TROXNETCOM AS-i
Adjustment and addressing devices

For the addressing of field modules (slaves)

Compact device for addressing slaves and writing slave parameters

- Display of all slaves on a bus
- Reading and writing slave data and slave parameters
- Reading of safety codes (AS-i Safety at Work)
- Connection of different modules using a universal adapter

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Description

TROXNETCOM AS-i
Adjustment and addressing devices

Application

- TNC-Z0045: Addressing device for the addressing of active AS-i modules and intelligent sensors and actuators, including display of all slaves on the bus
- TNC-A1145: Diagnosis and analysis tool for AS-i to create test protocols for AS-i networks

Order code

TNC – Z0045

[1]

[1] Type

TNC-Z0045	Addressing device
TNC-A1145	AS-i system tester

6

Description

TNC-Z0045

Application

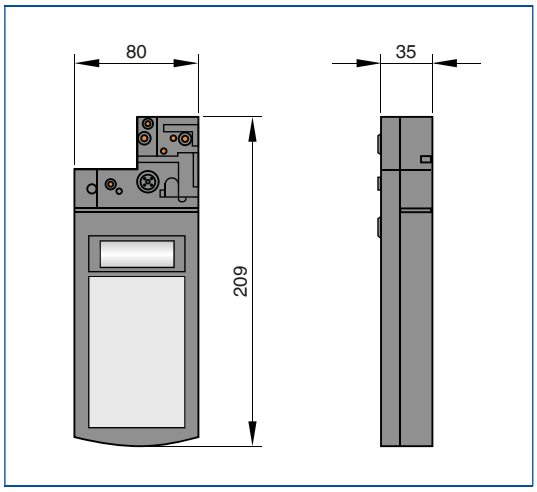
- TROX AS-i addressing device TNC-Z0045 for the addressing of active AS-i modules and intelligent sensors and actuators
- Display of all slaves on a bus
- Reading and writing slave data and slave parameters
- Compact device, with battery pack

Technical data

Description	TNC-Z0045
Keypad	5 push buttons, protected by a membrane
Display	LC display, seven segments
AS-i interfaces	M12 and universal adapter
Interfaces, external voltage supply	Jack socket, 2.1 mm
Connection	Min. 1 AS-i slave, max. 62 slaves
Power supply	Integral battery pack
Operating time	With fully charged battery pack: approx. 8 h; this equals approx. 250 write/read actions
Charger	230 V AC
Charging time	Approx. 12 h
IP protection level	IP 20
Accessories	Addressing plug TNC-70213, addressing cable TNC-11452

Dimensions

AS-i addressing device TNC-Z0045



Specification text

Standard description (characteristics)

AS-i addressing device for commissioning and diagnosis, easy slave addressing.
Compact device with integral universal adapter, including cable.

Description

TNC-A1145

Application

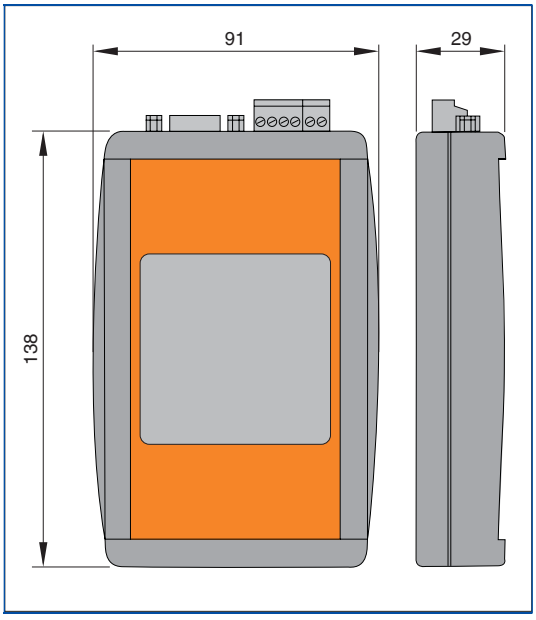
- Passive AS-i participant as an interface for AS-i system analysis with a PC
- Slave lists as system overview
- Slave data (inputs and outputs)
- Configuration data for the connected slaves
- Communication error statistics
- Complete message evaluation in expert mode

Technical data

Description	TNC-A1145
Rated operating current	70 mA
Ambient temperature	0 – 55 °C
MTTF	280 years
EMC	EN 50081-2; EN 61000-6-2
AS-i version	2.1
Controls	LED green (power): Supply voltage OK; LED green (serial active): RS232 interface being used; LED green/red (test): test mode
Interfaces	AS-i; RS-232 (PC connection); trigger input (24 V); trigger output (TTL)
System requirements	IBM-compatible PC with Pentium processor or higher; Windows version 95/98/ME/NT4/2000/XP

Dimensions

AS-i adjustment and diagnosis device TNC-A1145



Specification text

Standard description (characteristics)

- Local diagnosis of the AS-i network
- Creation of test reports for AS-i networks
- User-friendly diagnosis#
  and evaluation using the connected PC
- Rated operating current: 70 mA
- Ambient temperature: 0 – 55 °C
- Make: TROX GmbH or equivalent
- Type: TNC-A1145

TROXNETCOM
Basic information and nomenclature

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

Basic information and nomenclature

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.

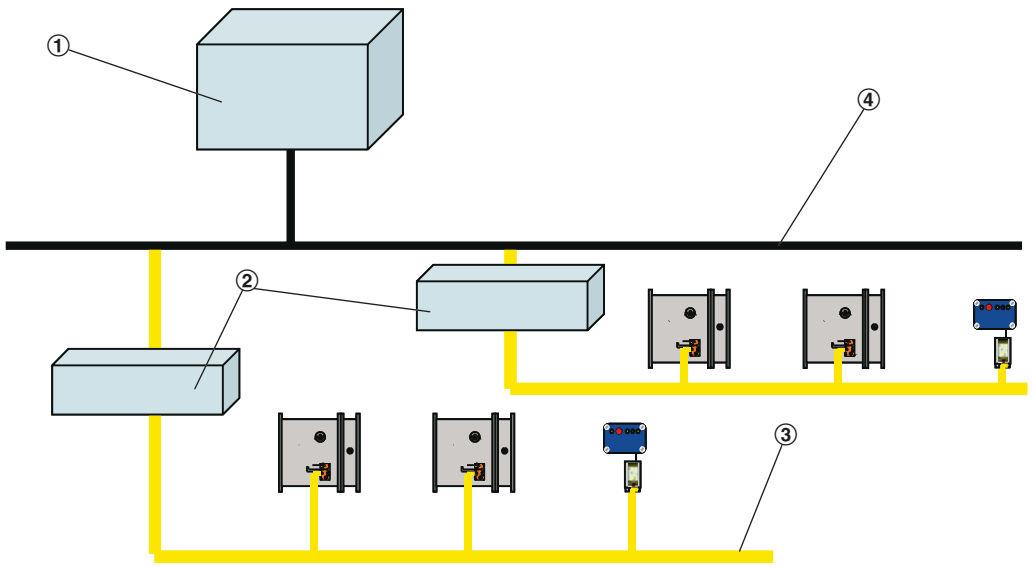
Communication systems for fire protection systems

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



① Central BMS
② Base station
③ Bus
④ Field bus

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

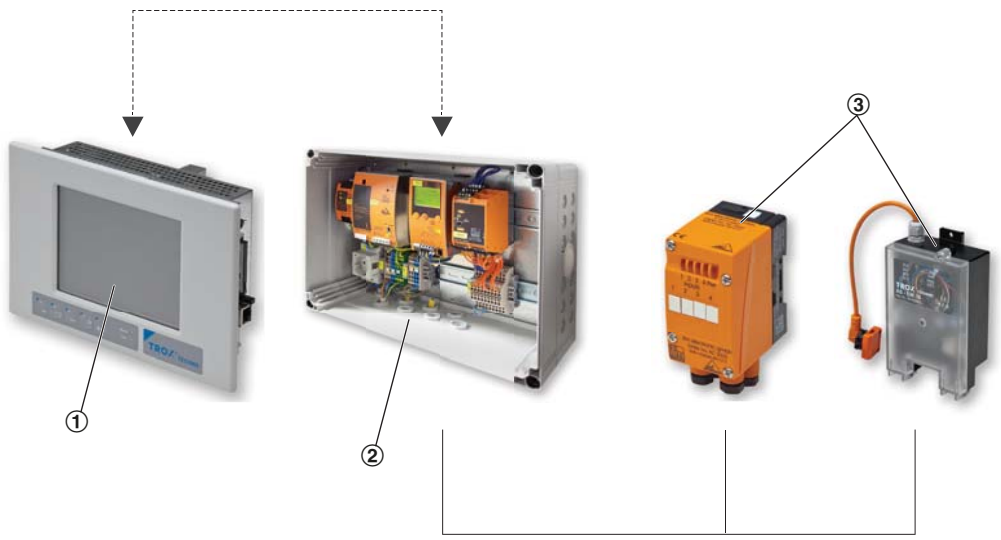
The AS interface is a world-standard bus system according to EN 50295 and IEC 62026-2.
It enables the integration of different components (modules) in a network regardless of the manufacturer and the design.
The modules control actuators and/or receive signals from sensors. TROX provides a system for 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



① Communication master
② Controller units (master)
③ Modules (slaves)

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

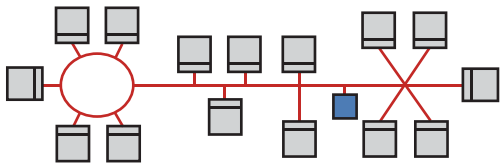
LON indicates a standard local operating network system with manufacturer-independent communications. Data is transferred by a microprocessor supplied by Echelon Corporation using a unified protocol. LonMark defines standards to ensure product compatibility. TROX offers components that meet LON standards. 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

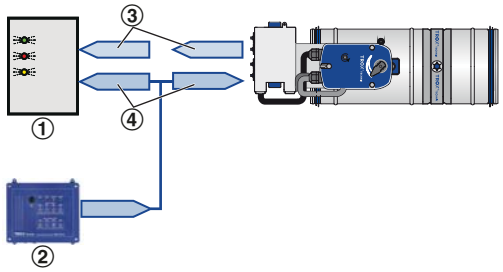
The system

Network topology



Free topology

Binding network variables



① Switch cabinet
② Duct smoke detector
③ Damper blade position
④ Alarm

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.