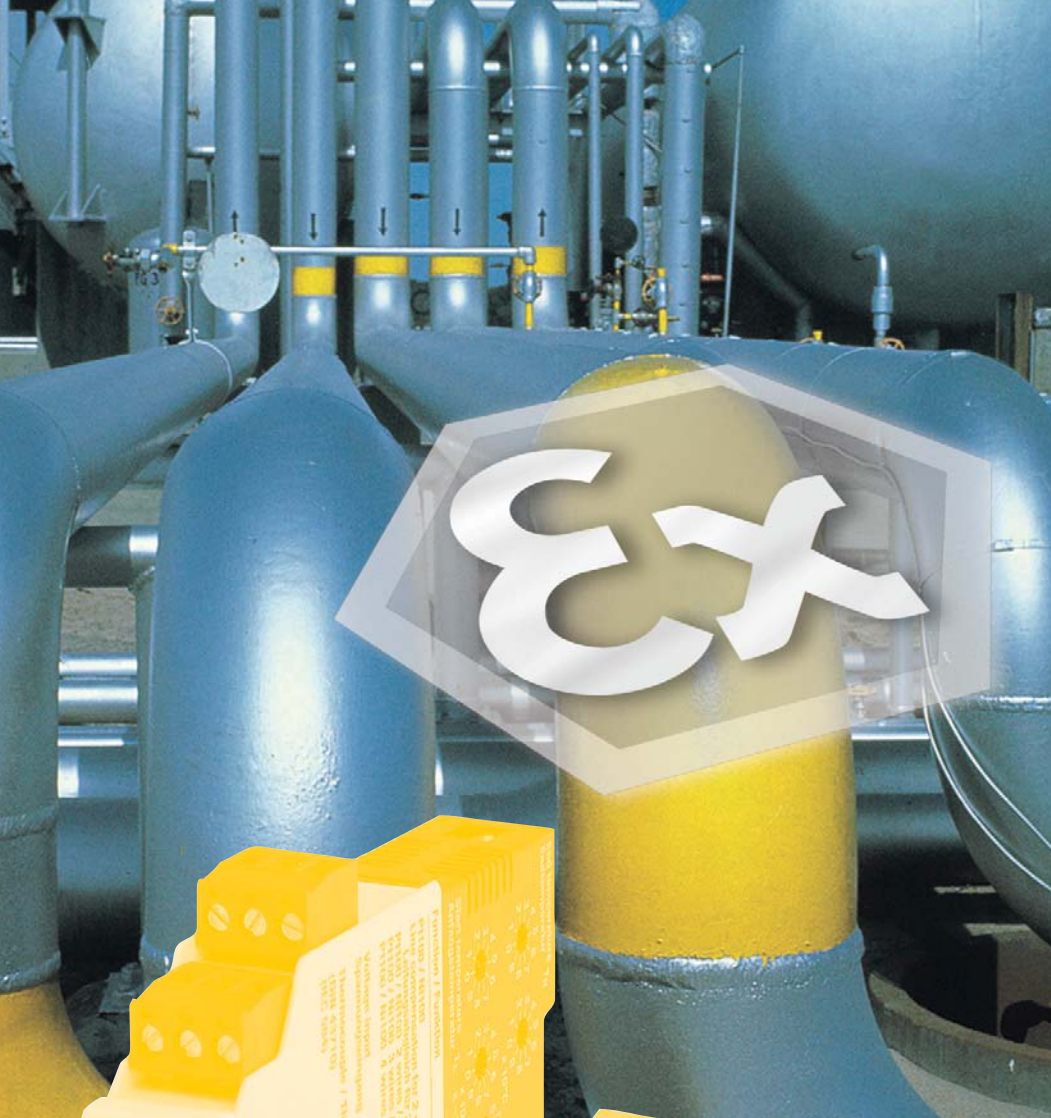


TURCK

Industrial
Automation

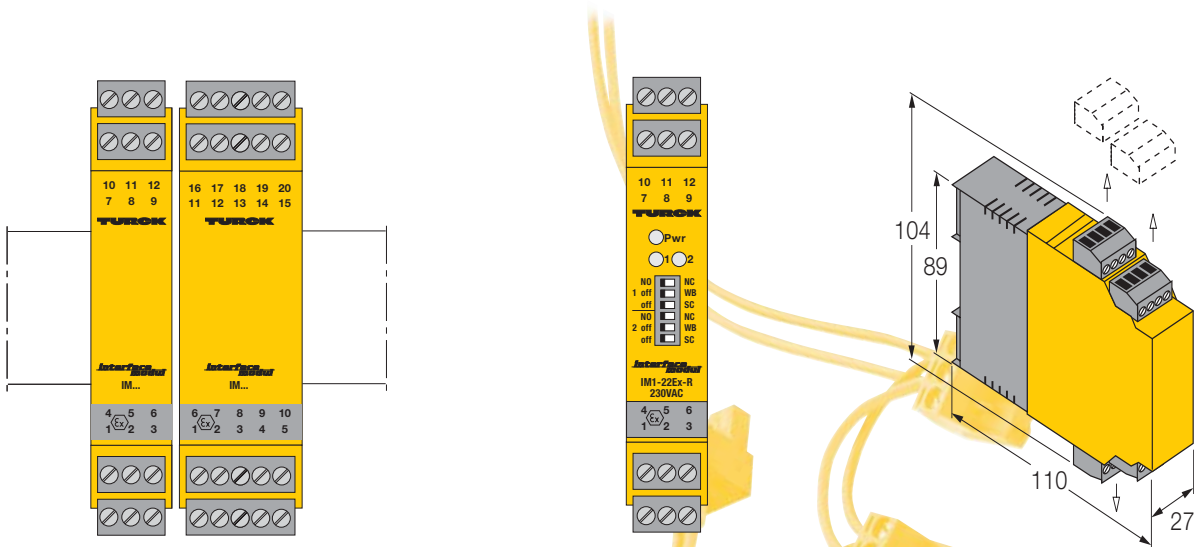
**INTERFACE
TECHNOLOGY
IN MODULAR
HOUSINGS**

**INTERFACE-
MODULE
SERIES**



**interface
modul**

Interface technology in modular housings – series IM Functions and selection guide



The housing concept

Depending on the device's scope of functions, there are housings with a width of 18 or 27 mm, while they are 104 mm high. All modules may be mounted directly next to each other and can be powered via the power bus.

Universal power supply

With a universal power supply ranging from 20 ... 250 VUC, or 20 ... 250 VAC/20 ... 125 VDC for the intrinsically safe versions, the new IM-modules may be connected to practically all industrial power networks. The universal power supply facilitates device selection, as well as device and spare parts inventory management.

Removable terminal blocks

Removable terminal blocks simplify installation and device replacements significantly. The terminals are coded, thus preventing interchange errors. Devices with standard functionality are also available with cage-clamp terminals. The type code must then be expanded with a "CC".

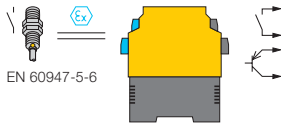
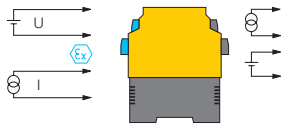
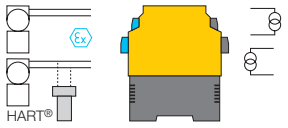
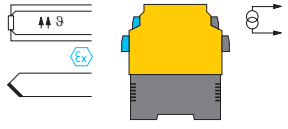
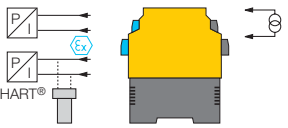
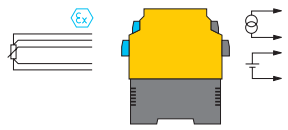
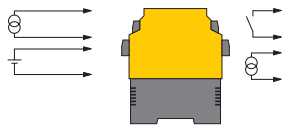
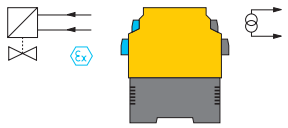
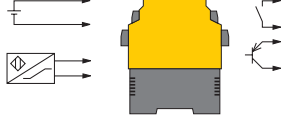
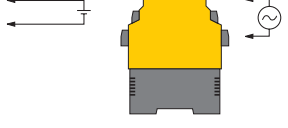
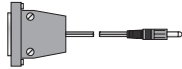
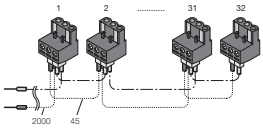

ATEX compliance

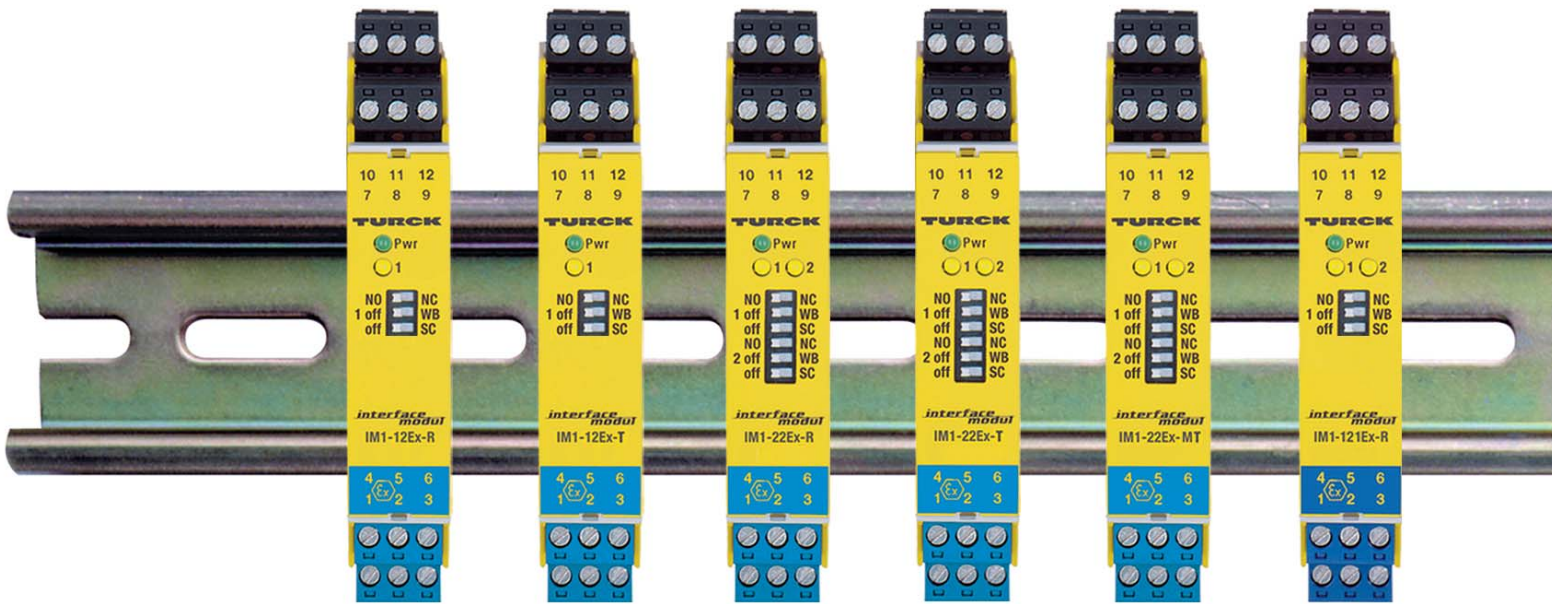
All interface devices of the IM series feature intrinsically safe input and output circuits and are approved according to the new framework directive 94/9/EC, regarding equipment and protective systems intended for use in potentially explosive atmospheres. They can thus be used as associated equipment.

The blue terminals are designated for connection of intrinsically safe signals.



Further information on the ATEX directive is available via the Internet: <http://europa.eu.int/comm/enterprise/atex/index.htm>

Device type	Page	Connection Circuit	Function
IM1-12Ex-R IM1-12Ex-T IM1-22Ex-R IM1-22Ex-T IM1-22Ex-MT M1-121Ex-R IM1-451Ex-R IM1-451Ex-T IM12-22Ex-R	4 4 4 4 4 4 5 5 5		Isolating amplifiers Processing of switching states of mechanical contacts and sensors according to EN 60947-5-6 (NAMUR).
IM31-11-i IM31-12-i IM31-22-i IM31-11Ex-i IM31-12Ex-i IM31-22Ex-i IM31-22Ex-U	5 5 5 5 6 6 6		Analogue data transmitters/ intrinsically safe input isolators Galvanic isolation and/or conversion of analogue current and voltage signals. There are devices with intrinsically safe input and output circuits.
IM33-11Ex-Hi/24VDC IM33-12Ex-Hi/24VDC IM33-22Ex-Hi/24VDC IM33-11Ex-Hi IM33-12Ex-Hi IM33-22Ex-Hi IM33-FSD-Ex/L	6 6 6 7 7 7 7		Isolating transducers Supply and transmission of current signals of 2-wire transmitters located in explosion hazardous areas. HART® devices enable bi-directional communication. This range incorporates devices with and without auxiliary power and active or passive outputs. Series -FSD includes smoke and fire detectors.
IM34-11Ex-i IM34-11Ex-Ci IM34-12Ex-Ri IM34-12Ex-CRi IM34-14Ex-CDRi	7 7 7 7 8		Pt100 measuring amplifiers Linear conversion of temperature values into standard current signals. Thermoelement measuring amplifiers Linear conversion of temperature values, which are detected by a thermo-element, into standard current signals. All customary thermoelements or mV-signals may be connected. Types -Ci, -CRi = programmable via PC using software PACTware™.
IM35-11Ex-Hi/24VDC IM35-11Ex-Hi IM35-22Ex-Hi/24VDC IM35-22Ex-Hi	8 8 8 8		Analogue data transmitters/ intrinsically safe output isolators Galvanic isolation and transfer of analogue current signals into the explosion hazardous area. The family comprises a selection of devices with intrinsically safe output circuits. HART® devices enable bi-directional communication.
IM36-11Ex-i/24VDC IM36-11Ex-U/24VDC IM36-22Ex-i IM36-22Ex-U	8 9 9 9		Potentiometer measuring amplifiers Conversion of the variable resistance values of a potentiometer into standard current and voltage signals. The input circuit is intrinsically safe, so that the potentiometer may be mounted in the explosion hazardous area.
IM43-13-R IM43-13-SR IM43-14-CSRi IM43-14-Ri	9 9 9 9		Limit value monitors Monitoring of standard current and voltage signals relative to pre-set limit values. This series includes devices with three limit values and versions with current output. Types -SR, -SRi feature a manual teach function, whereas types -R and -Ri are adjustable via a coded rotary switch.
IM72-11Ex/L IM72-22Ex/L	10 10		Valve control modules Intrinsically safe supply of magnetic valves, pilot indicators, transmitters etc.
IM73-12-R	10		Coupling devices Galvanically isolated transmission of binary switching states. These devices function as a reliable interface between different potentials.
IM82-2414 IM82-2450	10 10		Power supplies Power supply with galvanic isolation used to power low power consumers, particularly suited for powering the switching and monitoring devices of TURCK's <i>interfacemodul</i> , <i>multimodul</i> und <i>multisafe</i> ® series.
IM-PROG	7		Programming adapter For programming the IM-modules via a PC.
PB- xx/03	6		Power-bus for power distribution Distribution of the power supply to several modules. "xx" in the type code stands for the number of modules, "03" for 3-pole terminals.
IM-CC	8		IM-CC Removable cage-clamp terminals (3-pole) for IM modules.



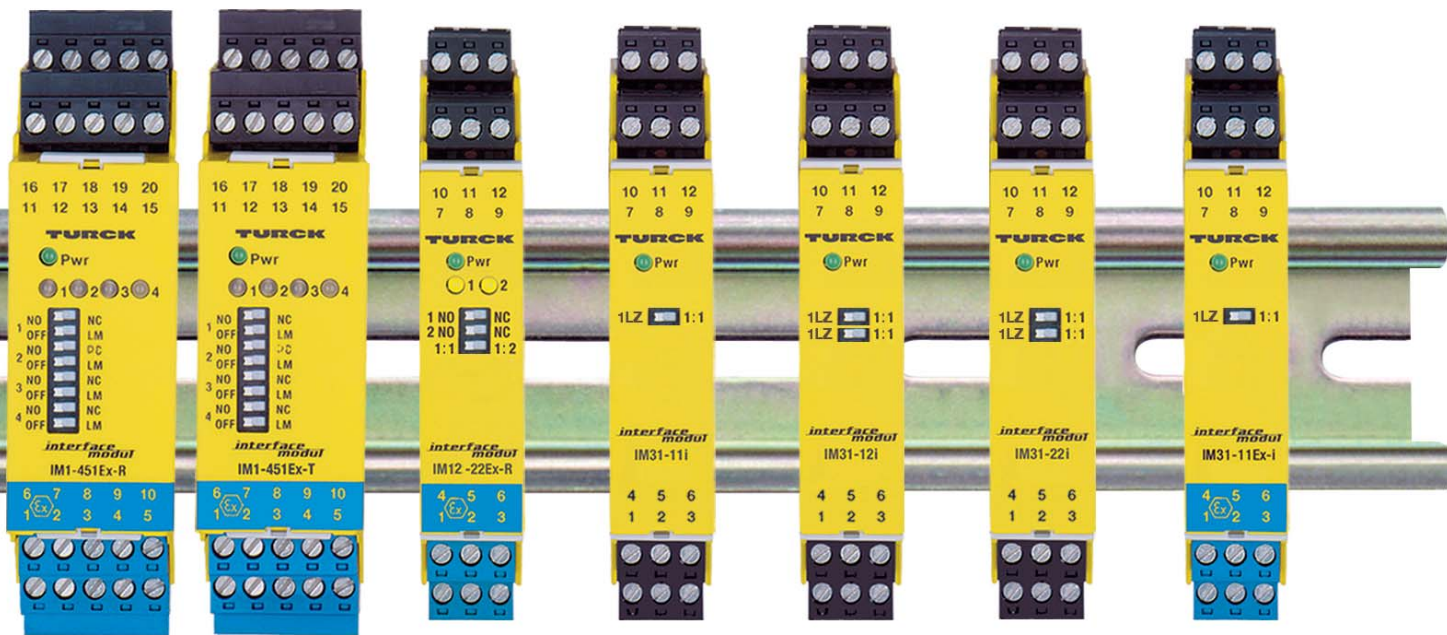
Type	IM1-12Ex-R	IM1-12Ex-T	IM1-22Ex-R	IM1-22Ex-T	IM1-22Ex-MT	IM1-121Ex-R
	[EEx ia]	[EEx ia]	[EEx ia]	[EEx ia]	[EEx ia]	[EEx ia]
Function	Isolating switching amplifier	Isolating switching amplifier	Isolating switching amplifier	Isolating switching amplifier	Isolating switching amplifier	Isolating switching amplifier
Voltage supply	20...250 VAC 20...125 VDC	20...250 VAC 20...125 VDC	20...250 VAC 20...125 VDC	20...250 VAC 20...125 VDC	20...250 VAC 20...125 VDC	20...250 VAC 20...125 VDC
Inputs	1 NAMUR sensor or contact	1 NAMUR sensor or contact	2 NAMUR sensors or contacts	2 NAMUR sensors or contacts	2 NAMUR sensors or contacts	1 NAMUR sensor or contact
Outputs	2 relays (N.O.)	2 transistors ≤ 30 V, 50 mA, ≤ 3 KHz	2 relays (N.O.)	2 transistors ≤ 30 V, 50 mA, ≤ 3 KHz	2 MOSFET ≤ 250 VAC	2 relays (N.O.), incl. 1 alarm output
Approvals	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST
Special features	SIL 2	SIL 2	SIL 2	SIL 2	SIL 2	SIL 2



Isolating amplifiers

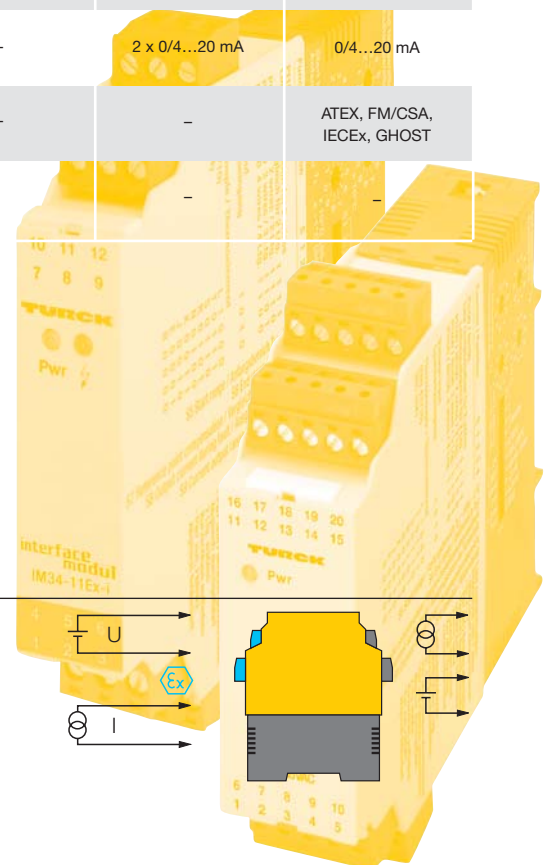
Evaluation and processing of switching states of mechanical contacts and sensors according to EN 60947-5-6 (NAMUR).

EN 60947-5-6



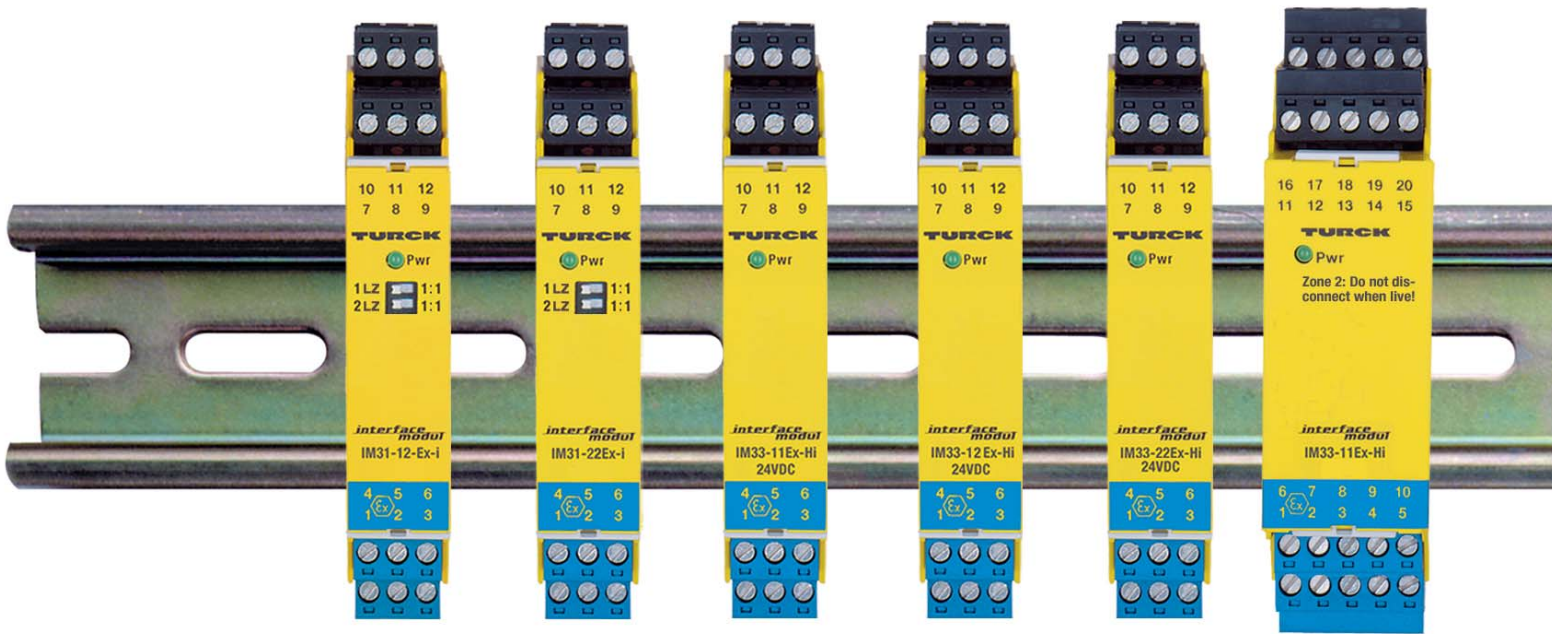
IM1-451Ex-R	IM1-451Ex-T	IM12-22Ex-R	IM31-11-i	IM31-12-i	IM31-22-i	IM31-11Ex-i
[EEx ia]	[EEx ia]	[EEx ia]				[EEx ia]

Isolating switching amplifier	Isolating switching amplifier	Isolating switching amplifier	Analogue data transmitter	Analogue data transmitter	Analogue data transmitter	Analogue data transmitter
20...250 VAC 20...125 VDC	20...250 VAC 20...125 VDC	20...250 VAC 20...125 VDC	20...250 VDC	20...250 VDC	20...250 VDC	20...250 VAC 20...125 VDC
4 NAMUR sensors or contacts	4 NAMUR sensors or contacts	2 NAMUR sensors or contacts	0/2...10 V 0/4...20 mA	0/4...20 mA 2 x 0/4...20 mA	2 x 0/2...10 V 2 x 0/4...20 mA	0/2...10 V 0/4...20 mA
5 relays (N.O.), incl. 1 alarm output	5 transistors incl. 1 alarm output	2 relays (N.O.)	0/4...20 mA	-	2 x 0/4...20 mA	0/4...20 mA
ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	-	-	-	ATEX, FM/CSA, IECEx, GHOST

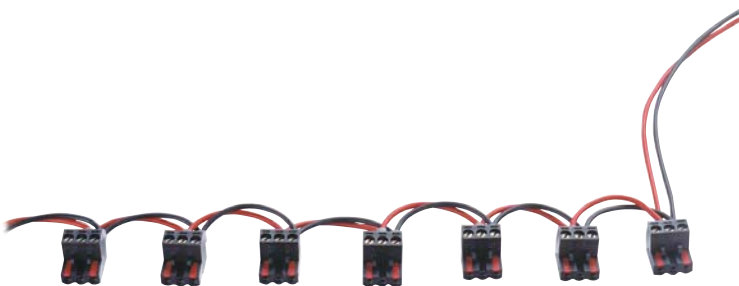


Analogue data transmitters/ intrinsically safe input isolators

Galvanic isolation and/or conversion of analogue current and voltage signals. There are devices with intrinsically safe input and output circuits.



Type	IM31-12Ex-i	IM31-22Ex-U IM31-22Ex-i	IM33-11Ex-Hi/24VDC	IM33-12Ex-Hi/24VDC	IM33-22Ex-Hi/24VDC	IM33-11Ex-Hi
	[EEx ia]	[EEx ia]	[EEx ia]	[EEx ia]	[EEx ia]	[EEx ia]
Function	Analogue data transmitter	Analogue data transmitter	HART® isolating transducer	HART® isolating transducer	HART® isolating transducer	HART® isolating transducer
Voltage supply	20...250 VAC 20...125 VDC	20...250 VAC 20...125 VDC	24 VDC	24 VDC	24 VDC	20...250 VAC 20...125 VDC
Inputs	0/2...10 V 0/4...20 mA	2 x 0/2...10 V 2 x 0/4...20 mA	0/4...20 mA	1 x 0/4...20 mA	2 x 0/4...20 mA	1 x 0/4...20 mA
Outputs	2 x 0/4...20 mA	2 x 0/4...20 mA 2 x 0/2...10V	0/4...20 mA	2 x 0/4...20 mA	2 x 0/4...20 mA	1 x 0/4...20 mA
Approvals	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST
Special features	Signal multiplier	-	HART®-transmission possible/ SIL 2	HART®-transmission possible/ SIL 2	HART®-transmission possible/ SIL 2	HART®-transmission possible/ mounting in Zone 2 possible

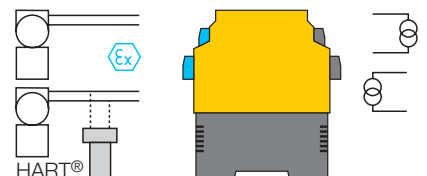


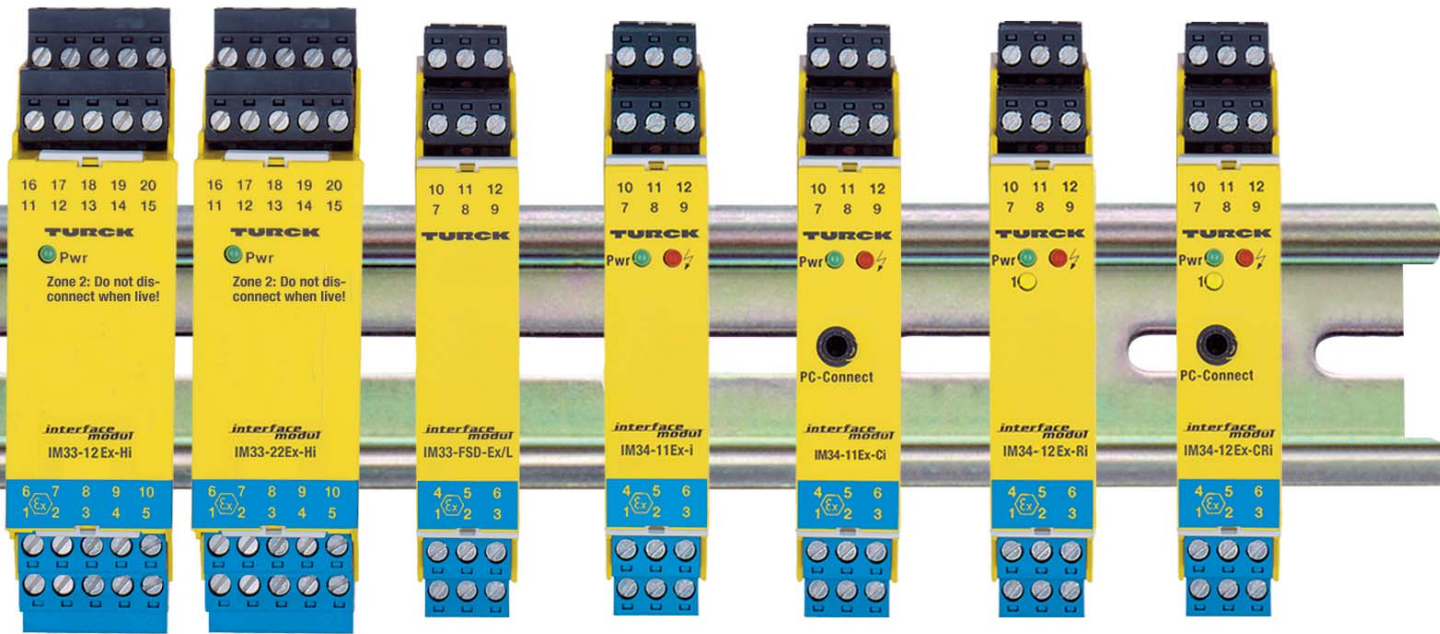
Power bus for energy distribution PB-xx/03

For distribution of the voltage supply to several modules. The "xx" in the type designation stands for number of modules, whereas the "03" identifies 3-pole terminals.

Isolating transducers

These devices are suited for the supply and transmission of current signals of 2-wire transmitters located in explosion hazardous areas. HART® devices enable bi-directional communication. This range incorporates devices with and without auxiliary power and active or passive outputs. Series -FSD includes smoke and fire detectors.





IM33-12Ex-Hi	IM33-22Ex-Hi	IM33-FSD-Ex/L	IM34-11Ex-i	IM34-11Ex-Ci	IM34-12Ex-Ri	IM34-12Ex-CRi
[EEx ia]	[EEx ia]	[EEx ia]	[EEx ia]	[EEx ia]	[EEx ia]	[EEx ia]

HART® isolating transducer	HART® isolating transducer	Isolating transducer	Temperature measuring amplifier	Temperature measuring amplifier	Temperature measuring amplifier	Temperature measuring amplifier
20...250 VAC 20...125 VDC	20...250 VAC 20...125 VDC	without auxiliary energy	20...250 VAC 20...125 VDC	20...250 VAC 20...125 VDC	20...250 VAC 20...125 VDC	20...250 VAC 20...125 VDC
1 x 0/4...20 mA	2 x 0/4...20 mA	2 x 0...20 mA	Ni/Pt100 or thermo-elements mV-input	Ni/Pt100 or thermo-elements mV-input	Ni/Pt100 or thermo-elements mV-input	Ni/Pt100 or thermo-elements or mV-input
2 x 0/4...20 mA	2 x 0/4...20 mA	2 x 0...20 mA	1 x 0/4...20 mA	1 x 0/4...20 mA	1 x 0/4...20 mA 1 relay (N.O.)	1 x 0/4...20 mA 1 relay (N.O.)
ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST
HART®-transmission possible/ mounting in Zone 2 possible	HART®-transmission possible/ mounting in Zone 2 possible	Transducer for fire and smoke indicators	-	programmable via PC (FDT/DTM)	-	programmable via PC (FDT/DTM)



Programming adapter IM-PROG
For programming of IM modules via PC.

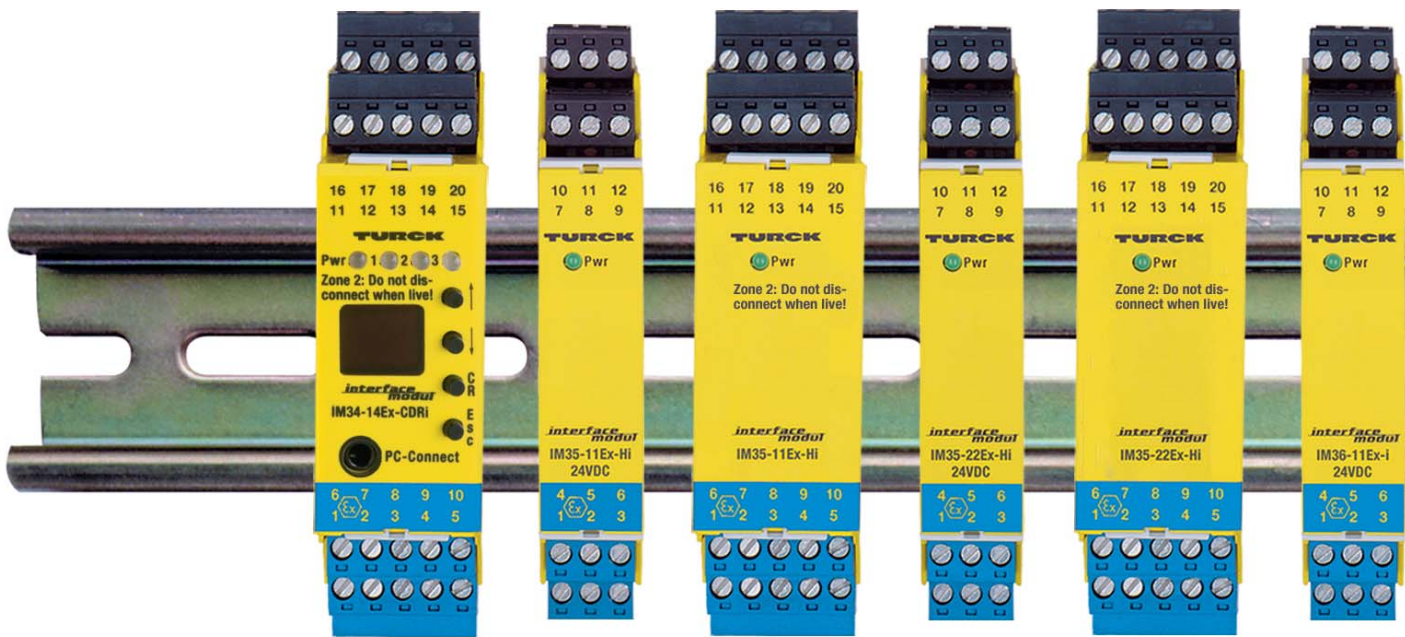
Temperature measuring amplifiers

Linear conversion of temperature values into standard current signals.

Thermo-element measuring amplifiers

Linear conversion of temperature values, which are detected by a thermo-element, into standard current signals. All customary thermoelements or mV signals may be connected. Types -Ci, -CRi = programmable via PC using software PACTware™.





Type	IM34-14Ex-CDRi	IM35-11Ex-Hi/24VDC	IM35-11Ex-Hi	IM35-22Ex-Hi/24VDC	IM35-22Ex-Hi	IM36-11Ex-i/24VDC
	[EEx ia]	[EEx ia]	[EEx ia]	[EEx ia]	[EEx ia]	[EEx ia]
Function	Temperature measuring amplifier	HART® Analogue data transmitter	HART® Analogue data transmitter	HART® Analogue data transmitter	HART® Analogue data transmitter	Potentiometer amplifier
Voltage supply	20...250 VAC 20...125 VDC	24 VDC	20...250 VAC 20...125 VDC	24 VDC	20...250 VAC 20...125 VDC	24 VDC
Inputs	Ni/Pt100 or thermo-elements or mV-input	0/4...20 mA	0/4...20 mA	2 x 0/4...20 mA	2 x 0/4...20 mA	800 Ω... 20 kΩ
Outputs	3 relays (N.O.) 1 x 0/4...20mA	0/4...20 mA	0/4...20 mA	2 x 0/4...20 mA	2 x 0/4...20 mA	0...20 mA
Approvals	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST
Special features	Display programmable via PC (FDT/DTM)/ mounting in Zone 2 possible	HART®-transmission possible/ SIL 2	HART®/ mounting in Zone 2 possible	HART®-transmission possible/ SIL 2	HART®/ mounting in Zone 2 possible	-

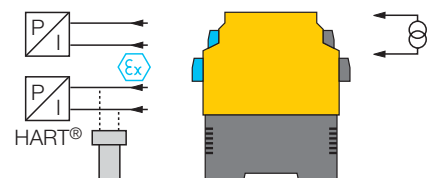


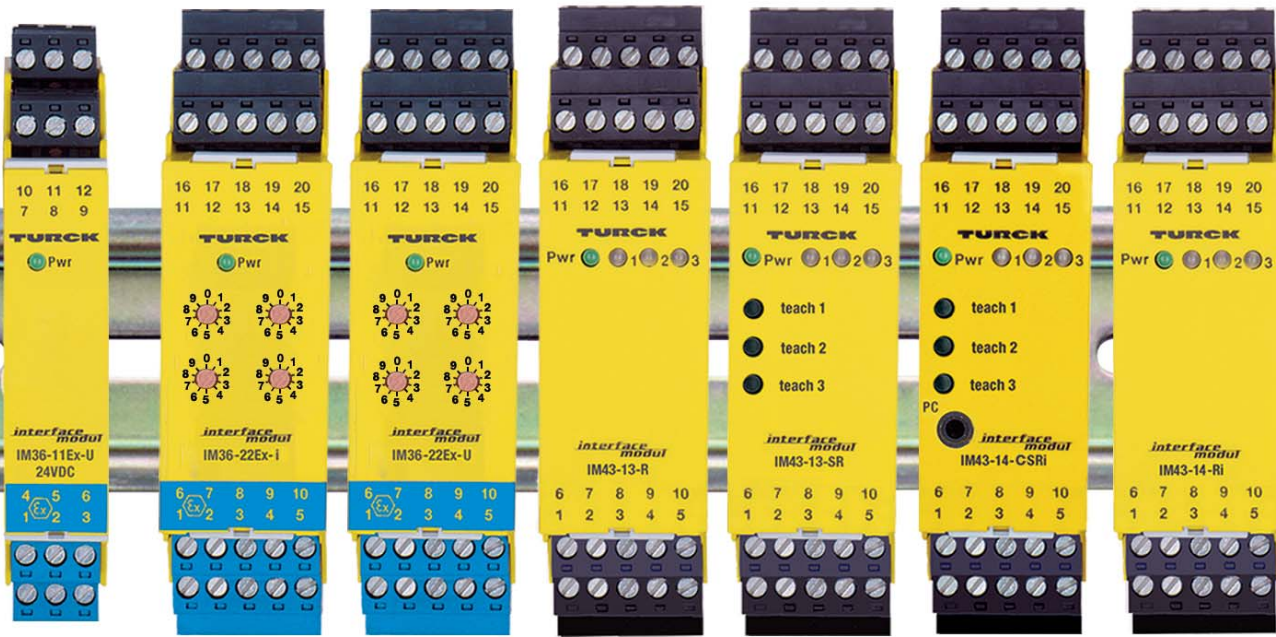
IM-CC

Removable cage-clamp terminals (3-pole) for IM modules

Analogue data transmitters/ intrinsically safe output isolators

Galvanic isolation and transfer of analogue current signals into the explosion hazardous area. The family comprises a selection of devices with intrinsically safe output circuits. HART® devices enable bi-directional communication.

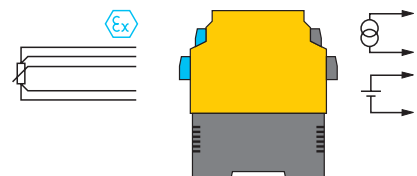




	IM36-11Ex-U/24VDC	IM36-22Ex-i	IM36-22Ex-U	IM43-13-R	IM43-13-SR	IM43-14-CSRi	IM43-14-Ri
	[EEx ia]	[EEx ia]	[EEx ia]				
	Potentiometer amplifier	Potentiometer amplifier	Potentiometer amplifier	Limit value monitor	Limit value monitor	Limit value monitor	Limit value monitor
	24 VDC	20...250 VAC 20...125 VDC	20...250 VAC 20...125 VDC	20...250 VUC	20...250 VUC	20...250 VUC	20...250 VUC
	800 Ω...20 kΩ	2 x 800 Ω...20 kΩ	2 x 800 Ω...20 kΩ	0/4...20 mA or 0/2...10 V or transmitter	0/4...20 mA or 0/2...10 V or transmitter	0/4...20 mA or 0/2...10 V or transmitter	0/4...20 mA or 0/2...10 V or transmitter
	0...10 V 0...20 mA	2 x 0...20 mA	2 x 0...10 V	3 relays (N.O.)	3 relays (N.O.)	3 relays (N.O.) 1 x 0/4...20 mA	3 relays (N.O.) 1 x 0/4...20 mA
	ATEX, FM/CSA, IECEX, GHOST	ATEX, FM/CSA, IECEX, GHOST	ATEX, FM/CSA, IECEX, GHOST	-	-	-	-
	-	-	-	-	manual teach function	manual teach function programmable via PC	-

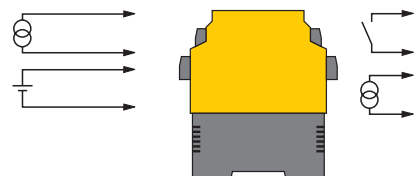
Potentiometer amplifiers

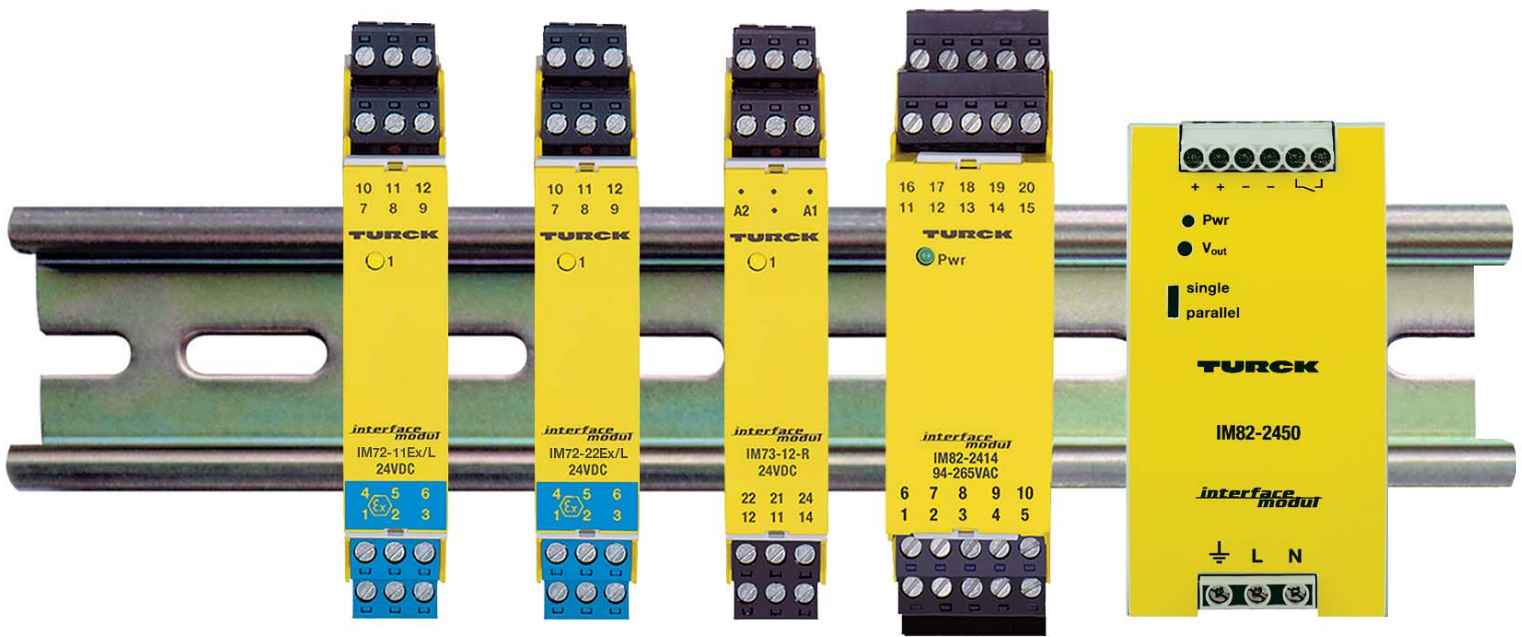
Conversion of the variable resistance values of a potentiometer into standard current and voltage signals. The input circuit is intrinsically safe, so that the potentiometer may be mounted in the explosion hazardous area.



Limit value monitors

Monitoring of standard current and voltage signals relative to pre-set limit values. This series includes devices with three limit values and versions with current output. Types -SR and -SRi feature a manual teach function, whereas types -R and -Ri are adjustable via a coded rotary switch.





Type	IM72-11Ex/L	IM72-22Ex/L	IM73-12-R	IM82-2414	IM82-2450
	[EEx ia]	[EEx ia]			
Function	Valve control module	Valve control module	Relay coupler	Power supply	Power supply
Voltage supply	without power supply	without power supply	without auxiliary energy	94...265 VAC	25...132 VAC 176...265 VAC 210...375 VDC
Inputs	19...30 V	19...30 V	24 VDC 230 VAC		
Outputs	24 V / 45 mA 15 V / 45 mA	24 V / 45 mA 15 V / 45 mA	2 relays (change-over)	24 V/1,4 A	24 V/5 A
Approvals	ATEX, FM/CSA, IECEx, GHOST	ATEX, FM/CSA, IECEx, GHOST	-	UL	-
Special features	SIL 3 Loop-powered	SIL 3 Loop-powered	SIL 3	-	-

Valve control modules

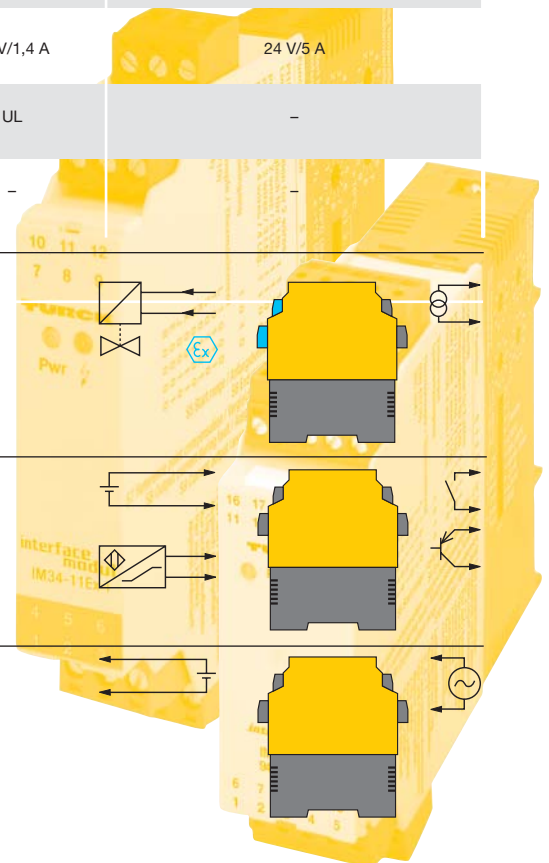
Intrinsically safe supply of magnetic valves, pilot indicators, transmitters etc.

Coupling devices

Galvanically isolated transmission of binary switching states. These devices function as a reliable interface between different potentials.

Power supplies

Power supply with galvanic isolation used to power low power consumers, particularly suited for powering the switching and monitoring devices of TURCK's *interfacemodul*, *multimodul* und *multisafe*® series.

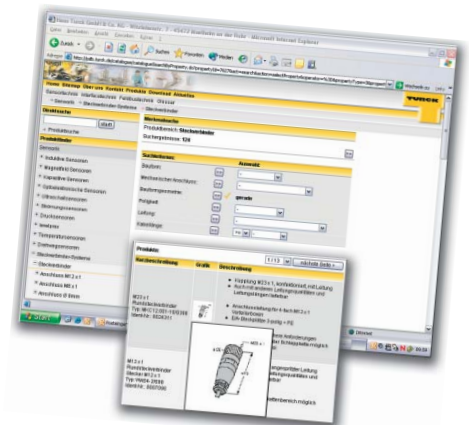


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Sensortechnik

- Induktive Sensoren
- Induktive Sensoren – *uprox*[®]+
- Induktive Sensoren für Schwenkantriebe
- Magnetfeldsensoren
- Opto-Sensoren
- Geräte für den Personenschutz
- Kapazitive Sensoren
- Ultraschallsensoren
- Strömungssensoren
- Drucksensoren
- Füllstandssensoren *levelprox*[®]
- Temperatursensoren
- RFID-System *BLident*
- Linearwegsensoren
- Drehwegsensoren
- Steckverbinder und Verteiler
- CD-ROM Sensortechnik

Interfacetchnik

- Interfacetchnik im Aufbaugehäuse
- Interfacetchnik auf 19"-Karte
- Miniaturrelais, Industrirelais, Zeitwürfel, Sockel
- Zeit- und Überwachungsrelais
- Ex-Schutz – Grundlagen für die Praxis (Übersichtsposter)

Feldbustechnik

- Kompakte Feldbuskomponenten PROFIBUS-DP/DeviceNet™/Ethernet
- piconet*[®] – modulares Feldbus-I/O-System in IP67
- BL67 – modulares Feldbus-I/O-System in IP67
- BL20 – modulares Feldbus-I/O-System in IP20
- Remote-I/O-System *excom*[®]
- Segmentkoppler
- FOUNDATION™ fieldbus-Feldbuskomponenten
- PROFIBUS-PA-Feldbuskomponenten
- Feldbusssystem *sensoplex*[®]2/2Ex

You would like to order additional information? Please return the order list below or use our comprehensive Internet support.

Sensors

- Inductive sensors
- Inductive sensors – *uprox*[®]+
- Inductive sensors for rotary actuators
- Magnetic-field sensors
- Photoelectric sensors
- Machine safety equipment
- Capacitive sensors
- Ultrasonic sensors
- Flow sensors
- Pressure sensors
- Level sensors *levelprox*[®]
- Temperature sensors
- RFID system – *BLident*
- Linear position sensors
- Rotary position sensors
- Connectors and junctions
- CD-ROM Sensors

Interface technology

- Devices in modular housings
- Devices on 19" card
- Miniature relays, industrial relays, time cubes, sockets
- Programmable relays and timers
- Explosion protection – basics for practical application (overview poster)

Fieldbus technology

- Compact fieldbus components PROFIBUS-DP/DeviceNet™/Ethernet
- piconet*[®] – modular fieldbus I/O system in IP67
- BL67 – modular fieldbus I/O system in IP67
- BL20 – modular fieldbus I/O system in IP20
- Remote I/O system *excom*[®]
- Segment coupler
- FOUNDATION™ fieldbus fieldbus components
- PROFIBUS-PA fieldbus components
- Fieldbus system *sensoplex*[®]2/2Ex

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