

#### **Features**

- ATEX, IECEx, UL, <sub>C</sub>FM<sub>US</sub>, TR CU, NEPSI
- Installation in zone 2
- Transmission of normalized analog signals from the Ex area to the non-Ex area
- Input circuit: 0/2...10 V or 0/4...20 mA
- Output circuit: 0/4...20 mA
- Complete galvanic isolation

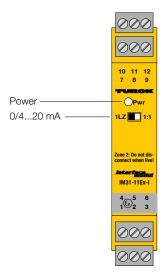
The 1-channel analog signal isolator IM31-11EX-I is designed to transmit normalized active voltage or current signals galvanically isolated from the Ex area to the non-Ex area.

The device is equipped with one input circuit of 0/2...10 V or 0/4...20 mA and

one short-circuit proof output circuit of 0/4...20 mA.

The transmission characteristic is adjusted via a DIP switch on the front. In switch position "1:1", the input signal is transmitted directly to the output in the non-Ex area. In "LZ" switch position, a dead-

zero signal at the input (0...10 V / 0...20 mA) is converted and provided as a live-zero signal at the associated output (4...20 mA).



### Technical data

Туре	IM31-11EX-I	Indication	
ldent no.	7506320	Operational readiness	green
Power supply		Environmental Conditions	
Nominal voltage	Universal voltage supply unit	Ambient temperature	-25+70 °C
Operating voltage range	20125 VDC	Storage temperature	-40+80 °C
Operating voltage range	20250 VAC	Relative humidity	≤ 95 %
Frequency	4070 Hz	Test voltage	2.5 kV
Power consumption	≤ 2.2 W		
		Mechanical data	
Inputs		Tightening torque	0.5 Nm
Voltage input	0/210 VDC	Electrical connection	4 x 3-pin removable terminal blocks,
Input resistance (voltage)	$\geq$ 50 k $\Omega$		reverse polarity protected, screw
Current input	0/420 mA	* · · ·	connection
Input resistance (current)	≤ 50 Ω	Terminal cross-section	1 x 2.5 mm <sup>2</sup> / 2 x 1.5 mm <sup>2</sup>
		Housing material	Polycarbonate/ABS
Outputs		Mounting instruction	for DIN rail / panel
Load resistance, current output	$\leq 0.5 \text{ k}\Omega$	Protection class Flammability class acc. to UL 94	IP20
Output current			V-0 18 x 104 x 110 mm
Response characteristic		. He was a	ATTY IFCE III FM TO CIL MEDCI
Measuring accuracy	$\leq$ 0.2 % of full scale	Approval   Certification	ATEX, IECEx, UL, cFM <sub>us</sub> , TR CU, NEPSI
Reference temperature	23 ℃		
Temperature drift	$\leq$ 0.01 % / K		
Rise time (10-90%)	≤ 50 ms		
Dropout time (9010%)	≤ 50 ms		
Approvals and declarations			
Ex approval acc. to conformity certificate	TÜV 04 ATEX 2679		
Device designation			
Max. values:	Terminal connection: 13		
Max. output voltage $\mathrm{U}_{\mathrm{o}}$	≤ 7.2 V		

#### External inductance/capacitance L<sub>o</sub>/C<sub>o</sub>

Internal inductance/capacitance L<sub>i</sub>/C<sub>i</sub>

Max. output current I<sub>o</sub>

Max. output power Po

Rated voltage Characteristic

Ex ia	IIC			IIB			
L <sub>o</sub> [mH]	0.5	4.5	9.5	1.5	9.5	20	
C <sub>0</sub> [μF]	2	1.5	1.3	9	6.7	6.1	

 $\leq 1 \, \text{mA}$ 

 $\leq$  2 mW 250 V

linear

 $L_i = 65 \mu H; C_i = 52 nF$ 

Ex approval acc. to conformity certificate TÜV 06 ATEX 553387 X

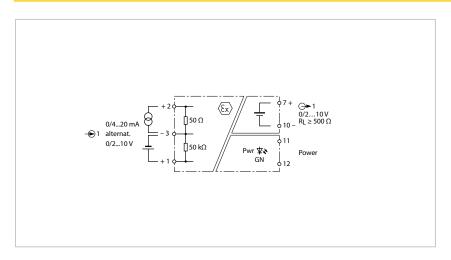
113G Application area

Protection type Ex nA [ic Gc] IIC/IIB T4 Gc Max. values:  $Terminal \ connection; 1 \ldots 3$ 

Max.output voltage  $U_{\rm o}$ ≤ 7.2 V Max. output current Io  $\leq 1 \, \text{mA}$ Max. output power P<sub>o</sub>  $\leq$  2 mW Characteristic linear

#### External inductance/capacitance $L_o/C_o$

Ex ic	IIC			IIB			
L <sub>o</sub> [mH]	0.5	4.5	9.5	1.5	9.5	20	
C <sub>0</sub> [μF]	3.9	2.5	2.2	17	12	10	



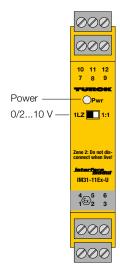
#### **Features**

- ATEX, IECEx, UL, <sub>C</sub>FM<sub>US</sub>, TR CU, NEPSI
- Installation in zone 2
- Transmission of normalized analog signals from the Ex area to the non-Ex area
- Input circuit: 0/2...10 V or 0/4...20 mA
- Output circuit: 0/2...10 V
- Complete galvanic isolation

Standard active voltage or current signals are transmitted via the 1-channel analog signal isolator IM31-11Ex-U.

The device is equipped with one input circuit of 0/2...10 V or 0/4...20 mA and one short-circuit proof output circuit of 0/2...10 V.

The transmission characteristic is adjusted via a DIP switch on the front. In switch position "1:1", the input signal is transmitted directly to the output in the non-Ex area. In "LZ" switch position, a deadzero signal at the input (0...10 V / 0...20 mA) is converted and provided as a live-zero signal at the associated output (2...10 V).



rec	echnical data							
Туре				IM31-11	EX-U		Indication	
ldent no.				7506327			Operational readiness	green
Power su	pply						Environmental Conditions	
Nominal vo	oltage			Universa	l voltage sup	ply unit	Ambient temperature	-25+70 °C
Operating '	voltage ra	nge		2012	5 VDC		Storage temperature	-40+80 °C
Operating '	voltage ra	nge		20250	0 VAC		Relative humidity	≤ 95 %
Frequency	1			4070	Hz		Test voltage	2.5 kV
Power con	sumption			$\leq$ 2.2 W				
							Mechanical data	
Inputs							Tightening torque	0.5 Nm
Voltage in	put			0/210	) VDC		Electrical connection	4 x 3-pin removable terminal blocks,
Input resist	tance (vol	tage)		$\geq 50 \ k\Omega$				reverse polarity protected, screw connection
Current inp	put			0/420	) mA		Terminal cross-section	1 x 2.5 mm <sup>2</sup> / 2 x 1.5 mm <sup>2</sup>
Input resist	tance (cur	rent)		$\leq$ 50 $\Omega$	≤ 50 Ω		Housing material	Polycarbonate/ABS
							Mounting instruction	for DIN rail / panel
Outputs							Protection class	IP20
Load resist	tance volta	ge output		$\geq 0.5 \text{ k}\Omega$	)		Flammability class acc. to UL 94	V-0
Output voltage		0/210	V		Dimensions	18 x 104 x 110 mm		
Response	characte	ristic					A	ATEV IECE. III EM TO CU NEDCI
Measuring	accuracy			≤ 0.2 %	of full scale		Approval   Certification	ATEX, IECEx, UL, <sub>c</sub> FM <sub>us</sub> , TR CU, NEPSI
Reference	temperatu	ire		23 ℃				
Temperatu	ure drift			≤ 0.01 %	6 / <b>K</b>			
Rise time (	(10-90%)			≤ 50 ms				
Dropout tir	me (90	10%)		≤ 50 ms				
Approvals	s and dec	larations						
Ex approva	al acc. to co	onformity certi	ificate	TÜV 04 A	TEX 2679			
Device des	signation			€∞ II (1 [Ex ia Da		[Ex ia Ga] IIC/IIB;		
Max. value	es:			Terminal	connection:	:13		
Max. outpu	ut voltage	U <sub>o</sub>		≤ 7.2 V				
Max. outpu	ut current	I <sub>0</sub>		$\leq 1  \text{mA}$				
Max. outpu				≤ 2 mW				
Rated volta	age	•		250 V				
Characteris				linear				
Internal in	ductance/	capacitance L <sub>i</sub> ,	/C <sub>i</sub>	$L_i = 65 \mu$	$_{i}H; C_{i} = 52 \text{ nl}$	F		
		e/capacitan	•		•			
Ex ia	IIC			IIB				
L <sub>o</sub> [mH]	0.5	4.5	9.5	1.5	9.5	20		
C <sub>0</sub> [μF]	2	1.5	1.3	9	6.7	6.1		

Ex approval acc. to conformity certificate TÜV 06 ATEX 553387 X

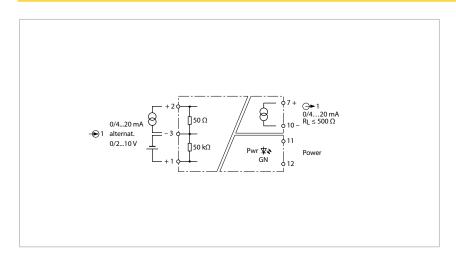
Application area II 3 G

Protection type Ex nA [ic Gc] IIC/IIB T4 Gc
Max. values: Terminal connection: 1...3

 $\begin{tabular}{lll} Max. output voltage $U_0$ & $\le 7.2 \ V$ \\ Max. output current $I_0$ & $\le 1 \ mA$ \\ Max. output power $P_0$ & $\le 2 \ mW$ \\ Characteristic & linear \\ \end{tabular}$ 

#### External inductance/capacitance $L_o/C_o$

Ex ic	IIC			IIB			
L₀ [mH]	0.5	4.5	9.5	1.5	9.5	20	
C <sub>0</sub> [μF]	3.9	2.5	2.2	17	12	10	



#### **Features**

- TR CU
- Transmission of normalized analog signals
- Input circuit: 0/2...10 V or 0/4...20 mA
- Output circuit: 0/4...20 mA
- Complete galvanic isolation

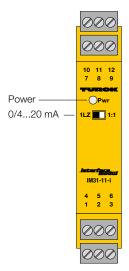
Standard active voltage or current signals are transmitted galvanically isolated via the 1-channel analog signal isolator IM31-11-I.

The device is equipped with one input circuit of 0/2...10 V or 0/4...20 mA and

one short-circuit proof output circuit of 0/4...20 mA.

The transmission characteristic is adjusted via a DIP switch on the front. In switch position "1:1", the input signal is transmitted directly to the output. In "LZ"

switch position, a dead-zero signal at the input (0...10 V / 0...20 mA) is converted and provided as a live-zero signal at the output (4...20 mA).



**Type** IM31-11-I ldent no. 7506323

**Power supply** 

Nominal voltage Universal voltage supply unit

 $\begin{array}{lll} \mbox{Operating voltage range} & 20 \dots 125 \mbox{ VDC} \\ \mbox{Operating voltage range} & 20 \dots 250 \mbox{ VAC} \\ \mbox{Frequency} & 40 \dots 70 \mbox{ Hz} \\ \mbox{Power consumption} & \leq 2.2 \mbox{ W} \\ \end{array}$ 

Inputs

 $\begin{tabular}{ll} Voltage input & 0/2...10 \ VDC \\ Input resistance (voltage) & $\geq 50 \ k\Omega$ \\ Current input & 0/4...20 \ mA \\ Input resistance (current) & $\leq 50 \ \Omega$ \\ \end{tabular}$ 

Outputs

Load resistance, current output  $\leq 0.5 \text{ k}\Omega$ Output current 0/4...20 mA

Response characteristic

Measuring accuracy  $\leq$  0.1 % of full scale

Reference temperature 23 °C 
Temperature drift  $\leq 0.005 \% / K$  Rise time (10-90%)  $\leq 50 \text{ ms}$  Dropout time (90...10%)  $\leq 50 \text{ ms}$ 

Indication

Operational readiness green

**Environmental Conditions** 

Ambient temperature -25...+70 °C Storage temperature -40...+80 °C Relative humidity  $\leq 95$  % Test voltage 2.5 kV

Mechanical data

Tightening torque 0.5 Nm

Electrical connection 4 x 3-pin removable terminal blocks,

reverse polarity protected, screw

connection

Terminal cross-section 1 x 2.5 mm² / 2 x 1.5 mm² Housing material Polycarbonate/ABS

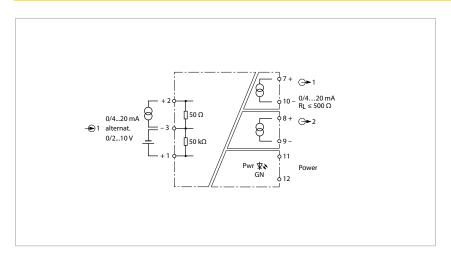
Mounting instruction for DIN rail / panel

Protection class IP20 Flammability class acc. to UL 94 V-0

Dimensions 18 x 104 x 110 mm

Approval | Certification TR CU

## Input analog signal isolator, 1-channel - Signal duplicating



#### **Features**

- TR CU
- Transmission of normalized analog signals
- Input circuit: 0/2...10 V or 0/4...20 mA
- Output circuit: 2 x 0/4...20 mA
- Complete galvanic isolation

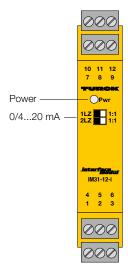
Standard active voltage or current signals are transmitted galvanically isolated via the 1-channel analog signal isolator IM31-12-I. The signal is duplicated and provided at both outputs.

The device features one input circuits of 0/2...10 V or 0/4...20 mA as well as two

short-circuit proof output circuits of 0/4...20 mA.

The transmission characteristic is adjusted via a DIP switch on the front. In switch position "1:1", the input signal is transmitted directly to the outputs. In "LZ" switch position, a dead-zero signal at the

input (0...10 V / 0...20 mA) is converted and provided as a live-zero signal at the output (4...20 mA).



**Type** IM31-12-I Ident no. 7506324

**Power supply** 

Nominal voltage Universal voltage supply unit

 $\begin{array}{lll} \mbox{Operating voltage range} & 20 \dots 125 \mbox{ VDC} \\ \mbox{Operating voltage range} & 20 \dots 250 \mbox{ VAC} \\ \mbox{Frequency} & 40 \dots 70 \mbox{ Hz} \\ \mbox{Power consumption} & \leq 2.2 \mbox{ W} \\ \end{array}$ 

Inputs

 $\begin{tabular}{ll} Voltage input & 0/2...10 \ VDC \\ Input resistance (voltage) & $\geq 50 \ k\Omega$ \\ Current input & 0/4...20 \ mA \\ Input resistance (current) & $\leq 50 \ \Omega$ \\ \end{tabular}$ 

Outputs

Load resistance, current output  $\leq 0.5 \text{ k}\Omega$ Output current 0/4...20 mA

Response characteristic

Measuring accuracy  $\leq$  0.1 % of full scale

Reference temperature 23 °C 
Temperature drift  $\leq 0.005 \% / K$  Rise time (10-90%)  $\leq 50 \text{ ms}$  Dropout time (90...10%)  $\leq 50 \text{ ms}$ 

Indication

Operational readiness green

**Environmental Conditions** 

Ambient temperature -25...+70 °C Storage temperature -40...+80 °C Relative humidity  $\leq 95$  % Test voltage 2.5 kV

Mechanical data

Tightening torque 0.5 Nm

Electrical connection 4 x 3-pin removable terminal blocks,

reverse polarity protected, screw

connection

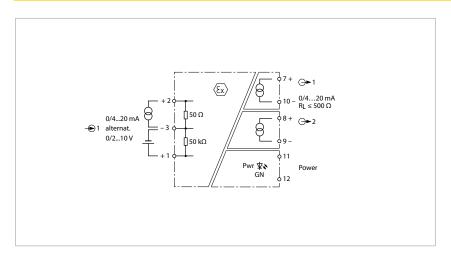
Terminal cross-section 1 x 2.5 mm² / 2 x 1.5 mm²
Housing material Polycarbonate/ABS
Mounting instruction for DIN rail / panel

Protection class IP20
Flammability class acc. to UL 94 V-0

Dimensions 18 x 104 x 110 mm

Approval | Certification TR CU

## Input analog signal isolator, 1-channel - Signal duplicating



#### **Features**

- ATEX, IECEx, UL, <sub>C</sub>FM<sub>US</sub>, TR CU, NEPSI
- Installation in zone 2
- Transmission of normalized analog signals from the Ex area to the non-Ex area
- Input circuit: 0/2...10 V or 0/4...20 mA
- Output circuit: 2 x 0/4...20 mA
- Complete galvanic isolation

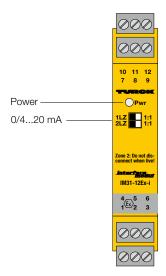
The 1-channel analog signal isolator IM31-12EX-I is designed to transmit normalized active voltage or current signals galvanically isolated from the Ex area to the non-Ex area. The signal is duplicated and provided at both outputs.

The device features one input circuits of 0/2...10 V or 0/4...20 mA as well as two

short-circuit proof output circuits of 0/4...20 mA.

The transmission characteristic is adjusted via a DIP switch on the front. In switch position "1:1", the input signal is transmitted directly to the outputs in the non-Ex area. In "LZ" switch position, a dead-zero signal at the input (0...10 V /

0...20 mA) is converted and provided as a live-zero signal at the output (4...20 mA).



rechnicai data			
Туре	IM31-12EX-I	Indication	
ldent no.	7506321	Operational readiness	green
Power supply		Environmental Conditions	
Nominal voltage	Universal voltage supply unit	Ambient temperature	-25+70 ℃
Operating voltage range	20125 VDC	Storage temperature	-40+80 °C
Operating voltage range	20250 VAC	Relative humidity	≤ 95 %
Frequency	4070 Hz	Test voltage	2.5 kV
Power consumption	$\leq$ 2.2 W		
		Mechanical data	
Inputs		Tightening torque	0.5 Nm
Voltage input	0/210 VDC	Electrical connection	4 x 3-pin removable terminal blocks,
Input resistance (voltage)	$\geq 50 \ k\Omega$		reverse polarity protected, screw
Current input	0/420 mA	Terminal cross-section	connection 1 x 2.5 mm <sup>2</sup> / 2 x 1.5 mm <sup>2</sup>
Input resistance (current)	≤ 50 Ω	Housing material	Polycarbonate/ABS
		Mounting instruction	for DIN rail / panel
Outputs		Protection class	1P20
Load resistance, current output	$\leq 0.5 \text{ k}\Omega$	Flammability class acc. to UL 94	V-0
Output current	0/420 mA	Dimensions	18 x 104 x 110 mm
		Difficitions	10 x 10 + x 110 111111
Response characteristic		Approval   Certification	ATEX, IECEx, UL, cFMus, TR CU, NEPSI
Measuring accuracy	$\leq$ 0.2 % of full scale	Approval   certification	ATEA, IECEA, OE, CIMUS, THEO, NEI SI
Reference temperature	23 ℃		
Temperature drift	$\leq$ 0.01 % / K		
Rise time (10-90%)	≤ 50 ms		
Dropout time (9010%)	≤ 50 ms		
Approvals and declarations			
Ex approval acc. to conformity certificate	TÜV 04 ATEX 2679		
Device designation	II (1) G; II (1) D [Ex ia Ga] [Ex ia Da] IIIC	] IIC/IIB;	
Max. values:	Terminal connection: 13		
Max. output voltage U <sub>o</sub>	≤7.2 V		
Max. output current I <sub>o</sub>	$\leq$ 1 mA		
Max. output power P <sub>o</sub>	$\leq$ 2 mW		
Rated voltage	250 V		
Characteristic	linear		
Internal inductance/capacitance L <sub>i</sub> /C <sub>i</sub>	$L_i = 65 \mu H; C_i = 52 nF$		
External inductance/capacitance $L_o/C_o$			
Ex ia IIC	IIB		
L <sub>o</sub> [mH] 0.5 4.5 9.5	1.5 9.5 20		
6 [ [] 2 4 5	0 (7 (4		

Ex ia	IIC			IIB			
L <sub>o</sub> [mH]	0.5	4.5	9.5	1.5	9.5	20	
C <sub>0</sub> [μF]	2	1.5	1.3	9	6.7	6.1	

TÜV 06 ATEX 553387 X Ex approval acc. to conformity certificate

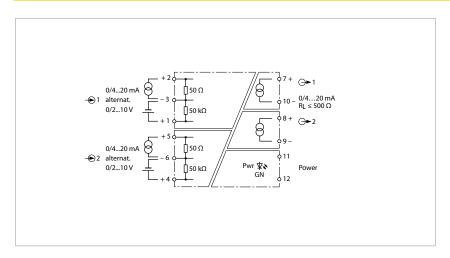
II3GApplication area

Protection type Ex nA [ic Gc] IIC/IIB T4 Gc Max. values:  $Terminal \ connection; 1 \ldots 3$ 

≤ 7.2 V Max.output voltage  $U_{\rm o}$ Max. output current  $I_{\rm o}$  $\leq 1 \, \text{mA}$ Max. output power Po  $\leq$  2 mW Characteristiclinear

#### External inductance/capacitance $L_o/C_o$

Ex ic	IIC			IIB			
L₀ [mH]	0.5	4.5	9.5	1.5	9.5	20	
C <sub>0</sub> [μF]	3.9	2.5	2.2	17	12	10	



#### **Features**

- TR CU
- Transmission of normalized signals
- Input circuit: 2 x 0/2...10 V or 0/ 4...20 mA
- Output circuit: 2 x 0/4...20 mA
- Complete galvanic isolation

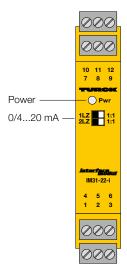
Standard active voltage or current signals are transmitted galvanically isolated via the 2-channel analog signal isolator IM31-22-I.

The device features two input circuits of 0/2...10 V or 0/4...20 mA as well as two

short-circuit proof output circuits of 0/4...20 mA.

The transmission characteristic is adjusted via a DIP switch on the front. In "1: 1" switch position, the input signals are transmitted directly to the outputs. In

"LZ" switch position, a dead-zero signal at the input (0...10 V / 0...20 mA) is converted and provided as a live-zero signal at the output (4...20 mA).



**Type** IM31-22-I Ident no. 7506325

**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
 ≤ 2.2 W

Inputs

 $\begin{tabular}{ll} Voltage input & 0/2...10 \ VDC \\ Input resistance (voltage) & $\geq 50 \ k\Omega$ \\ Current input & 0/4...20 \ mA \\ Input resistance (current) & $\leq 50 \ \Omega$ \\ \end{tabular}$ 

Outputs

Load resistance, current output  $\leq 0.5 \text{ k}\Omega$ Output current 0/4...20 mA

Response characteristic

Measuring accuracy  $\leq$  0.1 % of full scale

Reference temperature 23 °C 
Temperature drift  $\leq 0.005 \% / K$  Rise time (10-90%)  $\leq 50 \text{ ms}$  Dropout time (90...10%)  $\leq 50 \text{ ms}$ 

Indication

Operational readiness green

**Environmental Conditions** 

Ambient temperature -25...+70 °C Storage temperature -40...+80 °C Relative humidity  $\leq 95$  % Test voltage 2.5 kV

Mechanical data

Tightening torque 0.5 Nm

Electrical connection 4 x 3-pin removable terminal blocks,

reverse polarity protected, screw

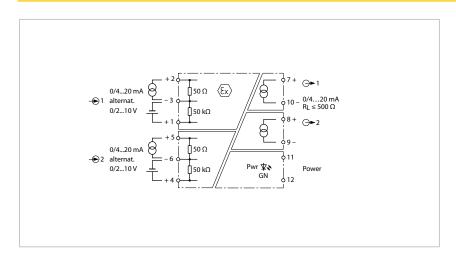
connection

Terminal cross-section 1 x 2.5 mm² / 2 x 1.5 mm²
Housing material Polycarbonate/ABS
Mounting instruction for DIN rail / panel

Protection class IP20
Flammability class acc. to UL 94 V-0

Dimensions 18 x 104 x 110 mm

Approval | Certification TR CU



#### **Features**

- ATEX, IECEx, UL, <sub>C</sub>FM<sub>US</sub>, TR CU, NEPSI
- Installation in zone 2
- Transmission of normalized analog signals from the Ex area to the non-Ex area
- Input circuits: 0/2...10 V or 0/4...20 mA
- Output circuits: 0/4...20 mA
- Complete galvanic isolation

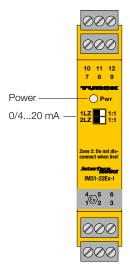
The 2-channel analog signal isolator IM31-22EX-I is designed to transmit normalized active voltage or current signals galvanically isolated from the Ex area to the non-Ex area.

The device features two input circuits of 0/2...10 V or 0/4...20 mA as well as two

short-circuit proof output circuits of 0/4...20 mA.

The transmission characteristic is adjusted via a DIP switch on the front. In switch position "1:1", the input signals are transmitted directly to the outputs in the non-Ex area. In "LZ" switch position, a dead-

zero signal at the input (0...10 V / 0...20 mA) is converted and provided as a live-zero signal at the output (4...20 mA).



Туре	IM31-22I	FX-I		Indication	
Ident no.	7506322			Operational readiness	green
Power supply				Environmental Conditions	
Nominal voltage	Universa	l voltage sup	ply unit	Ambient temperature	-25…+70 ℃
Operating voltage range	20125	S VDC		Storage temperature	-40+80 °C
Operating voltage range	20250	VAC		Relative humidity	≤ 95 %
Frequency	4070	Hz		Test voltage	2.5 kV
Power consumption	$\leq$ 2.2 W				
				Mechanical data	
Inputs				Tightening torque	0.5 Nm
Voltage input	0/210	VDC		Electrical connection	4 x 3-pin removable terminal blocks,
Input resistance (voltage)	$\geq 50 \ k\Omega$				reverse polarity protected, screw connection
Current input	0/420	mA		Terminal cross-section	1 x 2.5 mm <sup>2</sup> / 2 x 1.5 mm <sup>2</sup>
Input resistance (current)	≤ 50 Ω			Housing material	Polycarbonate/ABS
				Mounting instruction	for DIN rail / panel
Outputs				Protection class	IP20
Load resistance, current output	$\leq 0.5 \text{ k}\Omega$			Flammability class acc. to UL 94	V-0
Output current	0/420	mA		Dimensions	18 x 104 x 110 mm
Response characteristic				A He est es	ATTY IFCE III FM TD CII NEDCI
Measuring accuracy	≤ 0.2 %	of full scale		Approval   Certification	ATEX, IECEx, UL, <sub>c</sub> FM <sub>us</sub> , TR CU, NEPSI
Reference temperature	23 °C				
Temperature drift	≤ 0.01 %	5 / <b>K</b>			
Rise time (10-90%)	≤ 50 ms				
Dropout time (9010%)	≤ 50 ms				
Approvals and declarations					
Ex approval acc. to conformity certificate	TÜV 04 A	TEX 2679			
Device designation	€x II (1 [Ex ia Da]		[Ex ia Ga] IIC/IIB;		
Max. values:	Terminal	connection:	13/46		
Max. output voltage U₀	≤ 7.2 V				
Max. output current I <sub>o</sub>	$\leq 1  \text{mA}$				
Max. output power P <sub>o</sub>	$\leq$ 2 mW				
Rated voltage	250 V				
Characteristic	linear				
Internal inductance/capacitance L <sub>i</sub> /C <sub>i</sub>	$L_i = 65 \mu$	$H; C_i = 52 \text{ nF}$	•		
External inductance/capacitance L <sub>o</sub> /C <sub>o</sub>					
Ex ia IIC	IIB				
L <sub>0</sub> [mH] 0.5 4.5 9.5	1.5	9.5	20		
C <sub>0</sub> [μF] 2 1.5 1.3	9	6.7	6.1		
Ex approval acc. to conformity certificate	TÜV 06 A	TEX 553387	Х		

### Characteristic External inductance/capacitance $L_o/C_o$

Application area Protection type

Max.output voltage  $U_o$  Max. output current  $I_o$ 

Max. output power Po

Max. values:

Ex ic	IIC			IIB		
L <sub>o</sub> [mH]	0.5	4.5	9.5	1.5	9.5	20
C <sub>0</sub> [μF]	3.9	2.5	2.2	17	12	10

II3G

≤ 7.2 V

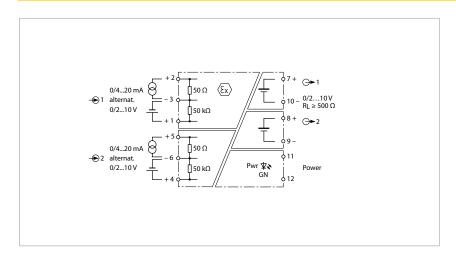
 $\leq 1 \, \text{mA}$ 

 $\leq$  2 mW

linear

Ex nA [ic Gc] IIC/IIB T4 Gc

Terminal connection: 1...3/4...6



#### **Features**

- ATEX, IECEx, UL, <sub>C</sub>FM<sub>US</sub>, TR CU, NEPSI
- Installation in zone 2
- Transmission of normalized analog signals from the Ex area to the non-Ex area
- Input circuits: 0/2...10 V or 0/4...20 mA
- Output circuits: 0/2...10 V
- Complete galvanic isolation

The 2-channel analog signal isolator IM31-22EX-U is designed to transmit normalized active voltage or current signals galvanically isolated from the Ex area to the non-Ex area.

The device features two input circuits of 0/2...10 V or 0/4...20 mA as well as two

short-circuit proof output circuits of 0...10 V.

The transmission characteristic is adjusted via a DIP switch on the front. In switch position "1:1", the input signals are transmitted directly to the outputs in the non-Ex area. In "LZ" switch position, a dead-

zero signal at the input (0...10 V / 0...20 mA) is converted and provided as a live-zero signal at the output (0...10 V).



Туре			IM31-22	EX-U		Indication	
ldent no.			7506326	5		Operational readiness	green
Power supply	у					Environmental Conditions	
Nominal volta	ige		Universa	ıl voltage sup	ply unit	Ambient temperature	-25+70 °C
Operating volt	tage range		2012	5 VDC		Storage temperature	-40+80 °C
Operating volt	tage range		2025	0 VAC		Relative humidity	≤ 95 %
Frequency			4070	Hz		Test voltage	2.5 kV
Power consum	nption		≤ 2.2 W				
						Mechanical data	
Inputs						Tightening torque	0.5 Nm
Voltage input			0/21	O VDC		Electrical connection	4 x 3-pin removable terminal blocks,
Input resistan	ce (voltage)		$\geq$ 50 k $\Omega$				reverse polarity protected, screw
Current input			0/42	0 mA		Terminal cross-section	connection 1 x 2.5 mm <sup>2</sup> / 2 x 1.5 mm <sup>2</sup>
Input resistan	ce (current)		$\leq$ 50 $\Omega$			Housing material	Polycarbonate/ABS
						Mounting instruction	for DIN rail / panel
Outputs						Protection class	IP20
Load resistance	ce voltage output		≥ 0.5 kg	)		Flammability class acc. to UL 94	V-0
Output voltage	Output voltage			0 V		Dimensions	v-u 18 x 104 x 110 mm
						טווווכווזוטווז	10 x 104 x 110 111111
Response cha						Approval   Certification	ATEX, IECEx, UL, <sub>c</sub> FM <sub>us</sub> , TR CU, NEPSI
Measuring acc	•			of full scale		•	· ·
Reference tem	•		23 ℃				
Temperature of			≤ 0.01 9				
Rise time (10-			≤ 50 ms				
Dropout time	(9010%)		≤ 50 ms				
Approvals ar	nd declarations						
Ex approval ac	cc. to conformity cer	tificate	TÜV 04 /	ATEX 2679			
Device designa	ation		€ II ( [Ex ia Da		Ex ia Ga] IIC/IIB;		
Max. values:			Termina	l connection:	13/46		
Max. output v	oltage $U_{\scriptscriptstyle{0}}$		≤ 7.2 V				
Max. output co	-		$\leq 1  \text{mA}$				
Max. output p	ower P <sub>o</sub>		$\leq$ 2 mW				
Rated voltage	!		250 V				
Characteristic			linear				
	tance/capacitance L		$L_i = 65 \mu$	$_{i}H; C_{i} = 52 \text{ nF}$	:		
External ind	uctance/capacitaı	nce L <sub>o</sub> /C <sub>o</sub>					
Ex ia	IIC		IIB				
L <sub>o</sub> [mH]	0.5 4.5	9.5	1.5	9.5	20		
C <sub>0</sub> [μF]	2 1.5	1.3	9	6.7	6.1		

Ex ic	IIC			IIB			
L <sub>o</sub> [mH]	0.5	4.5	9.5	1.5	9.5	20	
C <sub>0</sub> [μF]	3.9	2.5	2.2	17	12	10	

TÜV 06 ATEX 553387 X

Ex nA [ic Gc] IIC/IIB T4 Gc

Terminal connection: 1...3/4...6

II3G

≤ 7.2 V

 $\leq 1 \, \text{mA}$ 

 $\leq$  2 mW

linear

Ex approval acc. to conformity certificate

External inductance/capacitance  $L_o/C_o$ 

Application area

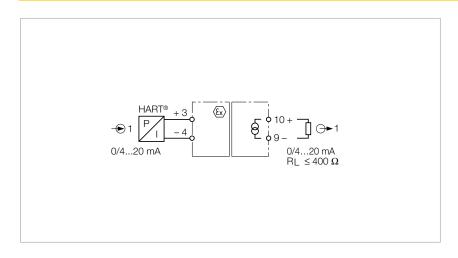
Protection type

Max.output voltage  $U_o$  Max. output current  $I_o$ 

Max. output power Po

Max. values:

Characteristic



#### **Features**

- ATEX, IECEx, TR CU, NEPSI
- Installation in zone 2
- HART® transmissible
- Complete galvanic isolation

Standard active current signals are galvanically isolated and transmitted via the 1-channel analog signal isolator IME-Al-11EX-i/L from the Ex area to the non-Ex area.

The device features one input circuit 0/4... 20 mA and one short-circuit proof output circuit 0/4...20 mA.

Input and output circuit are safely galvanically isolated. The input signals are

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

The device is loop-powered and HART® transmissible.



 Type
 IME-AI-11Ex-Hi/L

 Ident no.
 7541192

**Power supply** 

Nominal voltage 24 VDC loop-powered

Power consumption  $\leq$  0.75 W

Inputs

Voltage input max. 30 VDC Current input 0...20 mA

Control circuits Current limiting 42 mA

**Outputs** 

Response characteristic

Measuring accuracy  $\leq$  0.1 % of full scale

Reference temperature 23 °C Temperature drift  $\leq$  0.001 % / K

Rise time (10-90%)  $\leq$  10 ms Dropout time (90...10%)  $\leq$  10 ms

**Approvals and declarations** 

Ex approval acc. to conformity certificate TÜV 08 ATEX 553236

Device designation E II (1) G, II (1) D [Ex ia] IIB/IIC; [Ex

iaD]

Max. values: Terminal connection: 3+4

 $\begin{tabular}{llll} Rated voltage & 250 V \\ Max. input voltage $U_i$ & $\leq 27 V$ \\ Max. input current $I_i$ & $\leq 150 \text{ mA}$ \\ Max. input power $P_i$ & $\leq 1000 \text{ mW}$ \\ Internal inductance/capacitance $L_i/C_i$ & negligibly small \\ Ex approval acc. to conformity certificate & TÜV 08 ATEX 554624 X \\ \end{tabular}$ 

Application area II 3 G

Protection type Ex nA [nL] IIC/IIB T4

Max. values: Terminal connection: 3+4

 $\label{eq:max.input} \begin{array}{ll} \text{Max. input voltage U}_i & \leq 27 \text{ V} \\ \text{Max. input current I}_i & \leq 150 \text{ mA} \\ \text{Max. input power P}_i & \leq 1000 \text{ mW} \\ \text{Internal inductance/capacitance L}_i/C_i & \text{negligibly small} \\ \text{Declaration} & \text{SIL 2 acc. to EXIDA FMEDA} \end{array}$ 

**Environmental Conditions** 

Ambient temperature  $-25...+70\,^{\circ}\text{C}$ Storage temperature  $-40...+80\,^{\circ}\text{C}$ Test voltage  $2.5\,\text{kV}$ 

MTTF 537 years acc. to SN 29500 (Ed. 99)

40 °C

Mechanical data

Electrical connection Spring terminal made of Beryllium-

Bronze

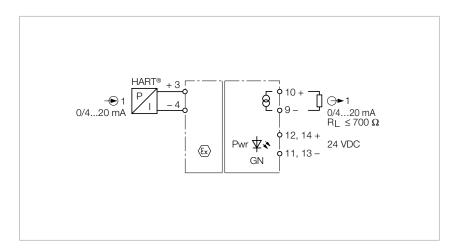
Terminal cross-section 1.5 mm<sup>2</sup>

Housing materialPolycarbonate/ABSMounting instructionfor DIN railProtection classIP20Flammability class acc. to UL 94V-0

Dimensions 18 x 112 x 110 mm

Approval | Certification

ATEX, IECEx, TR CU, NEPSI



#### **Features**

- ATEX, IECEx, TR CU, NEPSI
- Installation in zone 2
- HART® transmissible
- Complete galvanic isolation

Standard active current signals are galvanically isolated and transmitted via the 1-channel analog signal isolator IME-Al-11EX-Hi/24VDC from the Ex area 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, each with 0/4...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.



 Type
 IME-AI-11Ex-Hi/24VDC

 Ident no.
 7541198

 Power supply
 Voltage

 Nominal voltage
 24 VDC

 Operating voltage range
 20...30 VDC

 Power consumption
 ≤ 0.75 W

Current input 0/4...20 mA
Control circuits Current limiting 42 mA

Outputs

 $\begin{array}{lll} \mbox{Load resistance, current output} & \leq 0.7 \ k\Omega \\ \mbox{Output current} & 0/4 \dots 20 \ mA \\ \mbox{Wire break monitoring} & \leq 1 \ mA \\ \mbox{Short circuit monitoring} & \geq 22.5 \ mA \\ \end{array}$ 

Response characteristic

 $\begin{tabular}{lll} Measuring accuracy & \le 0.1 \% \ of full scale \\ Temperature drift & \le 0.001 \% \ / \ K \\ Rise time (10-90\%) & \le 10 \ ms \\ Dropout time (90...10\%) & \le 10 \ ms \\ \end{tabular}$ 

**Approvals and declarations** 

Ex approval acc. to conformity certificate TÜV 10 ATEX 555275

ia Da]

Max. values: Terminal connection: 3+4

Application area II 3 G

Protection type Ex nA [nL] IIC/IIB T4

Max. values: Terminal connection: 3+4

 $\label{eq:max.input} \begin{array}{ll} \text{Max. input voltage U}_i & \leq 27 \text{ V} \\ \text{Max. input current I}_i & \leq 150 \text{ mA} \\ \text{Max. input power P}_i & \leq 1000 \text{ mW} \\ \text{Internal inductance/capacitance L}_i/C_i & \text{negligibly small} \\ \text{Declaration} & \text{SIL 2 acc. to EXIDA FMEDA} \end{array}$ 

Indication

Operational readiness green

**Environmental Conditions** 

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

MTTF 435 years acc. to SN 29500 (Ed. 99)

40 °C

**Mechanical data** 

Electrical connection Spring terminal made of Beryllium-

Bronze

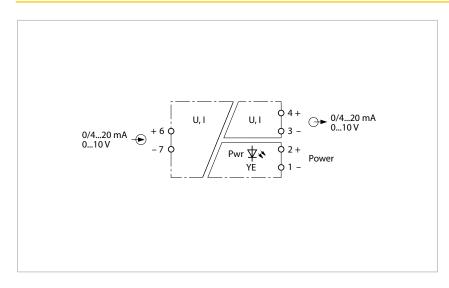
Terminal cross-section 1.5 mm<sup>2</sup>

Housing materialPolycarbonate/ABSMounting instructionfor DIN railProtection classIP20Flammability class acc. to UL 94V-0

Dimensions 18 x 112 x 110 mm

Approval | Certification

ATEX, IECEx, TR CU, NEPSI



#### **Features**

- UL: Class1, Div 2, Group A, B, C, D; GOST
- Input circuit: 0/4...20 mA or 0...10 V
- Output circuit: 0/4...20 mA or 0...10 V
- Type of input and output signal adjusted via DIP switch
- Linearity < 0.1 % f.s.</p>
- Accuracy < 0.1 % f.s.</p>
- Complete galvanic isolation
- 6.2 mm width

Standard active voltage or current signals are transmitted galvanically isolated and converted to other signal types via the 1-channel universal analog signal isolator IMS-AI-UNI/24VDC.

The device is equipped with available input circuit of 0/4...20 mA or 0...10 V and

a variable short-circuit proof output circuit of 0/4...20 mA or 0...10 V.

The transmission characteristic (for input and output signal type) is adjusted via side-mounted DIP switches. The input signals are transmitted according to the

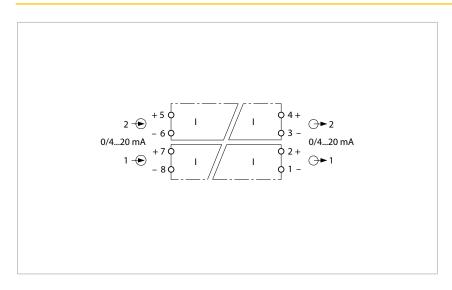
setting and made available at the output.

The green LED indicates operational readiness.

With a width of 6.2 mm, the device is galvanically isolated up to 1.5 kV.



Туре	IMS-AI-UNI/24V
ldent no.	7504009
Power supply	
Nominal voltage	24 VDC
Operating voltage range	1929 VDC
Power consumption	≤ 0.312 W
Residual ripple	$\leq$ 5 mV <sub>ss</sub>
Inputs	
Voltage input	0/210 VDC
Input resistance (voltage)	$\geq 330 \ k\Omega$
Current input	0/420 mA
Input resistance (current)	≤ 100 Ω
Outputs	
Load resistance, current output	$\leq 0.4  k\Omega$
Load resistance voltage output	$\geq 1 \ k\Omega$
Output current	0/420 mA
Output voltage	010 V
Response characteristic	
Measuring accuracy	$\leq$ 0.1 % of full scale
Temperature drift	$\leq$ 0.00015 % / K
Rise time (10-90%)	≤ 10 ms
Dropout time (9010%)	≤ 10 ms
Indication	
Operational readiness	green
Environmental Conditions	
Ambient temperature	-20+60 °C
Storage temperature	-40+80 °C
Test voltage	1.5 kV
Mechanical data	
Tightening torque	0.5 Nm
Electrical connection	screw terminals
Terminal cross-section	2.5 mm <sup>2</sup>
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail
Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	6.2 x 114.5 x 90 mm
Approval   Certification	<sub>c</sub> UL <sub>us</sub> , GOST



#### **Features**

- UL: Class1, Div 2, Group A, B, C, D; GOST
- Input circuits: 0/4...20 mA
- Output circuits: 0/4...20 mA
- Linearity < 0.1 % f.s.</p>
- Accuracy < 0.1 % f.s.</li>
- Complete galvanic isolation
- 6.2 mm width

The 2-channel analog signal isolator IMS-AI-DLI-22-DLI/L is designed to transmit normalized active current signals galvanically isolated.

The device features two input circuits 0/4...20 mA and two short-circuit proof output circuits 0/4...20 mA.

The device is loop powered, transmission starts with 250  $\mu$ A. Required minimum voltage 2.8 V + (20 mA x R<sub>load</sub>).

The input signals are transmitted 1:1 and are presented to the relevant output.

The device is loop-powered. Separate power supply is not necessary.



 Type
 IMS-AI-DLI-22-DLI/L

 Ident no.
 7504011

**Power supply** 

Nominal voltage 24 VDC loop-powered

Power consumption  $\leq 0.312 \text{ W}$ Residual ripple  $\leq 5 \text{ mV}_{ss}$ 

Inputs

 $\begin{array}{ll} \mbox{Voltage input} & \mbox{max. 29 VDC} \\ \mbox{Current input} & \mbox{0/4...20 mA} \\ \mbox{Input resistance (current)} & \mbox{\le 100 }\Omega \\ \end{array}$ 

Outputs

Load resistance, current output  $\leq$  0.4 k $\Omega$ Output current 0/4...20 mA

Response characteristic

 $\begin{tabular}{lll} Measuring accuracy & \le 0.1 \% \ of full scale \\ Temperature drift & \le 0.00015 \% \ / \ K \\ Rise time (10-90\%) & \le 10 \ ms \\ Dropout time (90...10\%) & \le 10 \ ms \\ \end{tabular}$ 

**Environmental Conditions** 

Ambient temperature  $-20...+60\,^{\circ}\text{C}$ Storage temperature  $-40...+80\,^{\circ}\text{C}$ Test voltage  $1.5\,\text{kV}$ 

Mechanical data

Tightening torque 0.5 Nm

Electrical connection screw terminals

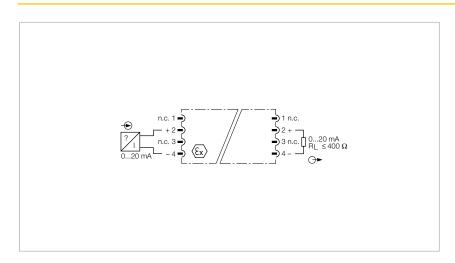
Terminal cross-section 2.5 mm²

Housing material Polycarbonate/ABS

Mounting instruction for DIN rail
Protection class IP20
Flammability class acc. to UL 94
V-0

Dimensions 6.2 x 114.5 x 90 mm

Approval | Certification cUL<sub>us</sub>, GOST



#### **Features**

- ATEX, IECEx, TR CU
- Installation in zone 2/22
- Analog signal isolator with M12 x 1 connectors, 1-channel
- Input circuit: 0/4...20 mA
- Output circuit: 0/4...20 mA
- Complete galvanic isolation
- Protection class IP67

The 1-channel analog signal isolator IMC-AI-11EX-I/L features an intrinsically safe input circuit. The device can be mounted in zone 2.

The device must be protected against mechanical load on connector and housing when mounted in zone 2 or 22. For

this, use the TURCK cover plate IMC-SG (Ident no. 7560016).

The standard current signal is transmitted from the Ex-area to the safe area without attenuation (1:1). The output circuit is equipped with a short-circuit protected power source.

Intrinsically save analog data transmitters can be connected to the device in the Ex area.

The device is loop-powered.



#### Pin assignment male M12



## Pin assignment female M12 (intrinsically safe end)



**Type** IMC-AI-11EX-I/L Ident no. 7560004

Power supply

Nominal voltage 24 VDC loop-powered

Power consumption  $\leq 3 \text{ W}$ 

Inputs

Voltage input max. 30 VDC
Current input 0...20 mA

Outputs

Response characteristic

Measuring accuracy  $\leq$  0.1 % of full scale

Reference temperature 23 °C 
Temperature drift  $\leq 0.005 \% / K$  
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 07 ATEX 553222

Device designation

\( \begin{align\*} \tilde{\text{LV}} & \tilde{\text{II}} & \tilde{\text{III}} & \tilde{\text{IIII}} & \tilde{\text{IIIII}} & \tilde{\text{IIIII}} & \tilde{\text{III

Rated voltage 250 V

Max. values: M12 female connection: 2+4

 $\label{eq:max.input} \begin{array}{ll} \text{Max. input voltage U}_i & \leq 27 \text{ V} \\ \text{Max. input current I}_i & \leq 150 \text{ mA} \\ \text{Max. input power P}_i & \leq 1000 \text{ mW} \\ \text{Internal inductance/capacitance L}_i/C_i & \text{negligibly small} \\ \text{Ex approval acc. to conformity certificate} & \text{T\"{U}V 07 ATEX 553945 X} \end{array}$ 

Application area II 3 GD

Protection type Ex nA [nL] IICIIB T4 or rather Ex tDA 22

IB67 T80°C

Max. values: M12 female connection: 2+4

 $\begin{aligned} & \text{Max. input voltage U}_i & \leq 27 \text{ V} \\ & \text{Max. input current I}_i & \leq 150 \text{ mA} \\ & \text{Max. input power P}_i & \leq 1000 \text{ mW} \end{aligned}$ 

Approval SIL2 acc. to EXIDA FMEDA

**Environmental Conditions** 

Ambient temperature  $-25...+70\,^{\circ}\text{C}$  Storage temperature  $-40...+80\,^{\circ}\text{C}$ 

Test voltage 2.5 kV

MTTF 565 years acc. to SN 29500 (Ed. 99)

40 °C

**Mechanical data** 

Tightening torque 3.5 Nm

 Electrical connection
 M12 flange connection

 Housing material
 Polycarbonate/ABS

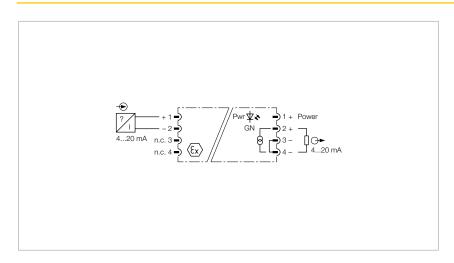
 Mounting instruction
 for panel

 Protection class
 IP67

 Dimensions
 32 x 100 x 25 mm

Approval | Certification ATEX, IECEx, TR CU

## Isolating transducer, 1-channel



#### **Features**

- ATEX, IECEx, TR CU
- Installation in zone 2/22
- Isolating transducer with M12 x 1 connectors, 1-channel
- Output circuit: 0/4...20 mA
- Complete galvanic isolation
- Protection class IP67

The 1-channel isolating transducer IMC-AIA-11Ex-i/24VDC features an intrinsically safe input circuit. The device can be mounted in zone 2.

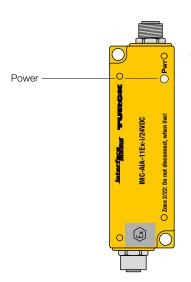
The device must be protected against mechanical load on connector and housing when mounted in zone 2 or 22. For

this, use the TURCK cover plate IMC-SG (Ident no. 7560016).

The standard current signal is transmitted from the Ex-area to the safe area without attenuation (1:1). The output circuit is equipped with a short-circuit protected power source.

Intrinsically save analog data transmitters can be connected to the device in the Ex area.

The device is designed for a 24 VDC supply. A green LED indicates operational readiness.



#### Pin assignment male M12



## Pin assignment female M12 (intrinsically safe end)



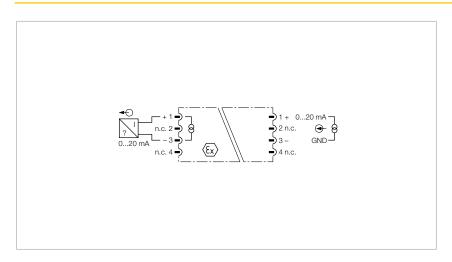
Туре		IMC-AIA-11EX-I/24VDC			
ldent no.		7560009			
Power sup					
Nominal vo	-		24 VDC		
Operating	voltage range		2030 VDC		
Power cons	sumption		≤ 1.5 W		
Inputs					
Supply volt	age		$\leq$ 14 V / 20 m	nA	
Current			25 mA		
Current inp	out		420 mA		
Outputs					
Load resist	ance, current ou	ıtput	$\leq$ 0.5 k $\Omega$		
Output cur	rent		020 mA		
Rasnanca	characteristic				
Measuring		•	< 0.1 % of fu	ıll scale	
-	temperature		_ 011 /0 01 10	iii scale	
	-		23 °C		
Temperatu			≤ 0.005 % / K		
Rise time (			≤ 10 ms		
propout tii	ne (9010%)		≤ 10 ms		
	and declarat				
Ex approval acc. to conformity certificate			TÜV 07 ATEX		
Device designation			€ II (1) GD	-	
Max. values:			M12 female	connection: 1+2	
Max. outpu	ıt voltage $U_{\scriptscriptstyle{0}}$		$\leq$ 21.8 V		
Max. outpu	ıt current l₀		$\leq$ 64.5 mA		
Max. outpu	ıt power P <sub>o</sub>		$\leq$ 1130 mW		
Rated volta	ige		250 V		
Characteris	tic		Trapezoidal		
Internal inc	ductance/capac	itance L <sub>i</sub> /C <sub>i</sub>	L <sub>i</sub> = negligib	ly small; $C_i = 11 \text{ nF}$	
External i	nductance/ca	pacitance L <sub>o</sub> /C <sub>o</sub>			
Ex ia	IIB				
L <sub>o</sub> [mH]	5.8	0.2			
C <sub>o</sub> [nF]	469	799			
Max. outpu	ıt voltage U <sub>o</sub>		≤ 21.8 V		
	it current l		≤ 64.5 mA		
Max. output power P <sub>o</sub>			≤ 1130 mW		
Characteristic			linear		
Internal inductance/capacitance L <sub>i</sub> /C <sub>i</sub>			$C_i = 11$ nF, $L_i = $ negligibly small		
	-	pacitance L <sub>o</sub> /C <sub>o</sub>	ન/ને		
Ex nL	IIC		IIB	4-	
L <sub>o</sub> [mH] 0.85 0.2		22	10		
C <sub>o</sub> [nF]	129	219	800	1200	
Ex approva	l acc. to conforr	nity certificate	TÜV 07 ATEX	554129 X	
Application area			II 3G, II 3D		
Protection type			Ex nA [nL] IIB/IIC T4 or rather Ex tD		
			A22 IP67 T 80	O°C Dc	

Max. values:	M12 female connection: 1+2
Max.output voltage $\mathrm{U}_{\mathrm{o}}$	≤ 21.8 V
Max. output current I <sub>o</sub>	≤ 64.5 mA
Max. output power P <sub>o</sub>	$\leq$ 1130 mW
Characteristic	trapezoidal
Internal inductance/capacitance L <sub>i</sub> /C <sub>i</sub>	$L_i$ = negligibly small; $C_i$ = 11 nF
External inductance/capacitance $L_o/C_o$	$C_i = 11$ nF, $L_i = negligibly small$
Approval	SIL2 acc. to EXIDA FMEDA
Indication	
Operational readiness	green

Environmental Conditions	
Ambient temperature	-25+70 ℃
Storage temperature	-40+80 °C
Test voltage	2.5 kV
MTTF	294 years acc. to SN 29500 (Ed. 99) 40 °C
Mechanical data	

Mecnanical data	
Tightening torque	3.5 Nm
Electrical connection	M12 flange connection
Housing material	Polycarbonate/ABS
Mounting instruction	for panel
Protection class	IP67
Dimensions	32 x 100 x 25 mm

Approval   Certification	ATEX, IECEx, TR CU	
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#### **Features**

- ATEX, IECEx, TR CU
- Installation in zone 2/22
- Analog signal isolator with M12 x 1 connectors, 1-channel
- Input circuit: 0/4...20 mA
- Output circuit: 0/4...20 mA
- Complete galvanic isolation
- Protection class IP67

The 1-channel analog signal isolator IMC-AO-11Ex-i/L features an intrinsically safe output circuit. The device can be mounted in zone 2.

The device must be protected against mechanical load on connector and housing when mounted in zone 2 or 22. For

this, use the TURCK cover plate IMC-SG (Ident no. 7560016).

The normalized current signal is transmitted, galvanically isolated 1:1, from the non-Ex to the Ex-area. The output circuit is equipped with a short-circuit proof power source.

Intrinsically analog actuators like I/P converters (e.g. at control valves) or displays can be applied in the Ex area.

The device is loop-powered.



#### Pin assignment male M12



## Pin assignment female M12 (intrinsically safe end)



Туре	IMC-AO-11EX-I/L
ldent no.	7560006
Power supply	
Nominal voltage	24 VDC loop-powered
Power consumption	≤ 3.5 W
Inputs	
Voltage input	max. 30 VDC
Current input	020 mA
Outputs	
Load resistance, current output	$\leq 0.4  k\Omega$
Output current	020 mA
Response characteristic	

 $\leq$  0.1 % of full scale

 $\leq 0.005\,\%\,/\,K$ 

≤ 10 ms

 $\leq$  10 ms

23 ℃

### Dropout time (90...10%)

Measuring accuracy Reference temperature

Temperature drift

Rise time (10-90%)

**Approvals and declarations** Ex approval acc. to conformity certificate TÜV 07 ATEX 553223 Device designation Max. values: M12 female connection: 1+3 ≤ 13.3 V Max. output voltage U<sub>o</sub> Max. output current Io ≤ 97 mA Max. output power Po  $\leq$  322 mW Rated voltage 250 V Characteristic linear Internal inductance/capacitance L<sub>i</sub>/C<sub>i</sub> negligibly small External inductance/capacitance  $L_o/C_o$ 

Ex ia	IIC		IIB			
L <sub>o</sub> [mH]	2	0.2	2	0.2		
C <sub>o</sub> [nF]	420	910	2700	5500		
Ex approva	Ex approval acc. to conformity certificate			TÜV 07 ATEX 553946 X		
Application	Application area			II 3G, II 3D		
Protection	Protection type			Ex nA [nL] IIC/IIB T4 or rather Ex tD A22 IP67 T80°C		
Max. values:			M12 female	connection: 1+3		
Max.output voltage U <sub>o</sub>			≤ 13.3 V			
Max. outpu	Max. output current I <sub>o</sub>					
Max. output power P <sub>o</sub>			≤ 322 mW			
Characteris	Characteristic					
Internal inductance/capacitance L <sub>i</sub> /C <sub>i</sub>			negligibly small			

#### External inductance/capacitance L<sub>o</sub>/C<sub>o</sub>

Ex ia	IIC		IIB	
L <sub>o</sub> [mH]	5	0.5	10	1.0
C <sub>0</sub> [nF]	510	1200	2900	5800
Approval			SIL2 acc. to E	XIDA FMEDA

#### **Environmental Conditions**

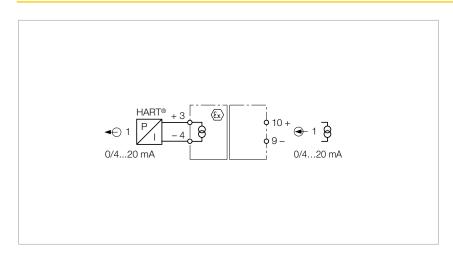
Ambient temperature	-25+70 °C
Storage temperature	-40+80°C
Test voltage	2.5 kV
MTTF	566 years acc. to SN 29500 (Ed. 99)
	40 ℃

#### Mechanical data

Tightening torque	3.5 Nm
Electrical connection	M12 flange connection
Housing material	Polycarbonate/ABS
Mounting instruction	for panel
Protection class	IP67
Dimensions	32 x 100 x 25 mm

### Approval | Certification

ATEX, IECEx, TR CU



#### **Features**

- ATEX, IECEx, TR CU, NEPSI
- Installation in zone 2
- Output isolator, 1-channel
- HART® transmissible
- Connection of positioners, displays etc.
- Complete galvanic isolation

The 1-channel analog data transmitter IME-AO-11Ex-i/L has an intrinsically safe output circuit.

The normalized current signal is transmitted, galvanically isolated 1:1, from the non-Ex to the Ex-area.

The output circuit is equipped with a short-circuit proof power source. Intrinsi-

cally analog actuators like I/P converters (e.g. at control valves) or displays can be applied in the Ex area.

The device is loop-powered.



Туре			IME-AO-11Ex-Hi/L			
ldent no.			7541194			
Power su						
Nominal vo	•		•	24 VDC loop-powered		
Power con	sumption		≤ 0.75 W			
Inputs						
Voltage input			max. 30 VDC			
Current input			020 mA			
Control cire	cuits		Current limiting 42 mA			
Outputs						
Output circuits			020 mA	020 mA		
Load resistance, current output			$\leq 0.4 \text{ k}\Omega$			
Output cur			020 mA	020 mA		
Output vol	tage		max. 13 V			
-	characteristi	c				
-	Measuring accuracy			≤ 0.1 % of full scale		
Reference temperature			23 °C			
Temperature drift			≤ 0.001 % / K			
Rise time (				≤ 10 ms		
Dropout tii	me (9010%)		≤ 10 ms			
	s and declarat					
	al acc. to confor	mity certificate	_	TÜV 08 ATEX 554800		
Device designation			⟨			
Max. value	es:		Terminal connection: 3+4			
	ut voltage $U_{\scriptscriptstyle{0}}$		≤ 13.3 V			
	ut current I <sub>o</sub>		≤ 97 mA	≤ 97 mA		
	ut power P <sub>o</sub>		≤ 322 mW	≤ 322 mW		
Rated volta	-			250 V		
Characteris		1. 1.16		linear		
	ductance/capad i <b>nductance/ca</b>	citance L <sub>i</sub> /C <sub>i</sub> I <b>pacitance L<sub>o</sub>/C<sub>o</sub></b>	negligibly sn	nall		
Ex ia	IIC		IIB			
L <sub>o</sub> [mH]	2	0.2	2	0.2		
$C_o[\mu F]$	0.42	0.91	2.7	5.5		
Max. outpu	ut voltage U		≤ 13.3 V			
-	ut current I <sub>o</sub>		≤ 97 mA			
	ut power P <sub>o</sub>		≤ 322 mW			
Characteris			linear			
Internal in	ductance/capac	citance L <sub>i</sub> /C <sub>i</sub>	negligibly small			
		pacitance L <sub>o</sub> /C <sub>o</sub>				
Ex nL	IIC		IIB			
L <sub>o</sub> [mH]	5	0.5	10	1		
C <sub>0</sub> [μF]	0.51	1.2	2.9	5.8		
Ex approva	al acc. to confor	mity certificate	TÜV 08 ATEX	554818 X		
Application			II 3 G			
Protection type			Ex nA [nL] IIC/IIB T4			
Max. value	es:		Terminal con	Terminal connection: 3+4		
May autout valtaga II			< 12.2 V			

Max. outpu	it current l₀		≤ 97 mA	≤ 97 mA		
Max. outpu	it power P <sub>o</sub>		≤ 322 mW linear negligibly small			
Characteris	tic					
Internal inc	ductance/capacit	ance L <sub>i</sub> /C <sub>i</sub>				
External i	nductance/cap	acitance L <sub>o</sub> /C <sub>o</sub>				
Ex nL	IIC		IIB			
L <sub>o</sub> [mH]	5	0.5	10	1		
C <sub>o</sub> [μF]	0.51	1.2	2.9	5.8		
Declaration			SIL 2 acc. to EXIDA FMEDA			
Environm	ental Conditio	ns				
Ambient te	mperature		-25+70 °C			
Storage ter	nperature		-40+80°C			
Test voltag	e		2.5 kV			
MTTF			515 years acc. to SN 29500 (Ed. 99) 40 °C			
Mechanica	al data					
Electrical co	onnection		Spring terminal made of Beryllium- Bronze			
Terminal cross-section			1.5 mm <sup>2</sup>			
Housing ma	aterial		Polycarbor	Polycarbonate/ABS		
Mounting i	nstruction		for DIN rail	for DIN rail		
Protection	class		IP20	IP20		
Flammabili	ty class acc. to U	L 94	V-0	V-0		
Dimensions			18 x 112 x	110		

### oval | Certification

ATEX, IECEx, TR CU, NEPSI

≤ 13.3 V

Max.output voltage  $U_{\rm o}$