



TNC-DP connector



TNC-70113



TNC-70413



TNC-A4000

TROXNETCOM AS-i

AS-i installation set



Accessories for easy and safe installation

All products are of high quality and meet the requirements of AS-Interface

- Asymmetrically shaped cable to ensure error-free connection (reverse voltage protection)
- Easy wiring due to flat cable insulation displacement connectors ('click and go')
- Protection level up to IP 67

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Description



TROXNETCOM AS-i
AS-i installation set

Application

- A TROXNETCOM AS-i system does not require any particular topology
- Communication lines can be laid in a tree topology that makes the best possible use of the building structure
- Connection to the yellow AS-i flat cable is made using insulation displacement connectors
- No wire end sleeves are required
- The cable is cut to the required length and connected to modules and flat cable distributors by flat cable insulation displacement connectors
- The AS-i cable is used for data and energy for AS-i field bus modules and damper actuators (24 V) or for duct smoke detectors
- No terminal resistors are required

Order code

TNC – A4000

1

1 Type

- TNC-A4000**¹⁾ Flat cable
TNC-70381 Flat cable distributor
TNC-70413²⁾ End seals for flat cables
TNC-70113²⁾ Heat shrink caps for flat cables
TNC-70067³⁾ Cable clips for flat cables
TNC-DP connector

¹⁾ Standard length = 100 m; 50 m roll upon request

²⁾ pack of 10 pieces

³⁾ pack of 100 pieces

Description



TNC-A4000

Application

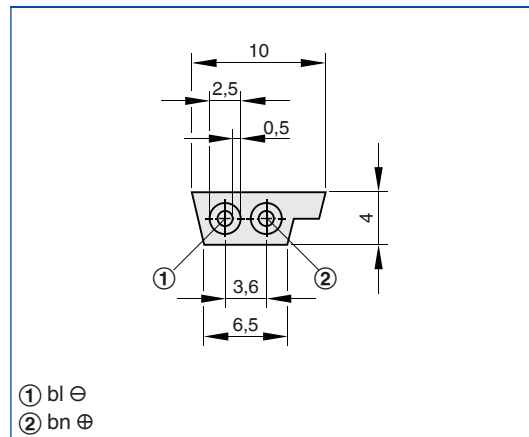
- AS-i flat cable for the transmission of data (communication) and voltage to the slaves
- For use with flat cable connectors and mounting bases

Technical data

Description	TNC-A4000
Temperature range	-40 to 85 °C
Material	EPR (ethylene propylene); free of halogens
Colour	Traffic yellow
IP protection level	IP 67 in connection with flat cable mounting base
Wire diameter	2 × 1.5 mm ²
Wire colours	Brown (AS-i +), blue (AS-i -)
Special features	Reverse voltage protection due to special shape
Available lengths	50 or 100 m

Dimensions

AS-i installation TNC-A4000



Dimensions

Standard description (characteristics)

- AS-i flat cable for use with flat cable insulation displacement connectors and Compact modules, available as a roll of 50 m or 100 m
- Supply voltage: 26.5 – 31.6 V DC (AS-i)
 - Electrical design: AS-i
 - Connection: 2 × 1.5 mm²
 - Ambient temperature: -40 to 85 C°
 - IP protection level: IP 67
 - Make: TROX GmbH or equivalent
 - Type: TNC-A4000

Description



TNC-70381

Application

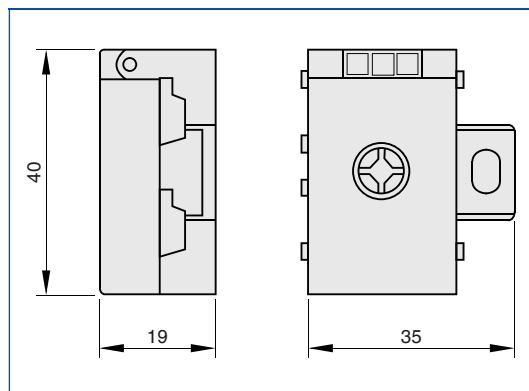
- Flat cable distributor to create a topology
- Distributors may be connected even while a voltage is being applied
- To distribute power from one to two cables

Technical data

Description	TNC-70381
Electrical design	AS-i/24 V
Max. current load per module	8000 mA
Max. tightening torque	1.65 Nm
Ambient temperature	-25 to 75 °C
IP protection level	IP 67
Casing materials	PA 6 GF35 Grivory
Weight	0.025 kg
Notes	Flat cable cannot terminate in the flat cable distributor. Use an end seal or heat shrink cap for sealing.
Accessories (optional)	Flat cable end seal TNC-70413, heat shrink cap TNC-70113

Dimensions

AS-i installation TNC-70381



Specification text

Standard description (characteristics)

Flat cable distributors allow for an inexpensive and quick wiring of AS-i installations. Distributors are available for one or two AS-i flat cables.

- Rating: AS-i/24 V
- Casing materials: PA 6 GF35 Grivory
- Ambient temperature: -25 to 75 °C
- IP protection level: IP 67
- Make: TROX GmbH or equivalent
- Type: TNC-70381

Description



TNC-70413

Application

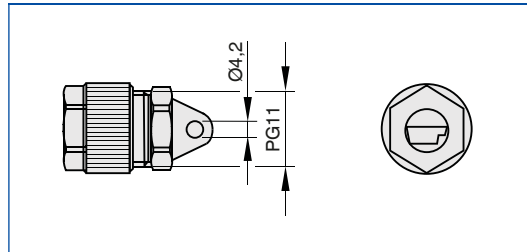
- To prevent short circuits, cable ends (bare wire ends) should be protected from moisture and from accidental contact
- Protect cable ends with an end seal (TNC-70413) or with a heat shrink cap (TNC-70113)

Technical data

Description	TNC-70413
Temperature range	-20 to 70 °C
Casing	ULTRAMID; seal: NBR
IP protection level	IP 67
Tightening torque	2 Nm

Dimensions

AS-i installation TNC-70413



Specification text

Standard description (characteristics)

End seal to protect the ends of flat cables, TNC-70413.

- Casing materials: ULTRAMID; seal: NBR
- Ambient temperature: -20 to 70 °C
- Make: TROX GmbH or equivalent
- Type: TNC-70413

Description



TNC-DP connector

Application

- For the connection of a PROFIBUS controller or display to the PROFIBUS bus
- Easy assembly
- With terminal resistor

Technical data

Description	TNC-DP connector
Supply voltage	4.75 – 5.25 V DC (to be provided by the terminal unit)
Terminal resistor	Integral resistor can be set using the slide switch
Transfer rate	Max. 12 Mbit/s
Cable routing	35° angle
PROFIBUS component	SUB-D socket, 9-pole
PROFIBUS bus cable	4 rail mount terminals for wires up to 1.0 mm ²
Ambient temperature	0 – 60 °C
Storage temperature	-25 to 80 °C
Relative humidity	Max. 75 % at 25 °C
IP protection level	IP 20

Specification text

Standard description (characteristics)

- One PROFIBUS DP connector per AS-i DP controller and DP master system (display).
- Supply voltage: 4.75 – 5.25 V DC (must be provided by the terminal unit)
 - Cable routing: 35° angle
 - Ambient temperature: 0 – 60 C°
 - IP protection level: IP 20
 - Make: TROX GmbH or equivalent
 - Type: TNC-DP Stecker

TROXNETCOM

Basic information and nomenclature



- Communication systems for fire protection systems
- Colour codes according to IEC 60757
- AS-Interface
- LON

Description

Information and communication are becoming more and more important in today's world. People not only want more information, they also want more detailed information. This development is also visible in building automation, and there is no end in sight. A building becomes 'transparent' through distributed intelligence and new decentralised communication systems.

These new technologies allow us to develop bespoke system solutions for various building services and to integrate them with building management systems. In this way, the best solutions for the different building services can be combined to create the best possible overall solution. Decentralised communication systems offer you the most advanced technology for your application requirements.

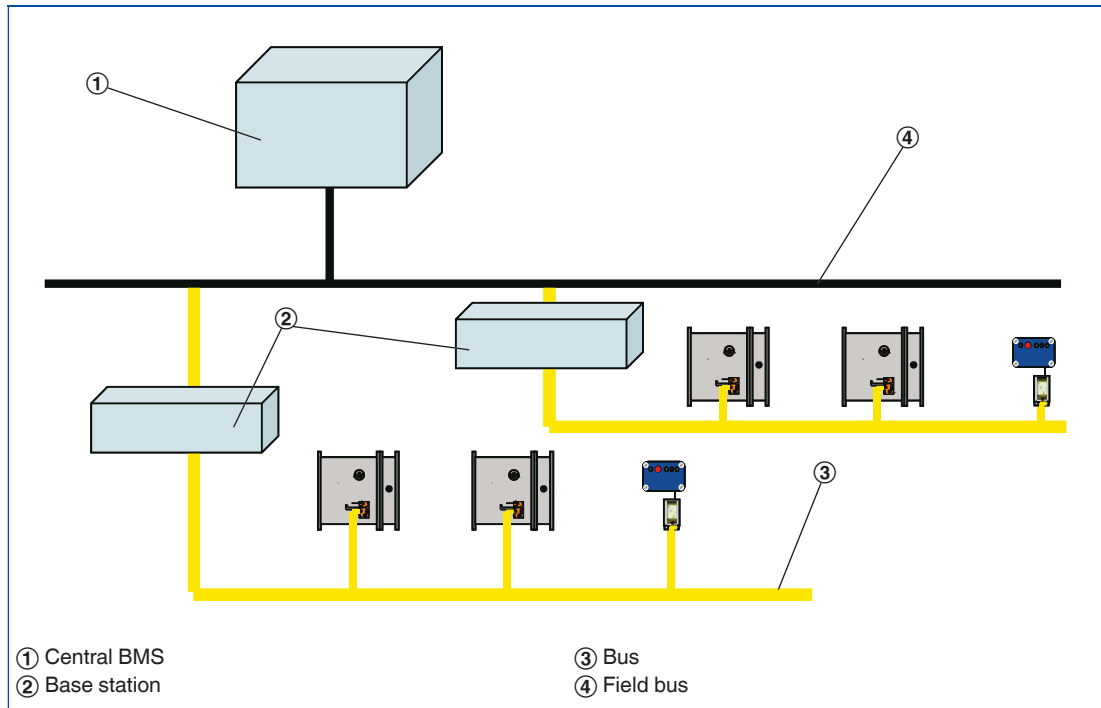
Communication systems for fire protection systems

The functional safety of programmable electronic systems is becoming more and more important in fire protection and is implemented with regard to protection goals and risks. According to IEC 61508, the requirements for these systems are based on a risk analysis. Components are given an SIL rating (safety integrity level) and must meet the corresponding requirements to ensure safety even in case of a malfunction.

General advantages of decentralised bus systems

It is no longer necessary to wire every single actuator and every single controller. Modern bus systems only need one bus cable, and in some cases a supply cable, to connect all components. This saves not only installation time but also cables, connectors, terminal blocks, and control cabinet space. It also drastically reduces the fire load and the installation costs. All signals from all components on a bus can be retrieved and recorded by the central unit. Inspection is simplified, and measurement and control can be optimised.

Communications system



Wiring

Colour codes according to IEC 60757

Code	Colour
BK	black
BN	brown
RD	red
OG	orange
YE	yellow
GN	green
BU	blue

Colour codes according to IEC 60757

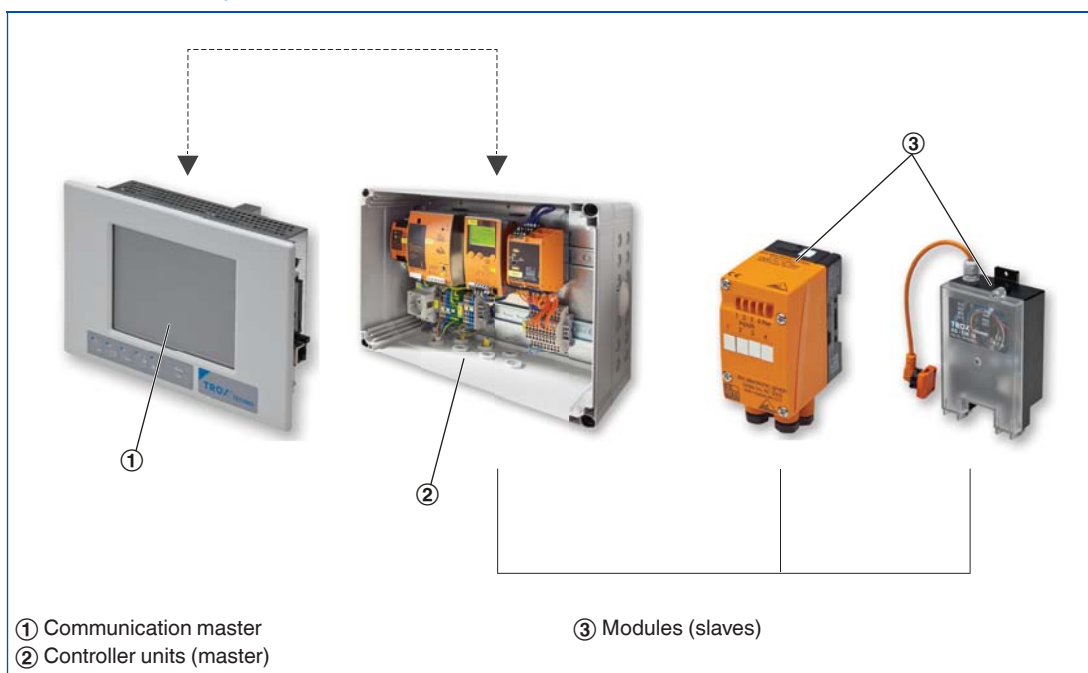
Code	Colour
VT	violet
GY	grey
WH	white
PK	pink
TQ	turquoise
GNYE	green-yellow

Description

The AS interface is a world-standard bus system according to EN 50295 and IEC 62026-2. It enables the integration of different components (modules) in a network regardless of the manufacturer and the design. The modules control actuators and/or receive signals from sensors. TROX provides a system for controlling fire dampers, smoke protection dampers and smoke control dampers based on the AS-i standard. TROX modules are characterised by a wide spectrum of functions yet simple cabling.

Special characteristics

- Data exchange and power supply with just one cable
- Central control of actuators and monitoring of damper blade positions and duct smoke detectors
- Simple commissioning using standardised software
- Automatic function test including data logging

The system**Communications system**

The communication master is the central display and control panel for the entire system.

- Connection of up to 28 controller and power units
- Display of operating status
- Operation of actuators
- Menu-driven operation in case of errors or malfunctions
- System configuration at the time of commissioning
- Logging of function tests and error messages

The controller and power unit combines the control functions, the power supply, and the data exchange for all components on the bus.

- The controller and power unit is installed near the modules, e.g. as a floor distributor
- With TNC Basic User Software for fire and smoke protection
- Communication interface to higher level systems (BACnet/Modbus)
- Display, also for operation
- Units with: 1 master – for 31 modules, 2 masters – for 62 modules

The modules establish the link between the measurement and control signals (sensors and actuators) and the network on the so-called field level. A module provides the supply voltage for the operation of actuators.

- Modules can be part of a fire damper or used separately to connect one or more fire dampers
- Integrated monitoring function, e.g. for running time
- Connection to the bus cable is with a flat cable insulation displacement connector

Description

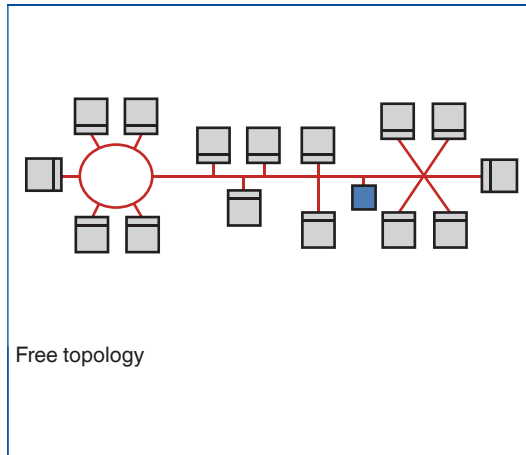
LON indicates a standard local operating network system with manufacturer-independent communications. Data is transferred by a microprocessor supplied by Echelon Corporation using a unified protocol. LonMark defines standards to ensure product compatibility. TROX offers components that meet LON standards. TROX modules are characterised by a wide spectrum of functions yet simple cabling.

Special characteristics

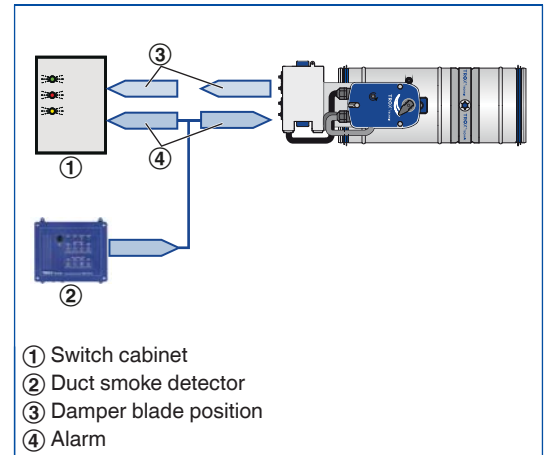
- Data exchange and power supply can be achieved with just one cable
- Decentralised structure with high operational reliability
- Standardised data transfer
- Manufacturer-independent compatibility

The system

Network topology



Binding network variables



Network

The local operating level (subnet) consists of the modules (nodes) and free topology data cables. A subnet can consist of up to 64 nodes or, alternatively, can be extended to 128 nodes using a repeater or router. Physical data transfer is via systems with or without a transfer of supply voltage. All nodes of a subnet must comply with the system. In larger networks the routers link the subnets with each other. The routers communicate with each other via the backbone, on a separate network level. Central monitoring of a LON network is possible and is connected to the backbone or above it.

Data exchange

Network variables are used for the communication between the nodes. These variables ensure unambiguous data exchange between the nodes. For commissioning, it is necessary to link the network variables between the nodes (binding). Project software is used to link the outputs of a node to the inputs of other nodes. Binding information is transferred to the subnet. Binding is carried out by a system integrator.