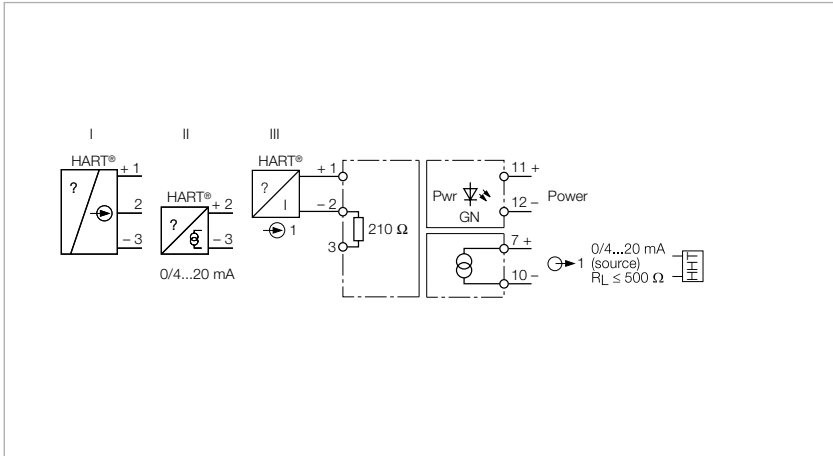


HART® isolating transducer, 1-channel



Features

- TR CU
- Power supply of 2-wire measuring transducers with HART® communication as well as connection to active 2-wire and passive 3-wire transmitters
- Input circuit: 0/4...20 mA
- Output circuit: 0/4...20 mA
- SIL2
- Removable terminal blocks, screwable, with 2 mm test socket
- Complete galvanic isolation

The 1-channel HART® isolating transducer IM33-11-HI/24VDC is designed to operate 2-wire HART® transducers (III) and to transmit the measured signal galvanically isolated. Besides the analog signals, digital HART® communication signals can also be transmitted bidirectionally.

Alternatively, active 2-wire HART® transmitters (II) and passive 3-wire HART® transmitters (I) can be operated.

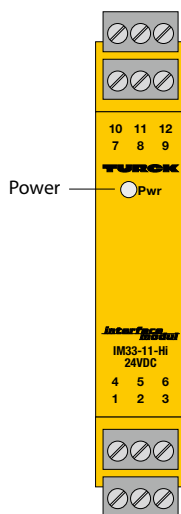
The device features one input and one output circuit, each with 0/4...20 mA. A green LED indicates operational readiness.

The input signal is transmitted 1:1 and is presented to the relevant output in the non-Ex area.

Due to the 1:1 transmission characteristic, wire-break or short-circuit of in the

measuring transducer circuit are indicated as currents of 0 mA resp. > 22.5 mA.

The removable terminal blocks feature test sockets (Ø 2 mm) for connection of a HART® handheld. Other device variants are available on request.



Technical data

Type	IM33-11-HI/24VDC
Ident no.	7506447

Power supply

Nominal voltage	24 VDC
Operating voltage range	19...29 VDC
Power consumption	≤ 2.2 W

Inputs

Supply voltage	≥ 17 V / 20 mA
Current	25 mA
Current input	0/4...20 mA
Input resistance (current)	≤ 250 Ω

Outputs

Load resistance, current output	≤ 0.5 kΩ
Output current	0/4...20 mA
Wire break monitoring	≤ 0 mA
Short circuit monitoring	≥ 22 mA

Response characteristic

Measuring accuracy	≤ 0.1 % of full scale
Reference temperature	23 °C
Temperature drift	≤ 0.005 % / K
Rise time (10-90%)	≤ 50 ms
Dropout time (90...10%)	≤ 50 ms

Approvals and declarations

Declaration	SIL 2 acc. to EXIDA FMEDA
-------------	---------------------------

Indication

Operational readiness	green
-----------------------	-------

Environmental Conditions

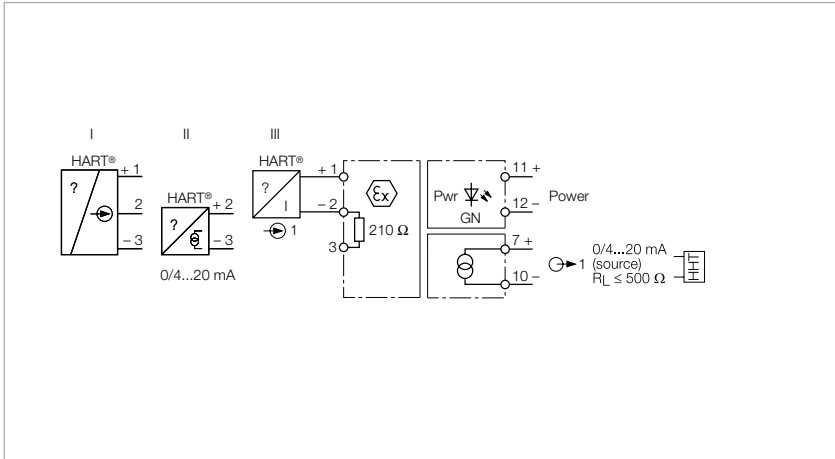
Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Relative humidity	≤ 95 %
Test voltage	2.5 kV
MTTF	159 years acc. to SN 29500 (Ed. 99) 40 °C

Mechanical data

Tightening torque	0.5 Nm
Electrical connection	4 x 3-pin removable terminal blocks with test socket, reverse polarity protected, screw connection
Terminal cross-section	1 x 2.5 mm ² / 2 x 1.5 mm ²
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail / panel
Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	18 x 110 x 110 mm

Approval Certification	TR CU
---------------------------------	-------

HART® isolating transducer, 1-channel



Features

- ATEX, IECEx, UL, cFM_{US}, TR CU, TIIS, CCEO
- Installation in zone 2
- Power supply of 2-wire measuring transducers with HART® communication as well as connection to active 2-wire and passive 3-wire transmitters
- Input circuit: 0/4...20 mA
- Output circuit: 0/4...20 mA
- SIL2
- Removable terminal blocks, screwable, with 2 mm test socket
- Complete galvanic isolation

The 1-channel HART® isolating transducer IM33-22EX-HI/24 VDC is designed to operate intrinsically safe HART® 2-wire transducers (III) in the Ex area and to transmit the measured signals to the non-Ex area. Besides the analog signals, digital HART® communication signals can also be transmitted bidirectionally.

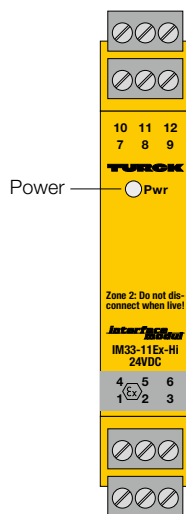
Alternatively, active 2-wire HART® transmitters (II) and passive 3-wire HART® transmitters (I) can be operated.

The device features one input and one output circuit, each with 0/4...20 mA. A green LED indicates operational readiness.

The input signal is transmitted 1:1 and is presented to the relevant output in the non-Ex area.

Due to the 1:1 transmission characteristic, wire-break or short-circuit of in the measuring transducer circuit are indicated as currents of 0 mA resp. > 22.5 mA.

The removable cage clamp terminals feature test sockets (Ø 2 mm) for connection of a HART® handheld.



Technical data

Type	IM33-11EX-HI/24VDC
Ident no.	7506440

Power supply

Nominal voltage	24 VDC
Operating voltage range	19...29 VDC
Power consumption	≤ 2.2 W

Inputs

Supply voltage	≥ 17 V / 20 mA
Current	25 mA
Current input	0/4...20 mA
Input resistance (current)	≤ 250 Ω

Outputs

Load resistance, current output	≤ 0.5 kΩ
Output current	0/4...20 mA
Internal resistance R _i	317 Ω

Response characteristic

Measuring accuracy	≤ 0.1 % of full scale
Reference temperature	23 °C
Temperature drift	≤ 0.005 % / K
Rise time (10-90%)	≤ 50 ms
Dropout time (90...10%)	≤ 50 ms

Approvals and declarations

Ex approval acc. to conformity certificate	TÜV 00 ATEX 1595
Device designation	⊕ II (1) G, II (1) D [Ex ia Ga] IIC; [Ex ia Da] IIIC
Max. values:	Terminal connection: 1...3
Max. output voltage U _o	≤ 21.9 V
Max. output current I _o	≤ 95 mA
Max. output power P _o	≤ 747 mW
Rated voltage	250 V
Characteristic	Trapezoidal
Max. input voltage U _i	≤ 40 V
Max. input power P _i	≤ 650 mW

External inductance/capacitance L_o/C_o

Ex ia	IIC	IIB
L _o [mH]	2.8	11
C _o [μF]	0.057	0.370

Ex approval acc. to conformity certificate	TÜV 06 ATEX 552977 X
Application area	II 3 G
Protection type	Ex nA [ic Gc] IIC T4 Gc
Max. values:	Terminal connection: 1...3
Max. output voltage U _o	≤ 21.9 V
Max. output current I _o	≤ 95 mA
Characteristic	trapezoidal
Max. input voltage U _i	≤ 40 V
Max. input power P _i	≤ 650 mW

External inductance/capacitance L_o/C_o

Ex ic	IIC	IIB
L _o [mH]	3	10.0
C _o [μF]	0.12	0.81

Internal resistance R _i	331 Ω
Declaration	SIL 2 acc. to EXIDA FMEDA

Indication

Operational readiness	green
-----------------------	-------

Environmental Conditions

Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Relative humidity	≤ 95 %
Test voltage	2.5 kV
MTTF	159 years acc. to SN 29500 (Ed. 99) 40 °C

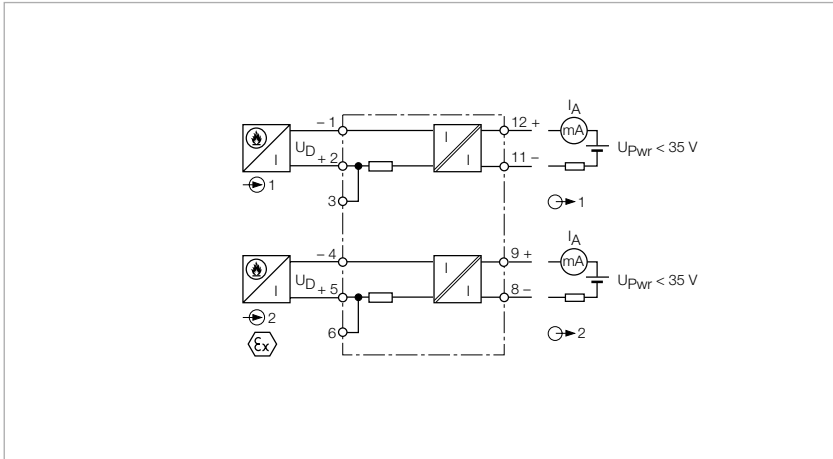
Mechanical data

Tightening torque	0.5 Nm
Electrical connection	4 x 3-pin removable terminal blocks with test socket, reverse polarity protected, screw connection
Terminal cross-section	1 x 2.5 mm ² / 2 x 1.5 mm ²
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail / panel
Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	18 x 110 x 110 mm

Approval | Certification

ATEX, IECEx, UL, cFM_{us}, TR CU, TIIS, CCOE

Isolating transducer, 1-channel



Features

- ATEX, cFM_{US}, TR CU
- Isolating transducer without auxiliary power
- Power supply for fire and smoke detectors
- Signal transmission: 0...40 mA
- Removable terminal blocks, screwable, with 2 mm test socket
- Complete galvanic isolation

The 1-channel isolating transducer for fire and smoke detectors IM33-FSD-EX/L is designed especially for connection of conventional fire and smoke detectors in the Ex-area.

They are supplied with energy. Actuation of a smoke detector results in a current change and the according signal is transmitted to the non-Ex area. Several detectors can be connected to one circuit.

The isolating transducer is loop-powered and has to be connected directly to power-supplying input circuits of evaluation units. Thereby normalized current signals of 0/4...20 mA are transmitted. The voltage drop across the device is to be observed.

Input and output circuits are galvanically isolated from each other. The inputs of the isolating transducer are reverse polarity protected.

A current-to-ground error can be detected safely via an external current-to-ground detector.



Technical data

Type	IM33-FSD-EX/L
Ident no.	7506433

Power supply	
Nominal voltage	24 VDC loop-powered

Inputs	
Supply voltage	$U_{PWR} - 1 \text{ VDC} - 300 \Omega \times I_A$
Supply voltage	$\geq 17 \text{ V} / 20 \text{ mA}$
Input resistance	300 Ω
Voltage input	max. 30 VDC
Current input	0/4...20 mA

Outputs	
Output circuits	0...40 mA
Load	$\leq 500 \Omega$
Output current	0/4...20 mA

Response characteristic	
Measuring accuracy	$\leq 2\%$ of full scale
Reference temperature	23 °C
Temperature drift	$\leq 0.1\%$ / K
Rise time (10-90%)	$\leq 10 \text{ ms}$
Dropout time (90...10%)	$\leq 10 \text{ ms}$

Approvals and declarations	
Ex approval acc. to conformity certificate	TÜV 02 ATEX 1862
Device designation	$\text{Ex} \text{ II (1) GD [Ex ia] IIC}$
Max. output voltage U_o	$\leq 27.3 \text{ V}$
Max. output current I_o	$\leq 90 \text{ mA}$
Max. output power P_o	$\leq 615 \text{ mW}$
Rated voltage	250 V
Characteristic	linear

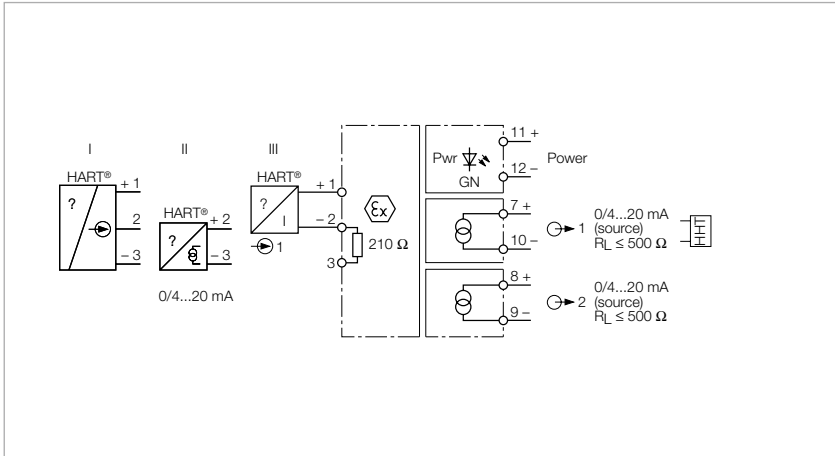
External inductance/capacitance L_o/C_o		
EEx ia	IIC	IIB
L_o [mH]	1	5
C_o [nF]	70	300

Environmental Conditions	
Ambient temperature	-20...+70 °C
Storage temperature	-40...+80 °C
Test voltage	2.5 kV

Mechanical data	
Tightening torque	0.5 Nm
Electrical connection	4 x 3-pin removable terminal blocks with test socket, reverse polarity protected, screw connection
Terminal cross-section	1 x 2.5 mm ² / 2 x 1.5 mm ²
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail / panel
Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	18 x 110 x 110 mm

Approval Certification	ATEX, c FM _{US} , TR CU
---------------------------------	------------------------------------

HART® isolating transducer, 1-channel



Features

- ATEX, IECEx, UL, cFM_{US} , TR CU, TIIS, CCEO
- Installation in zone 2
- Power supply of 2-wire measuring transducers with HART® communication as well as connection to active 2-wire and passive 3-wire transmitters
- Input circuit: 0/4...20 mA
- Output circuits: 0/4...20 mA
- SIL2
- Removable terminal blocks, screwable, with 2 mm test socket
- Complete galvanic isolation

The 1-channel HART® isolating transducer IM33-22Ex-HI/24 VDC is designed to operate intrinsically safe HART® 2-wire transducers (III) in the Ex area and to transmit the measured signals to the non-Ex area. Besides the analog signals, digital HART® communication signals can also be transmitted bidirectionally.

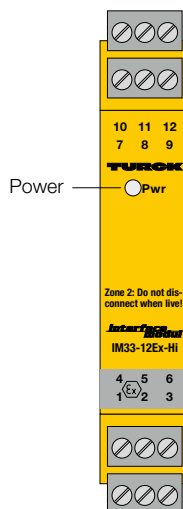
Alternatively, active 2-wire HART® transmitters (II) and passive 3-wire HART® transmitters (I) can be operated.

The device features one input and two output circuits, for 0/4...20 mA. A green LED indicates operational readiness.

The input signal is transmitted 1:1 and is presented to the relevant outputs in the non-Ex area. The HART® signal is transmitted to output 1.

Due to the 1:1 transmission characteristic, wire-break or short-circuit of in the measuring transducer circuit are indicated as currents of 0 mA resp. > 22.5 mA.

The removable cage clamp terminals feature test sockets (\varnothing 2 mm) for connection of a HART® handheld.



Technical data

Type	IM33-12EX-HI/24VDC
Ident no.	7506446

Power supply

Nominal voltage	24 VDC
Operating voltage range	19...29 VDC
Power consumption	≤ 3.2 W

Inputs

Supply voltage	≥ 17 V / 20 mA
Current input	0/4...20 mA
Input resistance (current)	≤ 250 Ω

Outputs

Load resistance, current output	≤ 0.5 kΩ
Output current	0/4...20 mA
Internal resistance R _i	317 Ω

Response characteristic

Measuring accuracy	≤ 0.1 % of full scale
Reference temperature	23 °C
Temperature drift	≤ 0.005 % / K
Rise time (10-90%)	≤ 50 ms
Dropout time (90...10%)	≤ 50 ms

Approvals and declarations

Ex approval acc. to conformity certificate	TÜV 00 ATEX 1595
Device designation	⊕ II (1) G, II (1) D [Ex ia Ga] IIC; [Ex ia Da] IIIC
Max. values:	Terminal connection: 1...3
Max. output voltage U _o	≤ 21.9 V
Max. output current I _o	≤ 95 mA
Max. output power P _o	≤ 747 mW
Rated voltage	250 V
Characteristic	Trapezoidal
Max. input voltage U _i	≤ 40 V
Max. input power P _i	≤ 650 mW

External inductance/capacitance L_o/C_o

Ex ia	IIC	IIB
L _o [mH]	2.8	11
C _o [μF]	0.057	0.370

Ex approval acc. to conformity certificate	TÜV 06 ATEX 552977 X
Application area	II 3 G
Protection type	Ex nA [ic Gc] IIC T4 Gc
Max. values:	Terminal connection: 1...3
Max. output voltage U _o	≤ 21.9 V
Max. output current I _o	≤ 95 mA
Characteristic	trapezoidal
Max. input voltage U _i	≤ 40 V
Max. input power P _i	≤ 650 mW

External inductance/capacitance L_o/C_o

Ex ic	IIC	IIB
L _o [mH]	3	10.0
C _o [μF]	0.12	0.81

Internal resistance R _i	331 Ω
Declaration	SIL 2 acc. to EXIDA FMEDA

Indication

Operational readiness	green
-----------------------	-------

Environmental Conditions

Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Relative humidity	≤ 95 %
Test voltage	2.5 kV
MTTF	159 years acc. to SN 29500 (Ed. 99) 40 °C

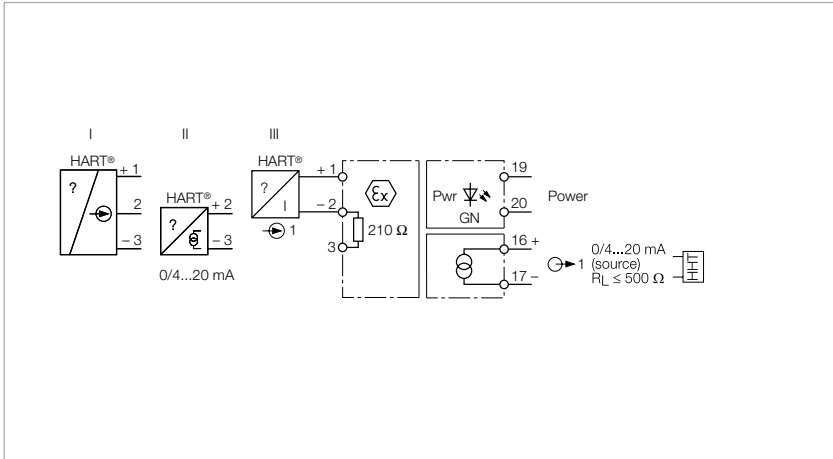
Mechanical data

Tightening torque	0.5 Nm
Electrical connection	4 x 3-pin removable terminal blocks with test socket, reverse polarity protected, screw connection
Terminal cross-section	1 x 2.5 mm ² / 2 x 1.5 mm ²
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail / panel
Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	18 x 110 x 110 mm

Approval | Certification

ATEX, IECEx, UL, cFM _{us} , TR CU, TIIS, CCOE
--

HART® isolating transducer, 1-channel



Features

- ATEX, IECEx, cFM_{US}, TR CU, INMETRO
- Installation in zone 2
- Power supply of 2-wire measuring transducers with HART® communication as well as connection to active 2-wire and passive 3-wire transmitters
- Input circuit: 0/4...20 mA
- Output circuit: 0/4...20 mA
- Removable terminal blocks, screwable, with 2 mm test socket
- Complete galvanic isolation

The 1-channel HART® isolating transducer IM33-11EX-HI is designed to operate intrinsically safe HART® 2-wire transducers (III) in the Ex area and to transmit the measured signal to the non-Ex area. Besides the analog signals, digital HART® communication signals can also be transmitted bidirectionally.

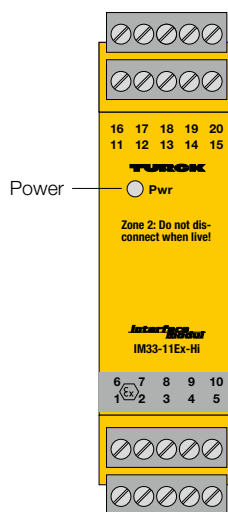
Alternatively, active 2-wire HART® transmitters (II) and passive 3-wire HART® transmitters (I) can be operated.

The device features one input and one output circuit, for 0/4...20 mA. A green LED indicates operational readiness.

The input signal is transmitted 1:1 and is presented to the relevant output in the non-Ex area.

Due to the 1:1 transmission characteristic, wire-break or short-circuit of in the measuring transducer circuit are indicated as currents of 0 mA resp. > 22.5 mA.

The removable cage clamp terminals feature test sockets (Ø 2 mm) for connection of a HART® handheld.



Technical data

Type	IM33-11EX-HI
Ident no.	7506443

Power supply

Nominal voltage	Universal voltage supply unit
Operating voltage range	20...125 VDC
Operating voltage range	20...250 VAC
Frequency	40...70 Hz
Power consumption	≤ 3 W

Inputs

Supply voltage	≥ 17 V / 20 mA
Current	25 mA
Current input	0/4...20 mA
Input resistance (current)	≤ 250 Ω

Outputs

Load resistance, current output	≤ 0.5 kΩ
Output current	0/4...20 mA

Response characteristic

Measuring accuracy	≤ 0.1 % of full scale
Reference temperature	23 °C
Temperature drift	≤ 0.005 % / K
Rise time (10-90%)	≤ 50 ms
Dropout time (90...10%)	≤ 50 ms

Approvals and declarations

Ex approval acc. to conformity certificate	TÜV 05 ATEX 2910
Device designation	Ⓔ II (1) G; II (1) D [Ex ia Ga] IIC; [Ex ia Da] IIIC
Max. values:	Terminal connection: 1...3
Max. output voltage U_o	≤ 21.3 V
Max. output current I_o	≤ 86 mA
Max. output power P_o	≤ 675 mW
Internal resistance R_i	365 Ω
Rated voltage	250 V
Characteristic	Trapezoidal

External inductance/capacitance L_o/C_o

Ex ia	IIC	IIB
L_o [mH]	0.47	10
C_o [μF]	0.093	0.45

Ex approval acc. to conformity certificate	TÜV 06 ATEX 2967 X
Application area	II 3 G
Protection type	Ex nA [ic Gc] IIC T4 Gc
Max. values:	Terminal connection: 1...3
Max. output voltage U_o	≤ 21.3 V
Max. output current I_o	≤ 86 mA
Max. output power P_o	≤ 675 mW
Characteristic	trapezoidal

Internal inductance/capacitance L_i/C_i $L_i = 75 \mu\text{H}$, C_i negligibly small

External inductance/capacitance L_o/C_o

	Ex nL IIC	Ex nL IIB
L_o [mH]	4.5	10
C_o [nF]	157	890
Internal resistance R_i	365 Ω	

Indication

Operational readiness	green
-----------------------	-------

Environmental Conditions

Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Test voltage	2.5 kV

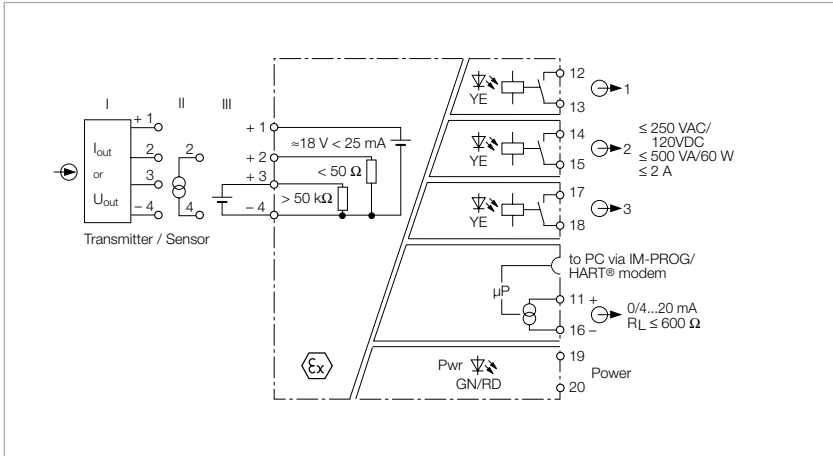
Mechanical data

Tightening torque	0.5 Nm
Electrical connection	4 x 5-pin removable terminal blocks with test socket, reverse polarity protected, screw connection
Terminal cross-section	1 x 2.5 mm ² / 2 x 1.5 mm ²
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail / panel
Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	27 x 110 x 110 mm

Approval | Certification

ATEX, IECEx, FM, TR CU, INMETRO

HART® isolating transducer, 1-channel



Features

- ATEX, IECEx, TR CU
- Intrinsically safe input circuit Ex ia
- Installation in zone 2
- Monitors over and under-range of analog values and window limits
- Parametrized via PC (FDT / DTM), front-panel switch or HART®
- Power supply of 2 and 3-wire measuring transducers
- Suited for active and passive signals
- Output circuit: 0/4...20 mA, reversible
- 3 relay outputs
- Complete galvanic isolation

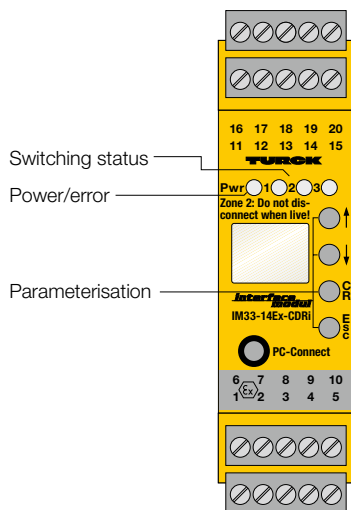
The 1-channel isolating transducer IM33-14EX-CDRI is designed to operate intrinsically safe transmitters in the Ex area and to transmit the measured signals to the non-Ex area.

The device features one output for analog signals 0/4...20 mA and three outputs for limit value relays. The measured value can be viewed on a 2-line display. A green LED indicates operational readiness, 3 yellow LEDs indicate the

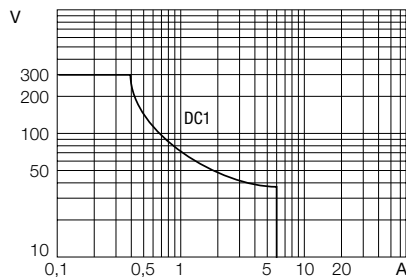
switching status of the individual channels.

The measured value is permanently written to a ring buffer with space for 8000 values. The writing process is stopped with a predefined trigger event, like for example "excess of limit value". After that, the stored signal sequence can be read out.

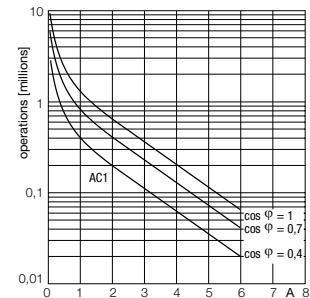
The device can be parametrized and configured via PC (FDT / DTM). For this, connect the device to the PC via the 3.5 mm jack on the front (the matching transmission cable IM-PROG III can be ordered separately from TURCK). A basic scope of parameters can be set via buttons and display on the front or remotely via the current interface and HART®.



Output relay – Load curve



Output relay – Electrical lifetime



Technical data

Type	IM33-14EX-CDRI
Ident no.	7560015

Power supply

Nominal voltage	Universal voltage supply unit
Operating voltage range	20...125 VDC
Operating voltage range	20...250 VAC
Frequency	40...70 Hz
Power consumption	≤ 3 W
Residual ripple	≤ 10 mV _{SS}

Inputs

Supply voltage	≥ 17 V / 20 mA
Current	25 mA
Voltage input	0/2...10 VDC
Current input	0/4...20 mA

Outputs

Load resistance, current output	≤ 0.6 kΩ
Output current	0/4...20 mA
Output circuits (digital)	3 x relays (NO)
Switching frequency	≤ 10 Hz
Relay switching voltage	≤ 250 VAC/120 VDC
Switching current per output	≤ 2 A
Switching capacity per output	≤ 500 VA/60 W
Fault current	0 / 22 mA adjustable
Contact quality	AgNi, 3μ Au

Response characteristic

Measuring accuracy	≤ 0.05 % of full scale
Reference temperature	23 °C
Temperature drift analogue output	0.0025 %/K

Approvals and declarations

Ex approval acc. to conformity certificate	IBExU 07 ATEX 1156
Device designation	⊕ II (1) G, II (1) D [Ex ia Ga] IIC; [Ex ia Da] IIC

Max. values:	Terminal connection: 1...4
Max. output voltage U _o	≤ 21.6 V
Max. output current I _o	≤ 85 mA
Max. output power P _o	≤ 459 mW
Internal resistance R _i	408 Ω
Rated voltage	250 V
Characteristic	Trapezoidal
Max. input voltage U _i	≤ 40 V
Max. input power P _i	≤ 600 mW
Internal inductance/capacitance L _i /C _i	negligible

External inductance/capacitance L_o/C_o

Ex ia	IIC		IIB		
L _o [mH]	0.3	0.15	5	1	0.15
C _o [μF]	30	50	630	680	950

Ex approval acc. to conformity certificate	IBExU 07 ATEX B015 X
Application area	II 3 G
Protection type	Ex nA nC [ic Gc] IIC T4 Gc

Max. values:	Terminal connection: 1...4
Max. output voltage U _o	≤ 21.6 V
Max. output current I _o	≤ 85 mA
Max. output power P _o	≤ 459 mW
Internal resistance R _i	408 Ω
Characteristic	trapezoidal
Max. input voltage U _i	≤ 40 V
Max. input power P _i	≤ 600 mW
Internal inductance/capacitance L _i /C _i	negligible

External inductance/capacitance L_o/C_o

Ex ic	IIC			IIB		
L _o [mH]	4	0.5	0.15	5	1	0.15
C _o [μF]	0.17	0.21	0.25	1	1.2	1.4

Indication

Operational readiness	green
Switching state	yellow
Error indication	red

Environmental Conditions

Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Test voltage	2.5 kV

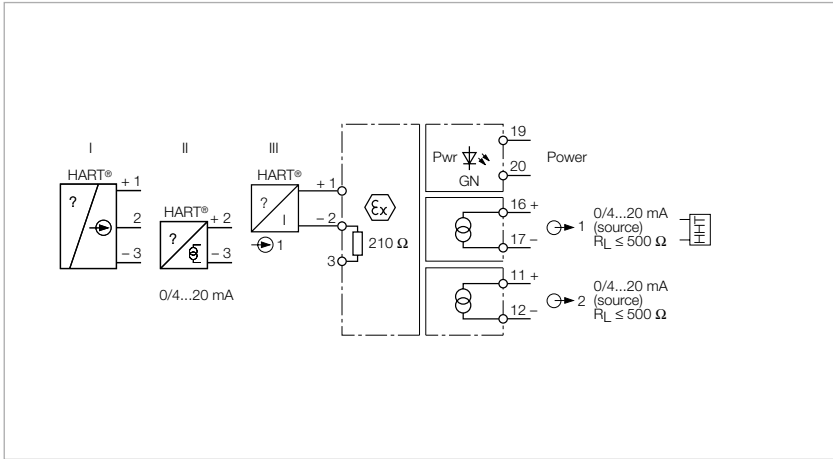
Mechanical data

Tightening torque	0.5 Nm
Electrical connection	4 x 5-pin removable terminal blocks, reverse polarity protected, screw connection
Terminal cross-section	1 x 2.5 mm ² / 2 x 1.5 mm ²
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail / panel
Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	27 x 104 x 110 mm

Approval | Certification

ATEX, IECEx, TR CU

HART® isolating transducer, 1-channel



Features

- ATEX, IECEx, cFM_{US}, TR CU, INMETRO
- Installation in zone 2
- Power supply of 2-wire measuring transducers with HART® communication as well as connection to active 2-wire and passive 3-wire transmitters
- Input circuit: 0/4...20 mA
- Output circuit: 0/4...20 mA
- Removable terminal blocks, screwable, with 2 mm test socket
- Complete galvanic isolation

The 1-channel HART® isolating transducer IM33-12EX-HI is designed to operate intrinsically safe HART® 2-wire transducers (III) in the Ex area and to transmit the measured signals to the non-Ex area. Besides the analog signals, digital HART® communication signals can also be transmitted bidirectionally.

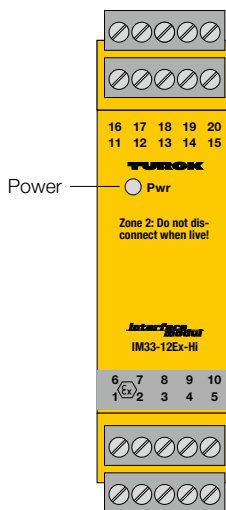
Alternatively, active 2-wire HART® transmitters (II) and passive 3-wire HART® transmitters (I) can be operated.

The device features one input and two output circuits, for 0/4...20 mA. A green LED indicates operational readiness.

The input signal is transmitted 1:1 and is presented to the relevant outputs in the non-Ex area. The HART® signal is transmitted to output 1.

Due to the 1:1 transmission characteristic, wire-break or short-circuit of in the measuring transducer circuit are indicated as currents of 0 mA resp. > 22.5 mA.

The removable cage clamp terminals feature test sockets (Ø 2 mm) for connection of a HART® handheld.



Technical data

Type	IM33-12EX-HI
Ident no.	7506444

Power supply

Nominal voltage	Universal voltage supply unit
Operating voltage range	20...125 VDC
Operating voltage range	20...250 VAC
Frequency	40...70 Hz
Power consumption	≤ 3 W
Residual ripple	≤ 10 mV _{ss}

Inputs

Supply voltage	≥ 17 V / 20 mA
Current	25 mA
Current input	0/4...20 mA
Input resistance (current)	≤ 250 Ω

Outputs

Load resistance, current output	≤ 0.5 kΩ
Output current	0/4...20 mA

Response characteristic

Measuring accuracy	≤ 0.1 % of full scale
Reference temperature	23 °C
Temperature drift	≤ 0.005 % / K
Rise time (10-90%)	≤ 50 ms
Dropout time (90...10%)	≤ 50 ms

Approvals and declarations

Ex approval acc. to conformity certificate	TÜV 05 ATEX 2910
Device designation	Ⓔ II (1) G; II (1) D [Ex ia Ga] IIC; [Ex ia Da] IIIC
Max. values:	Terminal connection: 1...3
Max. output voltage U _o	≤ 21.3 V
Max. output current I _o	≤ 86 mA
Max. output power P _o	≤ 675 mW
Internal resistance R _i	365 Ω
Rated voltage	250 V
Characteristic	Trapezoidal

External inductance/capacitance L_o/C_o

Ex ia	IIC	IIB
L _o [mH]	0.47	10
C _o [μF]	0.093	0.45

Ex approval acc. to conformity certificate	TÜV 06 ATEX 2967 X
Application area	II 3 G
Protection type	Ex nA [ic Gc] IIC T4 Gc
Max. values:	Terminal connection: 1...3
Max. output voltage U _o	≤ 21.3 V
Max. output current I _o	≤ 86 mA
Max. output power P _o	≤ 675 mW
Characteristic	trapezoidal

Internal inductance/capacitance L_i/C_i L_i = 75 μH, C_i negligibly small

External inductance/capacitance L_o/C_o

	Ex nL IIC	Ex nL IIB
L _o [mH]	4.5	10
C _o [nF]	157	890
Internal resistance R _i	365 Ω	

Indication

Operational readiness	green
-----------------------	-------

Environmental Conditions

Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Test voltage	2.5 kV

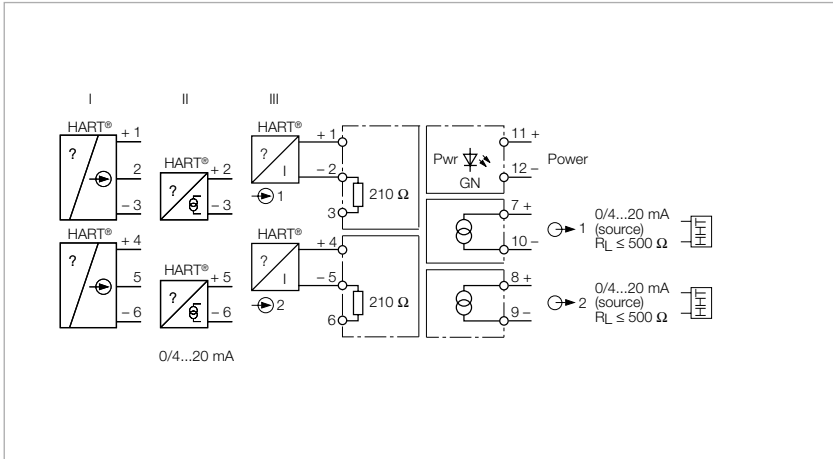
Mechanical data

Tightening torque	0.5 Nm
Electrical connection	4 x 5-pin removable terminal blocks with test socket, reverse polarity protected, screw connection
Terminal cross-section	1 x 2.5 mm ² / 2 x 1.5 mm ²
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail / panel
Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	27 x 110 x 110 mm

Approval | Certification

ATEX, IECEx, FM_{us}, TR CU, INMETRO

HART® isolating transducer, 2-channel



Features

- TR CU
- Power supply of 2-wire measuring transducers with HART® communication as well as connection to active 2-wire and passive 3-wire transmitters
- Input circuit: 0/4...20 mA
- Output circuit: 0/4...20 mA
- SIL 2
- Removable terminal blocks, screwable, with 2 mm test socket
- Complete galvanic isolation

The 2-channel HART® isolating transducer IM33-22-HI/24VDC is designed to operate intrinsically safe HART® transducers. Besides the analog signals, digital HART® communication signals can also be transmitted bidirectionally.

Alternatively, active 2-wire HART® transmitters (II) and passive 3-wire HART® transmitters (I) can be operated.

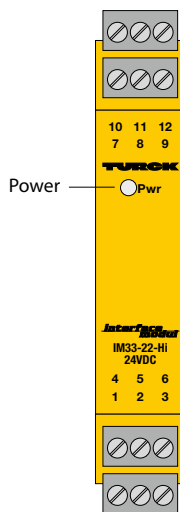
The device features 0/4...20 mA input and output circuits. A green LED indicates operational readiness.

The input signals are transmitted 1:1 and are presented to the relevant outputs in the non-Ex area.

Due to the 1:1 transmission characteristic, wire-break or short-circuit of in the

measuring transducer circuit are indicated as currents of 0 mA resp. > 22.5 mA.

The removable terminal blocks feature test sockets (Ø 2 mm) for connection of a HART® handheld.



Technical data

Type	IM33-22-HI/24VDC
Ident no.	7506564

Power supply

Nominal voltage	24 VDC
Operating voltage range	19...29 VDC
Power consumption	≤ 3.2 W

Inputs

Supply voltage	≥ 17 V / 20 mA
Current input	0/4...20 mA
Input resistance (current)	≤ 250 Ω

Outputs

Load resistance, current output	≤ 0.5 kΩ
Output current	0/4...20 mA

Response characteristic

Measuring accuracy	≤ 0.1 % of full scale
Reference temperature	23 °C
Temperature drift	≤ 0.005 % / K
Rise time (10-90%)	≤ 50 ms
Dropout time (90...10%)	≤ 50 ms

Approvals and declarations

Declaration	SIL 2 acc. to EXIDA FMEDA
-------------	---------------------------

Indication

Operational readiness	green
-----------------------	-------

Environmental Conditions

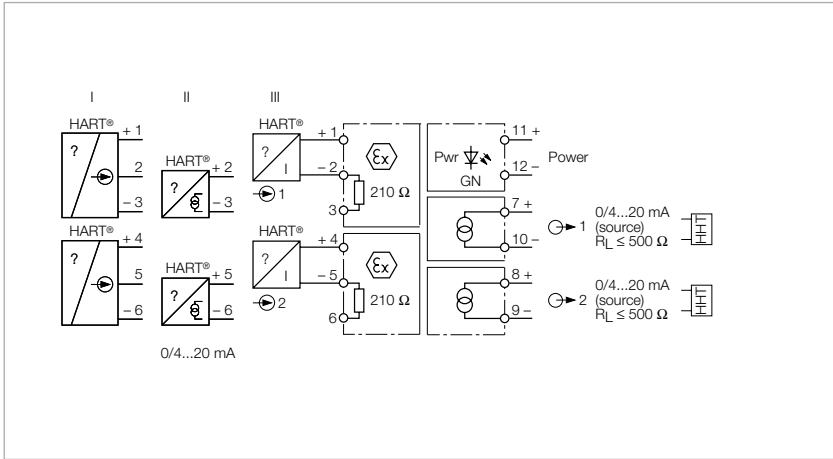
Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Relative humidity	≤ 95 %
Test voltage	2.5 kV
MTTF	159 years acc. to SN 29500 (Ed. 99) 40 °C

Mechanical data

Tightening torque	0.5 Nm
Electrical connection	4 x 3-pin removable terminal blocks with test socket, reverse polarity protected, screw connection
Terminal cross-section	1 x 2.5 mm ² / 2 x 1.5 mm ²
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail / panel
Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	18 x 110 x 110 mm

Approval Certification	TR CU
---------------------------------	-------

HART® isolating transducer, 2-channel



Features

- ATEX, IECEx, UL, cFM_{US}, TR CU, TIIS, CCEO
- Installation in zone 2
- Power supply of 2-wire measuring transducers with HART® communication as well as connection to active 2-wire and passive 3-wire transmitters
- Input circuits: 0/4...20 mA
- Output circuits: 0/4...20 mA
- SIL2
- Removable terminal blocks, screwable, with 2 mm test socket
- Complete galvanic isolation

The 2-channel HART® isolating transducer IM33-22EX-HI/24VDC is designed to operate intrinsically safe HART® 2-wire transducers (III) in the Ex area and to transmit the measured signals to the non-Ex area. Besides the analog signals, digital HART® communication signals can also be transmitted bidirectionally.

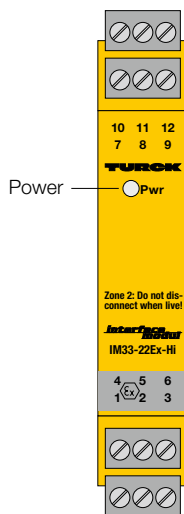
Alternatively, active 2-wire HART® transmitters (II) and passive 3-wire HART® transmitters (I) can be operated.

The device features 0/4...20 mA input and output circuits. A green LED indicates operational readiness.

The input signals are transmitted 1:1 and are presented to the relevant outputs in the non-Ex area.

Due to the 1:1 transmission characteristic, wire-break or short-circuit of in the measuring transducer circuit are indicated as currents of 0 mA resp. > 22.5 mA.

The removable cage clamp terminals feature test sockets (Ø 2 mm) for connection of a HART® handheld.



Technical data

Type	IM33-22EX-HI/24VDC
Ident no.	7506441

Power supply

Nominal voltage	24 VDC
Operating voltage range	19...29 VDC
Power consumption	≤ 3.2 W

Inputs

Supply voltage	≥ 17 V / 20 mA
Current input	0/4...20 mA
Input resistance (current)	≤ 250 Ω

Outputs

Load resistance, current output	≤ 0.5 kΩ
Output current	0/4...20 mA
Internal resistance R _i	317 Ω

Response characteristic

Measuring accuracy	≤ 0.1 % of full scale
Reference temperature	23 °C
Temperature drift	≤ 0.005 % / K
Rise time (10-90%)	≤ 50 ms
Dropout time (90...10%)	≤ 50 ms

Approvals and declarations

Ex approval acc. to conformity certificate	TÜV 00 ATEX 1595
Device designation	Ⓔ II (1) G, II (1) D [Ex ia Ga] IIC; [Ex ia Da] IIIC
Max. values:	Terminal connection: 1...3 / 4...6
Max. output voltage U _o	≤ 21.9 V
Max. output current I _o	≤ 95 mA
Max. output power P _o	≤ 747 mW
Rated voltage	250 V
Characteristic	Trapezoidal
Max. input voltage U _i	≤ 30 V
Max. input power P _i	≤ 650 mW

External inductance/capacitance L_o/C_o

Ex ia	IIC	IIB
L _o [mH]	2.8	11
C _o [μF]	0.057	0.370

Ex approval acc. to conformity certificate	TÜV 06 ATEX 552977 X
Application area	II 3 G
Protection type	Ex nA [ic Gc] IIC T4 Gc
Max. values:	Terminal connection: 1...3 / 4...6
Max. output voltage U _o	≤ 21.9 V
Max. output current I _o	≤ 95 mA
Characteristic	trapezoidal
Max. input voltage U _i	≤ 30 V
Max. input power P _i	≤ 650 mW

External inductance/capacitance L_o/C_o

Ex ic	IIC	IIB
L _o [mH]	3	10.0
C _o [μF]	0.12	0.81

Internal resistance R _i	331 Ω
Declaration	SIL 2 acc. to EXIDA FMEDA

Indication

Operational readiness	green
-----------------------	-------

Environmental Conditions

Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Relative humidity	≤ 95 %
Test voltage	2.5 kV
MTTF	159 years acc. to SN 29500 (Ed. 99) 40 °C

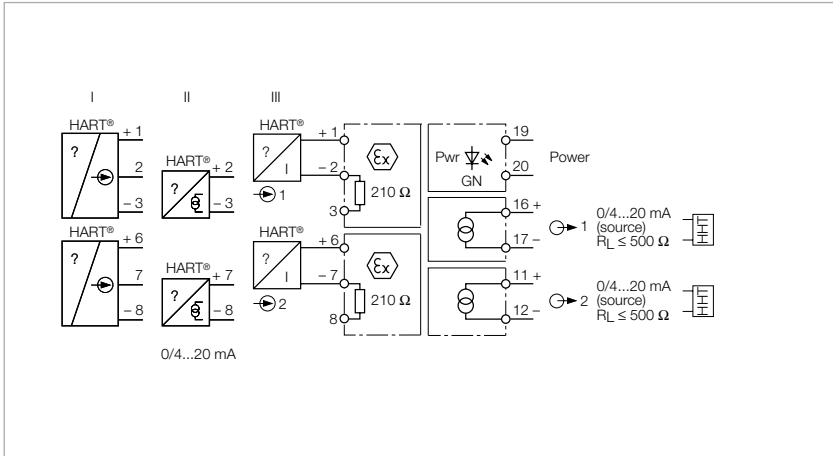
Mechanical data

Tightening torque	0.5 Nm
Electrical connection	4 x 3-pin removable terminal blocks with test socket, reverse polarity protected, screw connection
Terminal cross-section	1 x 2.5 mm ² / 2 x 1.5 mm ²
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail / panel
Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	18 x 110 x 110 mm

Approval | Certification

ATEX, IECEx, UL, cFM _{us} , TR CU, TIIS, CCOE
--

HART® isolating transducer, 2-channel



Features

- ATEX, IECEx, cFM_{US}, TR CU, INMETRO
- Installation in zone 2
- Power supply of 2-wire measuring transducers with HART® communication as well as connection to active 2-wire and passive 3-wire transmitters
- Input circuits: 0/4...20 mA
- Output circuits: 0/4...20 mA
- Complete galvanic isolation

The 2-channel HART® isolating transducer IM33-22EX-HI is designed to operate intrinsically safe HART® 2-wire transducers (III) in the Ex area and to transmit the measured signals to the non-Ex area. Besides the analog signals, digital HART® communication signals can also be transmitted bidirectionally.

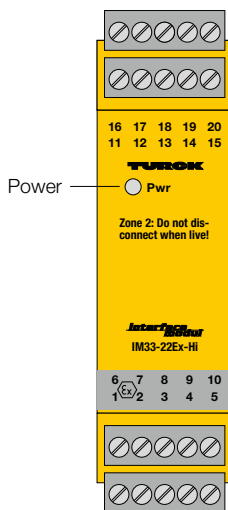
Alternatively, active 2-wire HART® transmitters (II) and passive 3-wire HART® transmitters (I) can be operated.

The device features 0/4...20 mA input and output circuits. A green LED indicates operational readiness.

The input signals are transmitted 1:1 and are presented to the relevant outputs in the non-Ex area.

Due to the 1:1 transmission characteristic, wire-break or short-circuit of in the measuring transducer circuit are indicated as currents of 0 mA resp. > 22.5 mA.

The removable cage clamp terminals feature test sockets (Ø 2 mm) for connection of a HART® handheld.



Technical data

Type	IM33-22EX-HI
Ident no.	7506445

Power supply

Nominal voltage	Universal voltage supply unit
Operating voltage range	20...125 VDC
Operating voltage range	20...250 VAC
Frequency	40...70 Hz
Power consumption	≤ 3 W

Inputs

Supply voltage	≥ 17 V / 20 mA
Current	25 mA
Current input	0/4...20 mA
Input resistance (current)	≤ 250 Ω

Outputs

Load resistance, current output	≤ 0.5 kΩ
Output current	0/4...20 mA

Response characteristic

Measuring accuracy	≤ 0.1 % of full scale
Reference temperature	23 °C
Temperature drift	≤ 0.005 % / K
Rise time (10-90%)	≤ 50 ms
Dropout time (90...10%)	≤ 50 ms

Approvals and declarations

Ex approval acc. to conformity certificate	TÜV 05 ATEX 2910
Device designation	Ⓔ II (1) G; II (1) D [Ex ia Ga] IIC; [Ex ia Da] IIIC
Max. values:	Terminal connection: 1...3 / 6...8
Max. output voltage U_o	≤ 21.3 V
Max. output current I_o	≤ 86 mA
Max. output power P_o	≤ 675 mW
Internal resistance R_i	365 Ω
Rated voltage	250 V
Characteristic	Trapezoidal

External inductance/capacitance L_o/C_o

Ex ia	IIC	IIB
L_o [mH]	0.47	10
C_o [μF]	0.093	0.45

Ex approval acc. to conformity certificate	TÜV 06 ATEX 2967 X
Application area	II 3 G
Protection type	Ex nA [ic Gc] IIC T4 Gc
Max. values:	Terminal connection: 1...3 / 6...8
Max. output voltage U_o	≤ 21.3 V
Max. output current I_o	≤ 86 mA
Max. output power P_o	≤ 675 mW
Characteristic	trapezoidal

Internal inductance/capacitance L_i/C_i $L_i = 75 \mu\text{H}$, C_i negligibly small

External inductance/capacitance L_o/C_o

	Ex nL IIC	Ex nL IIB
L_o [mH]	4.5	10
C_o [nF]	157	890
Internal resistance R_i	365 Ω	

Indication

Operational readiness	green
-----------------------	-------

Environmental Conditions

Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Test voltage	2.5 kV

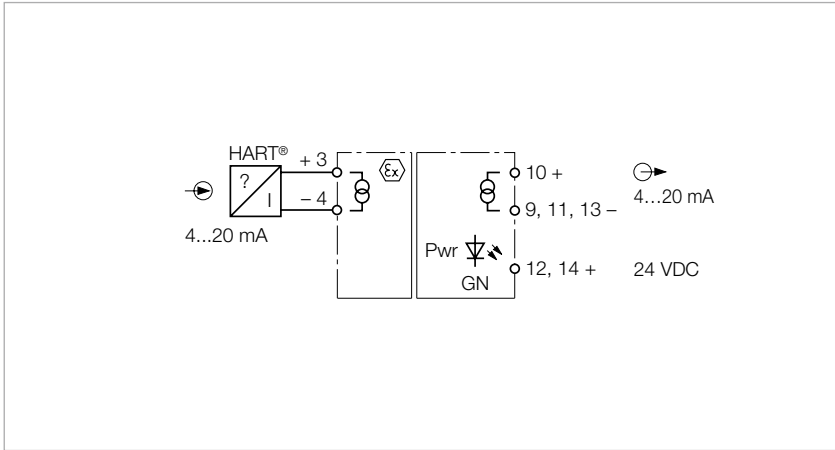
Mechanical data

Tightening torque	0.5 Nm
Electrical connection	4 x 5-pin removable terminal blocks with test socket, reverse polarity protected, screw connection
Terminal cross-section	1 x 2.5 mm ² / 2 x 1.5 mm ²
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail / panel
Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	27 x 110 x 110 mm

Approval | Certification

ATEX, IECEx, FM_{us}, TR CU, INMETRO

HART® isolating transducer, 1-channel



Features

- ATEX, IECEx, TR CU, NEPSI
- Installation in zone 2
- Power supply of transmitters in the Ex area
- HART® transmissible
- Galvanic isolation of input circuits, output circuits and supply voltage

The 1-channel HART® isolating transducer IME-AIA-11EX-Hi/24VDC is used to energize intrinsically safe 2-wire HART® transducers (III) in the Ex area and to transmit the measured signal to the non-Ex area.

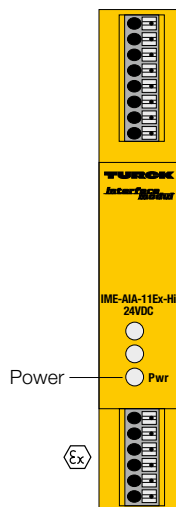
Besides the analog signals, digital HART® communication signals can also be transmitted bidirectionally.

The device features one input and one output circuit for 4...20 mA.

A green LED indicates operational readiness.

Input and output circuit are safely galvanically isolated. The input signal is transmitted 1:1 and is presented to the relevant output in the non-Ex area. As a result of the 1:1 transmission behaviour,

wire-break and short circuit are output as currents of 0 mA or > 22.5 mA in the measuring transducer circuit.



Technical data

Type	IME-AiA-11Ex-Hi/24VDC
Ident no.	7541193

Power supply

Nominal voltage	24 VDC
Operating voltage range	20...30 VDC
Power consumption	≤ 1 W

Inputs

Input circuits	isolating transducer
Supply voltage	≥ 13 V / 20 mA
Current	35 mA
Current input	4...20 mA

Outputs

Load resistance, current output	≤ 0.5 kΩ
Output current	4...20 mA

Response characteristic

Measuring accuracy	≤ 0.1 % of full scale
Reference temperature	23 °C
Rise time (10-90%)	≤ 10 ms
Dropout time (90...10%)	≤ 10 ms

Approvals and declarations

Ex approval acc. to conformity certificate	TÜV 08 ATEX 554801
Device designation	⊕ II (1) G, II (1) D [Ex ia] IIB ; [Ex iaD]
Max. values:	Terminal connection: 3+4
Max. output voltage U_o	≤ 23 V
Max. output current I_o	≤ 64.5 mA
Max. output power P_o	≤ 799 mW
Rated voltage	250 V
Characteristic	Trapezoidal
Internal inductance/capacitance L_i/C_i	$L_i = 76.5 \mu\text{H}$, $C_i = 22 \text{ nF}$

External inductance/capacitance L_o/C_o

Ex ia	IIC			IIB		
L_o [mH]	0.804	0.424	0.024	4.8	0.9	0.12
C_o [nF]	46	62	121	358	418	718

Ex approval acc. to conformity certificate	TÜV 08 ATEX 554909 X
Application area	II 3 G
Protection type	Ex nA [nL] IIB/IIC T4
Max. values:	Terminal connection: 3+4
Max. output voltage U_o	≤ 23 V
Max. output current I_o	≤ 64.5 mA
Max. output power P_o	≤ 799 mW
Characteristic	trapezoidal
Internal inductance/capacitance L_i/C_i	$C_i = 22 \text{ nF}$, $L_i = 76.5 \mu\text{H}$

External inductance/capacitance L_o/C_o

Ex nL	IIC	IIB
L_o [mH]	0.12	19.9
C_o [nF]	188	786

Declaration	SIL 2 acc. to EXIDA FMEDA
-------------	---------------------------

Indication

Operational readiness	green
-----------------------	-------

Environmental Conditions

Ambient temperature	-25...+70 °C
Storage temperature	-40...+80 °C
Test voltage	2.5 kV
MTTF	474 years acc. to SN 29500 (Ed. 99) 40 °C

Mechanical data

Electrical connection	Spring terminal made of Beryllium-Bronze
Terminal cross-section	1.5 mm ²
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail
Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	18 x 112 x 110 mm

Approval | Certification

ATEX, IECEx, TR CU, NEPSI