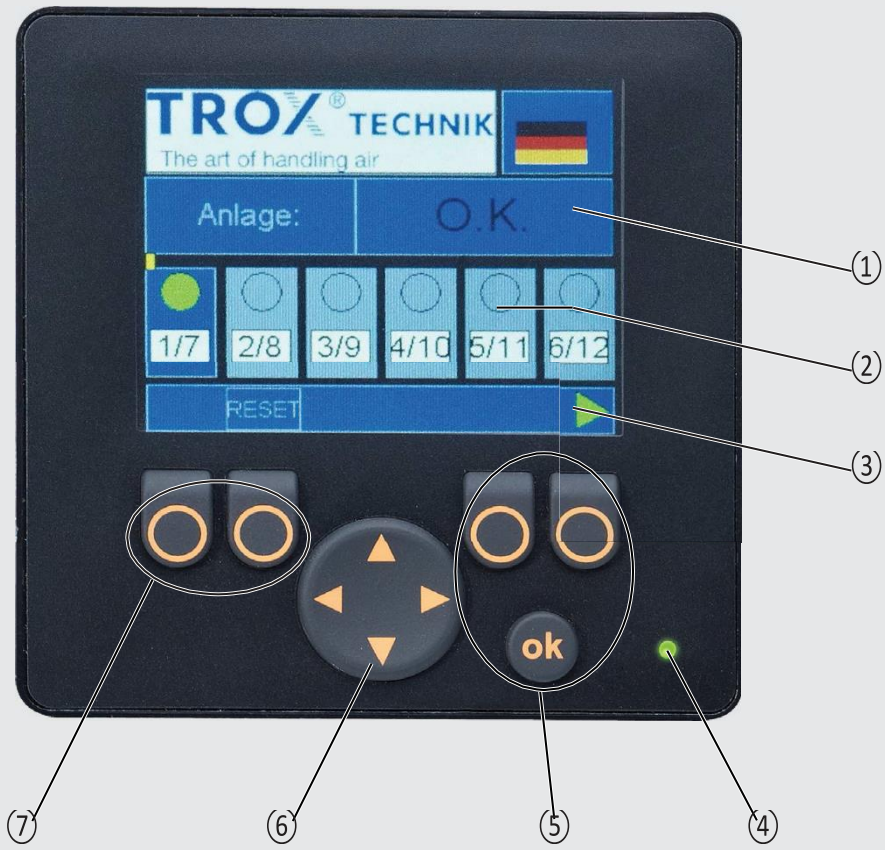
'EXIt'

Note: Closing the menu using 'EXIt' requires that all fire dampers are OPEN.

Use buttons S3↑ and S4↓ in the menu to select an item. Activate the function with S5.

6 Commissioning

Operation and display

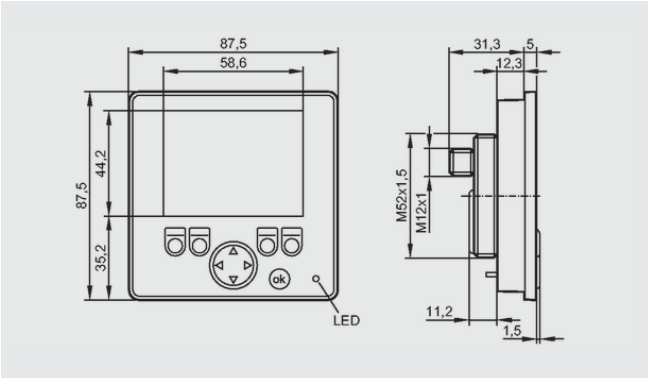


① Messages
② Fire damper 1/7 to 6/12
green = fire damper OPEN
yellow = fire damper actuator is running
red = fire damper CLOSED / error
③ Function bar
④ LED
green = Display
OK red = error
⑤ Function buttons
⑥ Cursor
up / down
left / right
⑦ Function buttons

The symbols in the function bar correspond to the function buttons below. Use the function buttons to select a menu or to activate a function.

6 Commissioning

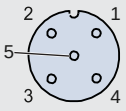
Dimensional drawing



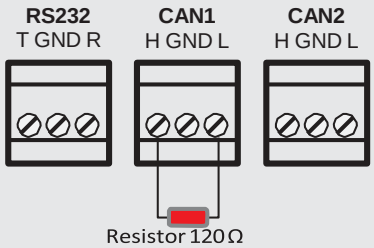
Technical data for 2.8" colour LCD	
Display	2.8" TFT colour LCD
Resolution	320 x 240 pixels
Colours	256
Backlighting	LED
Dimensions (BxHxT) [mm]	87.5x87.5x37.7
Casing material	Plastic, black
Buttons	5 function buttons
Rocker switch	Cursor function (up, down, left, right)
IP protection level	IP 67 when installed in the front panel of the casing, otherwise IP 65
Operating temperature [°C]	-20…+70
Supply voltage [V]	8…32 DC
Current consumption [mA]	70 at 24VDC
CAN interface	CAN1 for the connection to an external control panel

Connecting cable core identification

Plug side, display, M12 plug connection

Supply, CAN		
	1	n.c.
	2	8 ... 32 V DC
	3	GND
	4	CAN_H
	5	CAN_L

Terminals on the control PCB



There is no resistor for preconfigured cables.

Using the colour display

Getting started
Initialisation after you switch on the control
- The connected fire dampers open
- Duration: about 170 s (displayed in yellow).

- System OK
- The connected fire dampers are open (displayed in green)

Menu change with ▶

F button below

- Enter the password with numbers **2-2-2** using the cursor button ▶
- Confirm with **OK**

Language selection
German - English - Finnish with
F button below

6 Commissioning

Manual control of the fire damper

- Manual mode preselection using the function button below

Manual control

- Select fire damper with ▷
- Open fire damper with △
- Close fire damper with ▽
- ◁ Menu change with
- using the function button below

Functional test

- Functional test preselection using the functional button below
- Menu change with

- Start test with the functional button below
- Counter reset (set test cycle counter to 0) using the function button below

- Test is active
- Duration: about 170 s (displayed in yellow).
- Once the test has completed successfully, change the menu using the function button below

6 Commissioning

Fire alarm
- Thermal release of the fire damper
- All fire dampers close (displayed in red)
- Acknowledgement/reset with the function button below

Smoke
- Smoke detection by duct smoke detector
- All fire dampers close (displayed in red)
- Acknowledgement/reset with the function button below

System error
- Duct smoke detector is contaminated
- Fire damper running time error or limit switch error (affected fire damper is displayed in red)
- Check rotary switch S2
- Acknowledgement/reset with the function button below

Release
- No release signal to input I15
- All fire dampers close or remain closed (displayed in red)
- Supply 24 V DC control voltage to I15

CAN error
- Communication with control has failed (displayed in red)
- Check the bus cable to the controls
- Is a 120 Ω resistor connected?

6 Commissioning

LED/buzzer with acknowledgement function

Function

The device transforms electrical signals to visible (permanent light) and audible (buzzer) signals. To switch off the buzzer, press the domed part.

Warning!
The sound pressure level of the acoustic element may damage your hearing. Keep a distance!

If the failure of a signal device may put people at risk or lead to damage to property, additional safety measures must be installed to prevent this.

Cleaning

Use only mild, non scouring cleaning agents. Never use aggressive cleaners such as solvents or benzine.

Maintenance

The device is maintenance free.

Technical data for LED/buzzer	
Casing	PC-ABS-Blend
Dome cap	PC, transparent
Illumination pattern	LED continuous
Type of tone	Continuous tone
Dimensions	(ø x H) 49.5 mm x 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
IP protection level	IP65
Service life	50,000
Connection	Plug with screw terminal, max. 0.5 mm²

6 Commissioning

Connecting mechanical dampers and capturing their end positions

Signals from mechanical dampers can be received at the inputs of TNC-EASYCONTROL.

It is not possible to combine mechanical dampers and dampers with an electrical actuator.

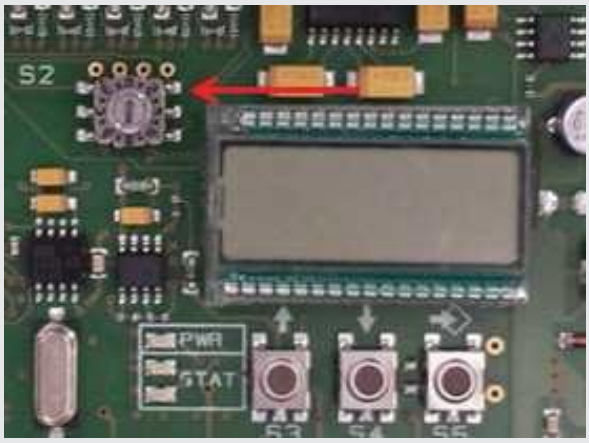
Set selector switch S2 to C (see arrow).

The wires for the fire damper position signals are connected to the plugs.

Contacts 3 (FD1) and 4 (FD2) are the inputs for the position signals.

Note: Counting is from the right to the left.

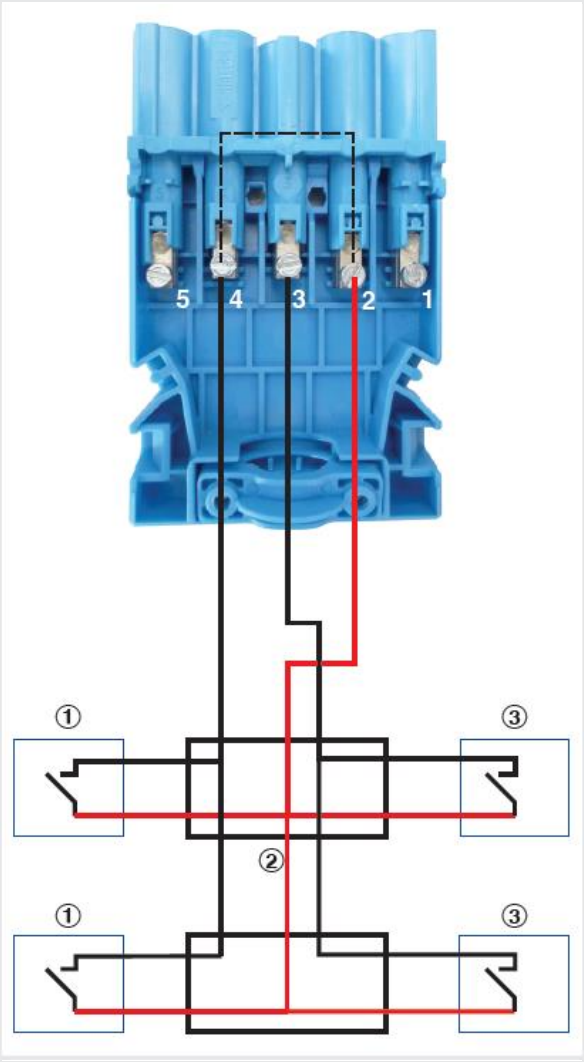
24 V DC must be supplied to the inputs of TNC-EASYCONTROL, hence the limit switches must also be supplied with a 24 V DC operating voltage. This voltage is supplied by the plug on terminal 2.



Plug assignment

All non-used inputs of the plug must have a wire link.

A 'duct smoke detector' switch can be used to connect an RM-O-3-D.
The duct smoke detector does not affect the fire dampers; rather, it detects smoke or contamination and signals it to the display or to the central BMS.



① Fire damper 2
② Junction box
③ Fire damper 1

Mechanical dampers

- Set the selector switch S2 to C
- Select the language (German or English) using the function button below

Fire alarm

- The contact has been interrupted – thermal release of the fire damper
- Acknowledgement/reset with the function button below

Smoke

- Smoke detection by duct smoke detector
- Acknowledgement/reset with the function button below

TROX GmbH

Heinrich-Trox-Platz
D-47504 Neukirchen-Vluyn

Telefon +49(0)28 45/2 02-0
Telefax +49(0)28 45/2 02-2 65
E-Mail trox@trox.de
www.trox.de