

Features

- ATEX, IECEx, UL, _CFM_{US}, CSA, TR CU, NEPSI, KOSHA, TIIS, CCOE
- Installation in zone 2
- 2 transistor outputs (MOSFET)
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wirebreak and short-circuit
- Complete galvanic isolation

The 1-channel isolating switching amplifier IM1-12EX-MT is equipped with an intrinsically safe input circuit.

Sensors according to EN 60947-5-6 (NA-MUR) or potential-free contact transmitters can be connected to the device.

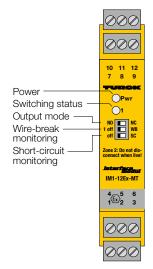
The output circuits feature two potential-free and parallel controlled MOSFET transistors for switching voltages of up to

250 VAC at a maximum frequency of 1 kHz

You can set each channel separately to work/closed current, i.e. NO/NC mode and duplicate signals via 3 switches on the front. The switching state of channel 1 is thereby transmitted to the outputs 1 and 2. You can also set the output mode separately for each channel.

You can also set the output mode separately for each channel.

The Pwr LED lights green to indicate operational readiness. The 2-color LED 1 lights yellow to indicate the switching status of the associated output. In the event of an input circuit error, the associated 2-color LED turns red, provided the input circuit monitoring function is activated. Thereupon the MOSFET outputs are blocked.



Туре				IM1-12E	X-MT				
ldent no.			7541228						
Power supply									
Nominal voltage					ıl voltage sup	ply unit			
Operating voltage	range			2012	5 VDC				
Operating voltage	range			2025	0 VAC				
Frequency				4070	Hz				
Power consumption	n			≤3 W					
Inputs									
No-load voltage				8.2 VDC					
Short-circuit curre	nt			8.2 mA					
Input resistance				1 kΩ					
Cable resistance				\leq 50 Ω					
Switch-on thresho	old			1.55 mA					
Switch-off thresh	old			1.75 mA					
Short-circuit thres	hold			\geq 6 mA					
Wire breakage thr	eshold			≤ 0.1 m	A				
Outputs									
Output circuits (di	gital)				FET (potentia	l-free, short-			
Switching voltage				circuit p < 250 V	AC/120 VDC				
Switching current		ut		≤ 90 m/					
Switching frequer		-		≤ 1000 Hz					
Approvals and d	eclarati	ons							
Ex approval acc. to			ate	TÜV 04 /	ATEX 2553				
Device designatio		,		Œ√ II (ia Da] III		Ex ia Ga] IIC; [Ex			
Max. values:				-	l connection:	1+4			
Max. output volta	ae U.			≤ 9.6 V					
Max. output curre				≤ 11 m/	4				
Max. output power				≤ 26 m\					
Rated voltage	0			250 V					
Characteristic				linear					
Internal inductand	e/capaci	tance L:/C:		L _i = 65 μH, C _i negligibly small					
External inducta			L _o /C _o	-, ,	, - 55	.,			
Ex ia IIC				IIB					
L ₀ [mH] 1		5	10	2	10	20			
$C_{o}[\mu F]$ 1.1		0.83	0.74	5.2	3.8	3.4			
-0 th: 1	conform	nity certific	ate	TÜV 06 /	ATEX 552968	X			
Ex approval acc. to				II 3 G					
					C 1 11 C (11 D T 4				
Ex approval acc. to				Ex nA [id	Gc] IIC/IIB T4	ł Gc			
Ex approval acc. to Application area					GC] IIC/IIB 14 I connection:				
Ex approval acc. to Application area Protection type	je U₀								
Ex approval acc. to Application area Protection type Max. values:	-			Termina	l connection:				
Ex approval acc. to Application area Protection type Max. values: Max.output voltag	nt I _o			Termina ≤ 9.6 V	l connection:				
Ex approval acc. to Application area Protection type Max. values: Max.output voltag Max. output curre	nt I _o			Termina $\leq 9.6 \text{ V}$ $\leq 11 \text{ m/s}$	l connection:				

External inductance/capacitance L_o/C_o

Ex ic	IIC			IIB			
L _o [mH]	1	5	10	1	5	10	
C ₀ [μF]	1.9	1.4	1.2	11	7.5	6.6	

Indication

Operational readiness green
Switching state yellow
Error indication red

Environmental Conditions

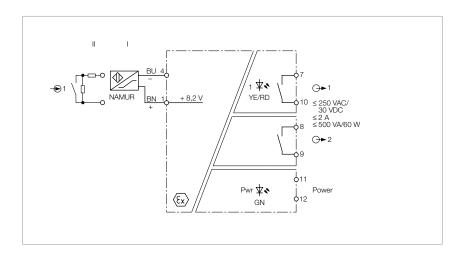
Ambient temperature -25...+70 °C Storage temperature -40...+80 °C Relative humidity ≤ 95 % Test voltage 2.5 kV

Mechanical data

Tightening torque	0.5 Nm
Electrical connection	4 x 3-pin removable terminal blocks, reverse polarity protected, screw connection
Terminal cross-section	$1 \times 2.5 \text{mm}^2 / 2 \times 1.5 \text{mm}^2$
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail / panel
Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	18 x 104 x 110 mm

Approval | Certification

ATEX, IECEx, UL, _cFM_{us}, CSA, TR CU, NEPSI, KOSHA, TIIS, CCOE



Features

- ATEX, IECEx, UL, _CFM_{US}, CSA, TR CU, NEPSI, KOSHA, TIIS, CCOE
- Installation in zone 2
- 2 relay outputs (NO)
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wirebreak and short-circuit
- Complete galvanic isolation

The 1-channel isolating switching amplifier IM1-12EX-R is equipped with an intrinsically safe input circuit.

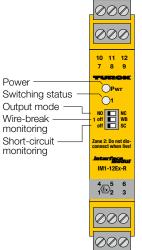
Sensors according to EN 60947-5-6 (NA-MUR) or potential-free contact transmitters can be connected to the device.

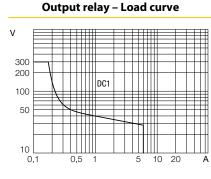
The output circuit features two relays, each with NO contact.

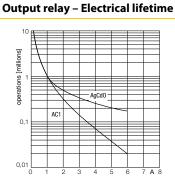
You can set each channel separately to work/closed current, i.e. NO/NC mode and duplicate signals via 3 switches on the front. The switching state of channel 1 is thereby transmitted to the outputs 1 and 2. You can also set the output mode separately for each channel.

You can also set the output mode separately for each channel.

The Pwr LED lights green to indicate operational readiness. The 2-color LED 1 lights yellow to indicate the switching status of the associated output. In the event of an input circuit error, the associated 2-color LED turns red, provided the input circuit monitoring function is activated. Thereupon the output relays drop out.







Type				IM1-12E	X-R		
ldent no.				7541226	i		
Power sup	plv						
Nominal vol	-			Universa	l voltage sup	plv unit	
Operating v	-	nge		2012			
Operating v	_	-		2025	O VAC		
Frequency	ortuge rui	9-		4070			
Power consi	umption			≤ 3 W			
Inputs							
No-load vol	tage			8.2 VDC			
Short-circuit	t current			8.2 mA			
Input resista	nce			1 kΩ			
Cable resista	ance			\leq 50 Ω			
Switch-on t	hreshold			1.55 mA			
Switch-off t	hreshold			1.75 mA			
Short-circuit	t threshol	ld		\geq 6 mA			
Wire breaka	ge thresh	nold		≤ 0.1 m/	A		
Outputs							
Output circu	its (digita	al)		2 x relay	s (NO)		
Switching fr	equency			≤ 10 Hz			
Relay switch	ning volta	age		≤ 250 V	AC/120 VDC		
Switching co	urrent pe	r output		\leq 2 A			
Switching ca	apacity po	er output		≤ 500 V	A/60 W		
Contact qua	lity			AgNi, 3μ	Au		
Approvals	and decl	larations					
Ex approval	acc. to co	onformity certi	ficate	TÜV 04 A	TEX 2553		
Device desig	Ination			Ѿ II (1 ia Da] III	I) G, II (1) D [C	Ex ia Ga] IIC	; [Ex
Max. values	:			Termina	connection:	1+4	
Max. output	voltage	U_{o}		≤ 9.6 V			
Max. output		-		≤ 11 mA	١		
Max. output	power P	0		≤ 26 mV	V		
Rated voltag	ge			250 V			
Characterist	ic			linear			
		capacitance L _i / c e/capacitanc		$L_i = 65 \mu$	ıH, C _i negligib	oly small	
	IIC	.c, capacitain		IIB			
Ex ia		5	10	2	10	20	
Ex ia L _o [mH]	1		0.74	5.2	3.8	3.4	
	1.1	0.83	0.7 7				
L _o [mH] C _o [μF]	1.1	0.83 onformity certi		TÜV 06 A	TEX 552968	X	
L _o [mH] C _o [μF] Ex approval	1.1 acc. to co			TÜV 06 A	TEX 552968	X	
L_0 [mH] C_0 [μ F] Ex approval Application	1.1 acc. to co area			II 3 G	TEX 552968		
L_o [mH] C_o [μ F] Ex approval Application Protection to	1.1 acc. to co area ype			II 3 G Ex nA nC		3 T4 Gc	
L_0 [mH] C_0 [μ F] Ex approval Application	1.1 acc. to co area ype :	onformity certi		II 3 G Ex nA nC	[ic Gc] IIC/IIB	3 T4 Gc	
L_o [mH] C_o [μ F] Ex approval Application Protection to Max. values Max.output	1.1 acc. to co area ype : voltage l	onformity certi		II 3 G Ex nA nC Termina	[ic Gc] IIC/IIB I connection:	3 T4 Gc	
L_o [mH] C_o [μ F] Ex approval Application Protection to Max. values Max. output Max. output	1.1 acc. to co area ype : voltage l	onformity certifully		II 3 G Ex nA nC Terminal ≤ 9.6 V	[ic Gc] IIC/IIB I connection:	3 T4 Gc	
L _o [mH] C _o [μF] Ex approval Application Protection to Max. values	1.1 acc. to co area ype : voltage l current l	onformity certifully		II 3 G Ex nA nC Terminal \leq 9.6 V \leq 11 mA	[ic Gc] IIC/IIB I connection:	3 T4 Gc	

External inductance/capacitance L_o/C_o

Ex ic	IIC			IIB			
L _o [mH]	1	5	10	1	5	10	
C _o [μF]	1.9	1.4	1.2	11	7.5	6.6	
Declaration	1			SIL 2 acc	. to EXIDA FM	EDA	

Indication

Operational readiness green
Switching state yellow
Error indication red

Environmental Conditions

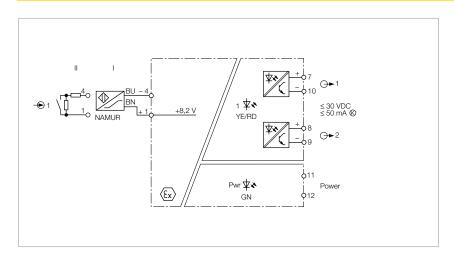
Ambient temperature	-25+70 ℃
Storage temperature	-40+80 °C
Relative humidity	≤ 95 %
Test voltage	2.5 kV
MTTF	272 years acc. to SN 29500 (Ed. 99) 40 °C

Mechanical data

lightening torque	0.5 Nm
Electrical connection	4 x 3-pin removable terminal blocks, reverse polarity protected, screw connection
Terminal cross-section	$1 \times 2.5 \text{ mm}^2 / 2 \times 1.5 \text{ mm}^2$
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail / panel
Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	18 x 104 x 110 mm

Approval | Certification

ATEX, IECEx, UL, _cFM_{us}, CSA, TR CU, NEPSI, KOSHA, TIIS, CCOE



Features

- ATEX, IECEx, UL, _CFM_{US}, CSA, TR CU, NEPSI, KOSHA, TIIS, CCOE
- Installation in zone 2
- 2 transistor outputs, short-circuit proof, potential-free and reverse-polarity protected
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wirebreak/short-circuit (ON/OFF switchable)
- Complete galvanic isolation

The 1-channel isolating switching amplifier IM1-12EX-T is equipped with an intrinsically safe input circuit.

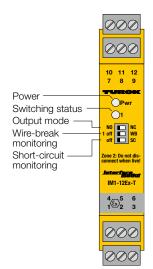
Sensors according to EN 60947-5-6 (NA-MUR) or potential-free contact transmitters can be connected to the device.

The output circuits feature 2 potential-free and short-circuit protected transistors.

You can set each channel separately to work/closed current, i.e. NO/NC mode and duplicate signals via 3 switches on the front. The switching state of channel 1 is thereby transmitted to the outputs 1 and 2. You can also set the output mode separately for each channel.

You can also set the output mode separately for each channel.

The Pwr LED lights green to indicate operational readiness. The 2-color LED 1 lights yellow to indicate the switching status of the associated output. In the event of an input circuit error, the associated 2-color LED turns red, provided the input circuit monitoring function is activated. Thereupon the output transistors are blocked.



Type				IM1-12E	X-T		External i	indu
ldent no.				7541227	7		Ex ic	II
							L _o [mH]	1
Power su				Universe	l valena ava	m.h	C ₀ [μF]	1.
Nominal v	-			2012	al voltage sup	piy unit	Declaration	n
	voltage ran voltage ran	-		2012				
Frequency	_	iye		4070			Indicatio	n
Power con				4070 ≤3 W	1112		Operational Switching Error indicates	state
Inputs							LITOI IIIUIC	ation
No-load vo	oltage			8.2 VDC			Environm	enta
Short-circu				8.2 mA			Ambient to	empe
Input resis				1 kΩ			Storage te	•
Cable resis				≤ 50 Ω			Relative h	•
Switch-on				1.55 mA			Test voltag	je
Switch-off				1.75 mA	ı		MTTF	
	uit threshol			≥ 6 mA				
Wire break	kage thresh	old		≤ 0.1 m	А			
Outputs							Mechanic	
-	cuits (digita	ıl)		2 x trans circuit p < 30 VD	roof)	al-free, short-	Tightening Electrical c	
_	current per	outnut		≤ 50 m/	-		Terminal c	rocc
_	frequency	output		≤ 5000	-		Housing m	
Voltage dr				≤ 3000 ≤ 2.5 V	112		Mounting	
voitage ui	υþ			≥ 2.3 V			Protection	
Approval	s and decl	arations					Flammabil	
		nformity certi	ficate	TÜV 04 /	ATEX 2553		Dimension	•
Device des					1) G, II (1) D [Ex ia Ga] IIC; [Ex	Approval	_
Max. value	es:			Termina	l connection:	1+4		-
Max. outp	ut voltage l	J_{o}		≤ 9.6 V				
Max. outp	ut current l	0		≤ 11 m/	A			
Max. outp	ut power P _o)		≤ 26 m\	N			
Rated volt	age			250 V				
Characteri				linear				
		apacitance L _i /	•	$L_i = 65 \mu$	ıH, C _i negligik	oly small		
External	inductanc	e/capacitan	ce L _o /C _o					
Ex ia	IIC			IIB				
L₀ [mH]	1	5	10	2	10	20		
C ₀ [μF]	1.1	0.83	0.74	5.2	3.8	3.4		
Ex approva	al acc. to co	nformity certi	ficate	TÜV 06 /	ATEX 552968	Χ		
Applicatio	n area			II3G				
Protection	type			Ex nA [id	: Gc] IIC/IIB T4	ł Gc		
Max. value	es:			Termina	l connection:	1+4		
Max.outpu	ıt voltage U	l _o		≤ 9.6 V				
Max. outp	ut current l	0		≤ 11 m/	A			
Max. outp	ut power P _c)		≤ 26 m\	N			
Characteri	stic			linear				
	d., et a a a a / e	anacitanco I	ır	1 - 65 :	ıH C nealiaik	dy cmall		

uctance/capacitance L₀/C₀

Ex ic	IIC			IIB		
L _o [mH]	1	5	10	1	5	10
C_o [μ F]	1.9	1.4	1.2	11	7.5	6.6
Declaration	1			SIL 2 acc	. to EXIDA FM	EDA

adiness green yellow red

tal Conditions

Ambient temperature	-25+70 °C
Storage temperature	-40+80 °C
Relative humidity	≤ 95 %
Test voltage	2.5 kV
MTTF	314 years acc. to SN 29500 (Ed. 99)
	40 °C

lata

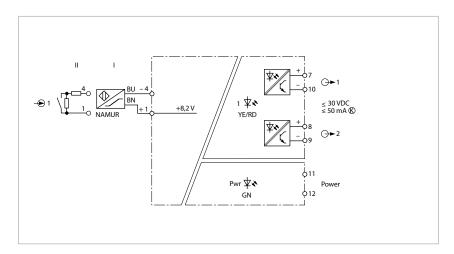
Tightening torque	0.5 Nm
Electrical connection	4 x 3-pin removable terminal blocks, reverse polarity protected, screw connection
Terminal cross-section	$1 \times 2.5 \text{ mm}^2 / 2 \times 1.5 \text{ mm}^2$
Housing material	Polycarbonate/ABS
Mounting instruction	for DIN rail / panel
Protection class	IP20
Flammability class acc. to UL 94	V-0
Dimensions	18 x 104 x 110 mm

ertification

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

 $L_i = 65 \mu H$, C_i negligibly small

Internal inductance/capacitance L_i/C_i



Features

- TR CU
- 2 transistor outputs, short-circuit proof, potential-free and reverse-polarity protected
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wirebreak and short-circuit
- Complete galvanic isolation

The isolating switching amplifier IM1-12-T is a 1-channel device.

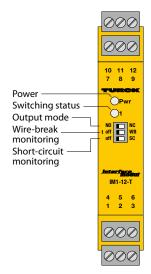
Sensors according to EN 60947-5-6 (NA-MUR) or potential-free contact transmitters can be connected to the device.

The output circuits feature 2 potential-free and short-circuit protected transistors.

You can set each channel separately to work/closed current, i.e. NO/NC mode and duplicate signals via 3 switches on the front. The switching state of channel 1 is thereby transmitted to the outputs 1 and 2. You can also set the output mode separately for each channel.

You can also set the output mode separately for each channel.

The Pwr LED lights green to indicate operational readiness. The 2-color LED 1 lights yellow to indicate the switching status of the associated output. In the event of an input circuit error, the associated 2-color LED turns red, provided the input circuit monitoring function is activated. Thereupon the output transistors are blocked.



Type IM1-12-T Ident no. 7541268

Power supply

Nominal voltage Universal voltage supply unit

Operating voltage range20...125 VDCOperating voltage range20...250 VACFrequency40...70 HzPower consumption $\leq 3 \text{ W}$

Inputs

No-load voltage 8.2 VDC Short-circuit current 8.2 mA Input resistance $1 \, k\Omega$ Cable resistance \leq 50 Ω Switch-on threshold 1.55 mA Switch-off threshold 1.75 mA Short-circuit threshold \geq 6 mA Wire breakage threshold ≤ 0.1 mA

Outputs

Output circuits (digital) 2 x transistor (potential-free, short-

circuit proof)

 $\begin{array}{lll} \text{Switching voltage} & \leq 30 \, \text{VDC} \\ \text{Switching current per output} & \leq 50 \, \text{mA} \\ \text{Switching frequency} & \leq 5000 \, \text{Hz} \\ \text{Voltage drop} & \leq 2.5 \, \text{V} \\ \end{array}$

Approvals and declarations

Declaration SIL 2 acc. to EXIDA FMEDA

Indication

Operational readiness green
Switching state yellow
Error indication red

Environmental Conditions

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

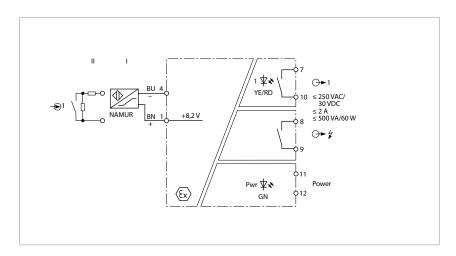
Terminal cross-section 1 x 2.5 mm² / 2 x 1.5 mm² Housing material Polycarbonate/ABS

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, _CFM_{US}, CSA, TR CU, NEPSI, KOSHA, TIIS, CCOE
- Installation in zone 2
- 2 relay outputs (NO)
- Output mode adjustable (NO/NC mode)
- Common alarm output
- Input circuits monitored for wirebreak/short-circuit (ON/OFF switchable)
- Complete galvanic isolation

The 1-channel isolating switching amplifier IM1-12EX-R is equipped with an intrinsically safe input circuit.

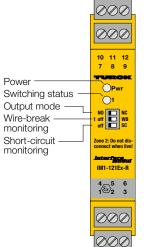
Sensors according to EN 60947-5-6 (NA-MUR) or potential-free contact transmitters can be connected to the device.

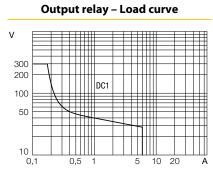
The output circuits feature two relays each with NO contact, one of which works as alarm output.

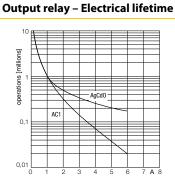
You can set each channel separately to work/closed current, i.e. NO/NC mode and duplicate signals via 3 switches on the front. The switching state of channel 1 is thereby transmitted to the outputs 1 and 2. You can also set the output mode separately for each channel.

You can also set the output mode separately for each channel.

The Pwr LED lights green to indicate operational readiness. The 2-color LED 1 lights yellow to indicate the switching status of the associated output. In the event of an input circuit error, the associated 2-color LED turns red, provided the input circuit monitoring function is activated. Thereupon the output and the alarm relay drop out.







Technical data

Type Ident no.				IM1-121EX-R 7541229					apacitance L _i e/ capacitan	$L_i = 65 \mu H$, C_i negligibly small			
				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Exic	IIC	-, tapatitai	IIB			
Power su	pply						L _o [mH]	1	5	10	1	5	10
Nominal v	oltage			Universa	l voltage sup	ply unit	ς, [μF]	1.9	1.4	1.2	11	7.5	6.6
Operating	voltage ran	ge		2012	5 VDC		Declaration					. to EXIDA FN	
Operating	voltage ran	ge		2025	0 VAC		Decidiation	l			SIL Z dCC	. LO EXIDA FIL	IEVA
Frequency				4070	Hz		Indication						
Power con	sumption			\leq 3 W			Operationa	=					
							Switching				green yellow		
Inputs							Error indica				red		
No-load vo	oltage			8.2 VDC			LITOI IIIUICO	ition			icu		
Short-circu	uit current			8.2 mA			Environm	antal Can	ditions				
Input resis	tance			1 kΩ			Ambient te				-25+	.70°C	
Cable resis	stance			\leq 50 Ω			Storage te	-	•		-40+		
Switch-on	threshold			1.55 mA			Relative hu				- 4 0+ ≤ 95 %	50 C	
Switch-off	threshold			1.75 mA			Test voltag	•			≥ 95 % 2.5 kV		
Short-circu	uit threshold			\geq 6 mA			MTTF	C			2.3 kV 272 years acc. to SN 29500 (Ed. 99)		
Wire break	cage thresho	old		≤ 0.1 m	A		MITE				40 °C		
Outputs							Mechanic	al data					
	cuits (digital)		2 x relay	s (NO)		Tightening	torque			0.5 Nm		
Switching				≤ 10 Hz			Electrical connection			4 x 3-pir	removable t	erminal blocks	
	ching voltag			≤ 250 VAC/120 VDC							polarity prote	cted, screw	
_	current per	-		\leq 2 A					_		connecti		
_	capacity per	output		≤ 500 V	00 VA/60 W Terminal cross-section Housing material					1 x 2.5 mm ² / 2 x 1.5 mm ² Polycarbonate/ABS			
Contact qu	ıality			AgNi, 3µ	AgNi, 3μ Au			Mounting instruction				ail / panel	
							Protection				IP20	ali / paliei	
	s and decla						Flammabil		r to III 04		V-0		
		formity certi	ficate		NTEX 2553		Dimension		L. 10 OL 34			x 110 mm	
Device des	ignation			(£x) (1) G, (1) D [Ex ia Ga] C; [Ex ia Da] C; [Ex									
Max. value	25:			Termina	l connection:	1+4	Approval	Certifica	tion				, CSA, TR CU,
Max. outpu	ut voltage U	0		≤ 9.6 V							NEPSI, K	OSHA, TIIS, C	COE
-	ut current I _o			≤ 11 m/	١								
	ut power P _o			≤ 26 m\	V								
Rated volta	age			250 V									
Characteris	stic			linear									
		pacitance L _i /	•	$L_i = 65 \mu$	ıH, C _i negligik	oly small							
External i	inductance	/capacitano	e L _o /C _o										
Ex ia	IIC			IIB									
L₀ [mH]	1	5	10	2	10	20							
C_o [μF]	1.1	0.83	0.74	5.2	3.8	3.4							
Ex approva	al acc. to con	formity certi	ficate	TÜV 06 A	TEX 552968	X							
Application	n area			II 3 G									
Protection	type			Ex nA nC	[ic Gc] IIC/IIE	3 T4 Gc							
Max. value	es:			Termina	l connection:	1+4							
Max.outpu	ut voltage U)		\leq 9.6 V									

 \leq 11 mA

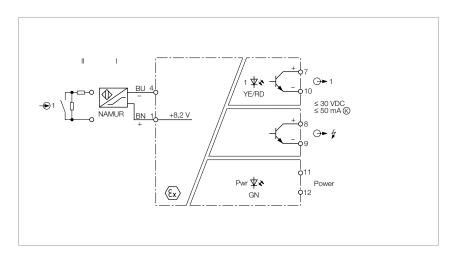
 \leq 26 mW

linear

Max. output current $I_{\rm o}$

Max. output power P_o

Characteristic



Features

- ATEX, IECEx, UL, _CFM_{US}, CSA, TR CU, NEPSI, KOSHA, TIIS, CCOE
- Installation in zone 2
- 2 transistor outputs, potential-free
- Common alarm output
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wirebreak/short-circuit (ON/OFF switchable)
- Complete galvanic isolation

The 1-channel isolating switching amplifier IM1-121EX-T is equipped with an intrinsically safe input circuit.

Sensors according to EN 60947-5-6 (NAMUR) or potential-free contact transmitters can be connected to the device.

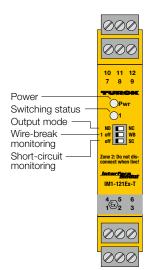
The output circuits feature two potential-free and short circuit protected transistors, one of which works as alarm output.

You can set each channel separately to work/closed current, i.e. NO/NC mode and duplicate signals via 3 switches on the front. The switching state of channel 1 is thereby transmitted to the outputs 1 and 2. You can also set the output mode separately for each channel.

You can also set the output mode separately for each channel.

The Pwr LED lights green to indicate operational readiness. The 2-color LED

1 lights yellow to indicate the switching status of the associated output. In the event of an input circuit error, the associated 2-color LED turns red, provided the input circuit monitoring function is activated. Thereupon the output and the alarm transistor are blocked.



Technical data

Туре				IM1-121			Internal inductance/capacitance L_i/C_i $L_i = 65 \mu H$, C_i negligibly small External inductance/capacitance L_0/C_0						bly small
ldent no.				7541230)				e/capacitan	ce L _o /C _o			
							Ex ic	IIC			IIB		
Power su							L₀ [mH]	1	5	10	1	5	10
Nominal vo	-				ıl voltage sup	pply unit	C _o [μF]	1.9	1.4	1.2	11	7.5	6.6
	voltage rang			2012			Declaration	1			SIL 2 acc. to EXIDA FMEDA		
-	voltage rang	ge		2025									
Frequency				4070	Hz		Indication	1					
Power con	sumption			≤ 3 W			Operationa	l readiness			green		
							Switching:				yellow		
Inputs							Error indica				red		
No-load vo	oltage			8.2 VDC									
Short-circu	uit current			8.2 mA			Environm	ental Con	ditions				
Input resis	tance			1 kΩ			Ambient te				-25+	-70 °C	
Cable resis	stance			\leq 50 Ω			Storage ter	-			-40+		
Switch-on	threshold			1.55 mA			Relative hu			≤ 95 %	00 C		
Switch-off	threshold			1.75 mA			Test voltag	•			≥ 75 70 2.5 kV		
Short-circu	uit threshold			\geq 6 mA			MTTF	C			2.5 KV 314 years acc. to SN 29500 (Ed. 99)		
Wire break	kage thresho	old		≤ 0.1 m	A		IVITI				40°C		
Outputs							Mechanic	al data					
Output circuits (digital)			2 x trans circuit p		ial-free, short-	Tightening				0.5 Nm			
Switching voltage			≤ 30 VD	C		Electrical c	onnection				polarity prote	terminal blocks	
Switching	current per	output		≤ 50 m/	١						connect		.cicu, scicw
Switching	frequency			≤ 5000	Hz		Terminal cross-section				1 x 2.5 r	nm ² / 2 x 1.5	mm ²
Voltage dr	ор			≤ 2.5 V			Housing m	aterial			Polycarbonate/ABS		
							Mounting i	nstruction			for DIN i	ail / panel	
Approvals	s and decla	rations					Protection	class			IP20		
Ex approva	al acc. to con	formity certi	ficate	TÜV 04 /	ATEX 2553		Flammabil	ity class ac	c. to UL 94		V-0		
Device des	ignation			(E) (1) G, (1) D [Ex ia Ga] C; [Ex ia Da] IC			Dimensions			18 x 104 x 110 mm			
Max. value	es:				l connection:	1+4	Approval	Certifica	tion		ΔTFX IF	CFv III FM	, CSA, TR CU,
	ut voltage U	0		≤ 9.6 V			ubbiosai	cerunica				OSHA, TIIS, C	
	ut current I			≤ 11 m/	١						, •	,,	
	ut power P _o			= · · · · · · · · · · · · · · · · · · ·									
Rated volta				250 V									
Characteris	-			linear									
		pacitance L _i /	C .		ıH, C _i negligil	bly small							
		/capacitanc	-	-1 03 1	, - 99	o., ou							
Ex ia	IIC		- 0 - 0	IIB									
L _o [mH]	1	5	10	2	10	20							
C _o [μF]	1.1	0.83	0.74	5.2	3.8	3.4							
Ex approva	al acc. to con	formity certi	ficate	TÜV 06 /	ATEX 552968	X							
Application	n area			II 3 G									
Protection	type			Ex nA [id	Gc] IIC/IIB T	4 Gc							
Max. value	es:			Termina	l connection:	1+4							
Max.outpu	ut voltage U _c)		≤ 9.6 V									
					•								

 \leq 11 mA

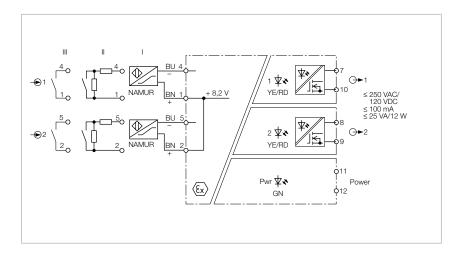
 \leq 26 mW

linear

Max. output current I_o

Max. output power P_o

Characteristic



Features

- ATEX, IECEx, UL, _CFM_{US}, CSA, TR CU, NEPSI, KOSHA, TIIS, CCOE
- Installation in zone 2
- 2 transistor outputs (MOSFET)
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wirebreak/short-circuit (ON/OFF switchable)
- Complete galvanic isolation

The 2-channel isolating switching amplifier IM1-22EX-MT is equipped with intrinsically safe input circuits.

Sensors according to EN 60947-5-6 (NA-MUR) or potential-free contact transmitters can be connected to the device.

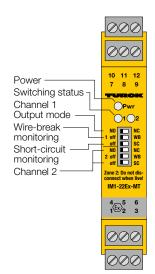
The output circuits feature two potential-free MOSFET transistors.

Six front panel switches are available to set the output mode separately for each channel (NO/NC mode), as well as to enable/disable wire-break (WB) and short-circuit (SC) monitoring separately.

You can also set the output mode separately for each channel.

The Pwr LED lights green to indicate operational readiness. The 2-color LEDs 1

and 2 light yellow to indicate the switching status of the associated output. In the event of an input circuit error, the 2-color LED associated to the affected input turns red, provided the input circuit monitoring function is activated. Thereupon the associated output transistor is blocked.



Туре	IM1-22EX-MT	Indication
ldent no.	7541213	Operational readiness
		Switching state
Power supply		Error indication
Nominal voltage	Universal voltage supply unit	
Operating voltage range	20125 VDC	Environmental Conditions
Operating voltage range	20250 VAC	Ambient temperature
Frequency	4070 Hz	Storage temperature
Power consumption	≤ 3 W	Relative humidity
		Test voltage
Inputs		
No-load voltage	8.2 VDC	Mechanical data
Short-circuit current	8.2 mA	Tightening torque
Input resistance	1 kΩ	Electrical connection
Cable resistance	≤ 50 Ω	
Switch-on threshold	1.55 mA	Terminal cross-section
requency ower consumption nputs o-load voltage hort-circuit current aput resistance able resistance witch-on threshold witch-off threshold hort-circuit threshold lire breakage threshold	1.75 mA	Terrimar cross section
Short-circuit threshold	\geq 6 mA	Housing material
Wire breakage threshold	≤ 0.1 mA	Mounting instruction Protection class
Outputs		Flammability class acc. to UL 94
Output circuits (digital)	2 x MOSFET (potential-free, short- circuit proof)	Dimensions
Switching voltage	≤ 250 VAC/120 VDC	Approval Certification
Switching current per output	≤ 100 mA	
Switching frequency	≤ 1000 Hz	

Approva	is and o	declarat	ions
---------	----------	----------	------

Ex approval acc. to conformity certificate TÜV 04 ATEX 2553

Device designation ⟨Ex⟩ II (1) G, II (1) D [Ex ia Ga] IIC; [Ex

ia Da] IIIC

Max. values: Terminal connection: 1+4/2+5

Max. output voltage Uo \leq 9.6 V Max. output current Io \leq 11 mA Max. output power Po \leq 26 mW 250 V Rated voltage Characteristic linear

Internal inductance/capacitance L_i/C_i $L_i = 65 \mu H$, C_i negligibly small

External inductance/capacitance $L_{\text{o}}/C_{\text{o}}$

Ex ia	IIC			IIB					
L _o [mH]	1	5	10	2	10	20			
C _o [μF]	1.1	0.83	0.74	5.2	3.8	3.4			

TÜV 06 ATEX 552968 X Ex approval acc. to conformity certificate

Application area II 3 G

Protection type Ex nA [ic Gc] IIC/IIB T4 Gc Max. values: Terminal connection: 1+4/2+5

Max.output voltage $U_{\rm o}$ \leq 9.6 V Max. output current I \leq 11 mA

Max. output power Po ≤ 26 mW Characteristic linear

Internal inductance/capacitance L_i/C_i $L_i = 65 \mu H$, C_i negligibly small

External inductance/capacitance $L_{\text{o}}/C_{\text{o}}$

Ex ic	IIC			IIB			
L _o [mH]	1	5	10	1	5	10	
C ₀ [μF]	1.9	1.4	1.2	11	7.5	6.6	

green
yellow
red

-25...+70 °C -40...+80 °C ≤ 95 % 2.5 kV

0.5 Nm

4 x 3-pin removable terminal blocks,

reverse polarity protected, screw

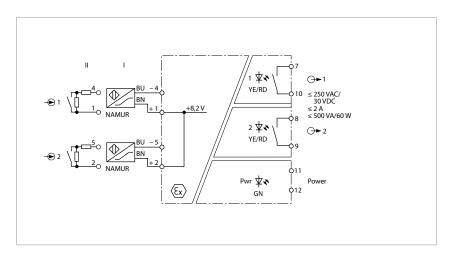
connection

 $1 \times 2.5 \, \text{mm}^2 / 2 \times 1.5 \, \text{mm}^2$ Polycarbonate/ABS for DIN rail / panel

IP20 V-0

18 x 104 x 110 mm

ATEX, IECEx, UL, $_{\rm c}$ FM $_{\rm us}$, CSA, TR CU, NEPSI, KOSHA, TIIS, CCOE



Features

- ATEX, IECEx, UL, _CFM_{US}, CSA, TR CU, NEPSI, KOSHA, TIIS, CCOE
- Installation in zone 2
- 2 relay outputs (NO)
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wirebreak/short-circuit (ON/OFF switchable)
- Complete galvanic isolation

The 2-channel isolating switching amplifier IM1-22EX-R is equipped with intrinsically safe input circuits.

Sensors according to EN 60947-5-6 (NA-MUR) or potential-free contact transmitters can be connected to the device.

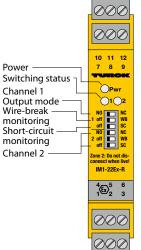
The output circuits have 2 relays, each with 1 NO contact.

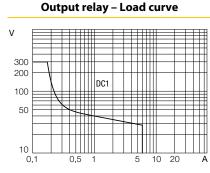
Six front panel switches are available to set the output mode separately for each channel (NO/NC mode), as well as to enable/disable wire-break (WB) and short-circuit (SC) monitoring separately.

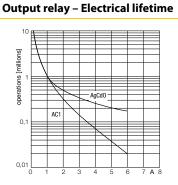
You can also set the output mode separately for each channel.

The Pwr LED lights green to indicate operational readiness. The 2-color LEDs 1

and 2 light yellow to indicate the switching status of the associated output. In the event of an input circuit error, the 2-color LED associated to the affected input turns red, provided the input circuit monitoring function is activated. Thereupon the output relay drops out.







Technical data

Type Ident no.				IM1-22E 7541231					apacitance L _i . e/capacitan	•	$L_i = 65 \mu$	ıH, C _i negligi	bly small
							Ex ic	IIC			IIB		
Power su							L _o [mH]	1	5	10	1	5	10
Nominal vo	-				l voltage sup	ply unit	C _o [μF]	1.9	1.4	1.2	11	7.5	6.6
Operating	voltage rang	je		2012	5 VDC		Declaration				SII 2 acc	to EXIDA FA	MFDA
Operating	voltage rang	je		2025	0 VAC		Decidiation				312 Z dec	(0 [/(//	
Frequency				4070	Hz		Indication	<u> </u>					
Power con	sumption			\leq 3 W			Operationa		1		green		
							Switching		•		yellow		
Inputs							Error indica				red		
No-load vo	oltage			8.2 VDC			LITOI IIIUICO	tion			icu		
Short-circu	iit current			8.2 mA			Environm	ontal Con	ditions				
Input resis	tance			1 kΩ			Ambient te				-25+	70 °C	
Cable resis	tance			\leq 50 Ω			Storage ter		:		-23+ -40+		
Switch-on	threshold			1.55 mA			Relative hu				-40+ ≤ 95 %	-00 C	
Switch-off	threshold			1.75 mA				•			≥ 93 % 2.5 kV		
Short-circu	it threshold			\geq 6 mA			Test voltag MTTF	e				re ace to CN "	00E00 (E4 00)
Wire break	age thresho	ld		≤ 0.1 m/	A		WILLE				40 °C	IS dCC. 10 SIN 2	29500 (Ed. 99)
Outputs							Mechanic	al data					
Output circuits (digital)			2 x relay	s (NO)		Tightening	torque			0.5 Nm			
Switching frequency			≤ 10 Hz			Electrical c	nnection			4 x 3-pir	n removable	terminal blocks,	
Relay switching voltage			≤ 250 V	AC/120 VDC							polarity prote	ected, screw	
Switching	current per o	output		\leq 2 A			.				connect		2
Switching	capacity per	output		≤ 500 V	A/60 W		Terminal cross-section			1 x 2.5 mm ² / 2 x 1.5 mm ² Polycarbonate/ABS			
Contact qu	ality			AgNi, 3μ	Au		Housing m				-		
							Mounting i					rail / panel	
Approvals	s and decla	rations					Protection				IP20		
Ex approva	al acc. to con	formity certif	icate	TÜV 04 A	TEX 2553		Flammabil		c. to UL 94		V-0		
Device des	ignation			€ II (1 ia Da] III		Ex ia Ga] IIC; [Ex	Dimension	5			18 x 104	k x 110 mm	
Max. value	es:			Termina	connection:	1+4/2+5	Approval	Certifica	tion				_s , CSA, TR CU,
Max. outpu	ut voltage U)		≤ 9.6 V							NEPSI, K	OSHA, TIIS, C	COE
Max. outpu	ut current I _o			≤ 11 m <i>A</i>	1								
Max. outpu	ut power P _o			≤ 26 mV	V								
Rated volta	age			250 V									
Characteris				linear									
Internal in	ductance/ca	pacitance L _i /(C_i	$L_{i} = 65 \mu$	ıH, C _i negligil	oly small							
		/capacitanc	-										
Ex ia	IIC			IIB									
L₀ [mH]	1	5	10	2	10	20							
C ₀ [μF]	1.1	0.83	0.74	5.2	3.8	3.4							
Ex approva	al acc. to con	formity certif	icate	TÜV 06 A	TEX 552968	X							
Application	n area			II3G									
Protection	type			Ex nA nC	[ic Gc] IIC/IIE	3 T4 Gc							
Max. value				Termina	connection:	1+4/2+5							
Max.outpu	ıt voltage U₀			≤ 9.6 V									

 \leq 11 mA

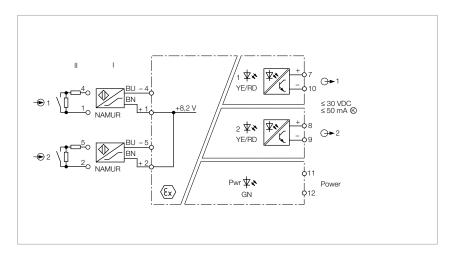
 \leq 26 mW

linear

Max. output current I_o

Max. output power P_o

Characteristic



Features

- ATEX, IECEx, UL, _CFM_{US}, CSA, TR CU, NEPSI, KOSHA, TIIS, CCOE
- Installation in zone 2
- 2 transistor outputs
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wirebreak/short-circuit (ON/OFF switchable)
- Complete galvanic isolation

The 2-channel isolating switching amplifier IM1-22EX-T is equipped with intrinsically safe input circuits.

Sensors according to EN 60947-5-6 (NA-MUR) or potential-free contact transmitters can be connected to the device.

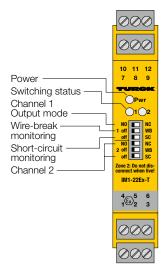
The output circuits feature 2 potential-free and short-circuit protected transistors.

Six front panel switches are available to set the output mode separately for each channel (NO/NC mode), as well as to enable/disable wire-break (WB) and short-circuit (SC) monitoring separately.

You can also set the output mode separately for each channel.

The Pwr LED lights green to indicate operational readiness. The 2-color LEDs 1 and 2 light yellow to indicate the switch-

ing status of the associated output. In the event of an input circuit error, the 2-color LED associated to the affected input turns red, provided the input circuit monitoring function is activated. Thereupon the associated output transistor is blocked.



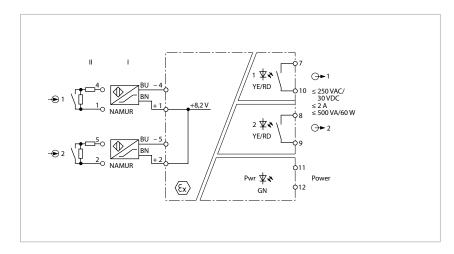
-		1 . 11			16								
Type Ident no.			IM1-22E 7541232			Internal inductance/capacitance L_i/C_i $L_i = 65 \mu H$, C_i negligibly small External inductance/capacitance L_o/C_o							
ident no.			/341232	2				e/capacitan	ce L _o /C _o				
Power supply						Exic	IIC			IIB			
Nominal voltage			Universa	al voltage sup	nnly unit	L ₀ [mH]	1	5	10	1	5	10	
Operating voltage	range		2012		pry unit	C ₀ [μF]	1.9	1.4	1.2	11 7.5 6.6			
Operating voltage	-		2025			Declaration	1			SIL 2 acc	. to EXIDA FM	IEDA	
Frequency	range		4070										
Power consumption	ın		±070 ≤3W	112		Indication	1						
r ower consumption	/II		≥ 2 W			Operationa	l readiness	;		green			
Inputs						Switching s	state			yellow			
No-load voltage			8.2 VDC			Error indica	ntion			red			
Short-circuit curre	nt		8.2 mA										
Input resistance	III.		0.2 IIIA 1 kΩ			Environmental Conditions							
Cable resistance			≤ 50 Ω			Ambient te	mperature	<u> </u>		-25+	-70 °C		
Switch-on thresho	ı		≤ 30 Ω 1.55 mA			Storage ter	nperature			-40+	-80 °C		
Switch-off thresho			1.75 mA			Relative hu	ımidity			≤ 95 %			
Short-circuit thresh				ı		Test voltag	e			2.5 kV			
Wire breakage thr			≥ 6 mA	٨		MTTF 314 years acc. to SN						9500 (Ed.	
wire breakage thr	esnoia		≤ 0.1 m	А						40 °C			
Outputs						Mechanic	al data						
Output circuits (digital)					ial-free, short-	Tightening	torque			0.5 Nm			
Switching voltage	Switching voltage			roof)		Electrical co	onnection				removable t		
Switching current			≤ 30 VD ≤ 50 m/								polarity prote	cted, screv	
Switching frequen			≤ 5000			Terminal cr	rocc coction	n		connecti	on 1m² / 2 x 1.5 ı	mm ²	
Voltage drop	cy		≤ 3000 112 ≤ 2.5 V			Housing ma		ı ı		Polycarbonate/ABS			
voitage urop			≥ 2.3 V	≤ 2.3 V			nstruction		for DIN rail / panel				
Approvals and d	oclarations					Protection				IP20	ali / palici		
Ex approval acc. to		ificato	TÜV OA /	ATEX 2553				c to III 04		V-0			
Device designation	•	incate			[Ev.ia Cal C. Ev	Flammability class acc. to UL 94 Dimensions				v-u 18 x 104 x 110 mm			
Device designation	ı		ia Da] III		[Ex ia Ga] IIC; [Ex	Dillicision)			10 X 104	X I IV IIIIII		
Max. values:			Termina	l connection:	1+4/2+5	Approval	Certifica	tion		ATEX, IE	CEx, UL, FM _u ,	, CSA, TR C	
Max. output voltag	ge $U_{\scriptscriptstyle{0}}$		\leq 9.6 V							NEPSI, K	OSHA, TIIS, C	COE	
Max. output curre	nt I _o		≤ 11 m/	A									
Max. output powe	r P _o		≤ 26 m\	N									
Rated voltage			250 V										
Characteristic			linear										
Internal inductanc	e/capacitance L _i /	/C _i	$L_i = 65 \mu$	ıH, C _i negligil	bly small								
External inducta	nce/capacitan	ce L _o /C _o											
Ex ia IIC			IIB										
L₀ [mH] 1	5	10	2	10	20								
C ₀ [μF] 1.1	0.83	0.74	5.2	3.8	3.4								
Ex approval acc. to	conformity certi	ificate	TÜV 06 A	ATEX 552968	Χ								
Application area			II 3 G										
Protection type			Ex nA [ic	: Gc] IIC/IIB T	4 Gc								
Max. values:			Termina	l connection:	1+4/2+5								
Max.output voltag	e U _o		≤ 9.6 V										
Max. output currer			≤ 11 m/	Ą									
			26.1										

 \leq 26 mW

linear

Max. output power P_o

Characteristic



Features

- ATEX, IECEx, UL, _CFM_{US}, CSA, TR CU, KOSHA, CCOE
- Installation in zone 2
- 2 relay outputs (NO)
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wirebreak/short-circuit (ON/OFF switchable)
- Test voltage 4.0 kV
- Complete galvanic isolation

The 2-channel isolating switching amplifier IM1-22EX-R/K51 is equipped with intrinsically safe input circuits.

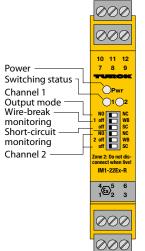
Sensors according to EN 60947-5-6 (NA-MUR) or potential-free contact transmitters can be connected to the device.

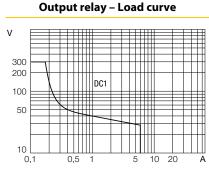
The output circuits have 2 relays, each with 1 NO contact.

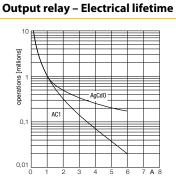
You can set each channel separately to work/closed current, i.e. NO/NC mode and duplicate signals via 3 switches on the front. The switching state of channel 1 is thereby transmitted to the outputs 1 and 2. You can also set the output mode separately for each channel.

The Pwr LED lights green to indicate operational readiness. The 2-color LEDs 1 and 2 light yellow to indicate the switch-

ing status of the associated output. In the event of an input circuit error, the 2-color LED associated to the affected input turns red, provided the input circuit monitoring function is activated. Thereupon the output relay drops out.







Туре	IM1-22EX-R/K51
ldent no.	7541238
Power supply	
Nominal voltage	Universal voltage supply unit
Operating voltage range	20125 VDC
Operating voltage range	20250 VAC
Frequency	4070 Hz
Power consumption	≤ 3 W
Inputs	
No-load voltage	8.2 VDC
Short-circuit current	8.2 mA
Input resistance	1 kΩ
Cable resistance	≤ 50 Ω
Switch-on threshold	1.55 mA
Switch-off threshold	1.75 mA
Short-circuit threshold	\geq 6 mA
Wire breakage threshold	≤ 0.1 mA
Outputs	
Output circuits (digital)	2 x relays (NO)
Switching frequency	≤ 10 Hz
Relay switching voltage	≤ 250 VAC/120 VDC
Switching current per output	≤ 2 A
Switching capacity per output	\leq 500 VA/60 W
Contact quality	AgNi, 3μ Au

 $\label{eq:conformity} \textbf{Ex approval acc. to conformity certificate}$

Device designation

TÜV 04 ATEX 2553

ia Da] IIIC

Max. values: Terminal connection: 1+4/2+5

 $\begin{array}{ll} \text{Max. output voltage U}_0 & \leq 9.6 \text{ V} \\ \text{Max. output current I}_0 & \leq 11 \text{ mA} \\ \text{Max. output power P}_0 & \leq 26 \text{ mW} \\ \text{Characteristic} & \text{linear} \end{array}$

Internal inductance/capacitance L_i/C_i $L_i = 65 \mu H$, C_i negligibly small

External inductance/capacitance L_o/C_o

Ex ia	IIC			IIB			
L₀ [mH]	1	5	10	2	10	20	
C ₀ [μF]	1.1	0.83	0.74	5.2	3.8	3.4	

Ex approval acc. to conformity certificate TÜV 06 ATEX 552968 X

Application area II 3 G

Protection type Ex nA nC [ic Gc] IIC/IIB T4 Gc

Max. values Terminal connection: 1+4/2+5

 $\label{eq:max_output} \begin{array}{ll} \text{Max. output voltage } U_o & \leq 9.6 \text{ V} \\ \text{Max. output current } I_o & \leq 11 \text{ mA} \\ \text{Max. output power P}_o & \leq 26 \text{ mW} \\ \text{Characteristic} & \text{linear} \end{array}$

Internal inductance/capacitance L_i/C_i $L_i = 65 \mu H$, C_i negligibly small

External inductance/capacitance L₀/C₀

Ex ic	IIC			IIB			
L _o [mH]	1	5	10	1	5	10	
C ₀ [μF]	1.9	1.4	1.2	11	7.5	6.6	

		п

Operational readiness green
Switching state yellow
Error indication red

Environmental Conditions

Ambient temperature -25...+70 °C

Storage temperature -40...+80 °C

Relative humidity ≤ 95 %

Test voltage 4.0 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

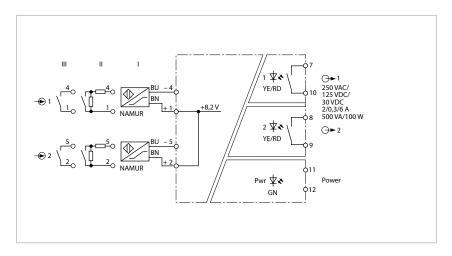
Protection class IP20
Flammability class acc. to UL 94 V-0

Dimensions 18 x 104 x 110 mm

Approval | Certification

ATEX, IECEx, UL, $_{\rm c}$ FM $_{\rm us}$, CSA, TR CU,

NEPSI, KOSHA, CCOE



Features

- TR CU
- 2 relay outputs (NO)
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wirebreak/short-circuit (ON/OFF switchable)
- Complete galvanic isolation

The isolating switching amplifier IM1-22-R is a 2-channel device.

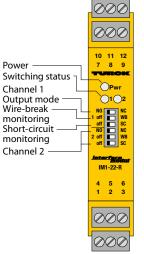
Sensors according to EN 60947-5-6 (NA-MUR) or potential-free contact transmitters can be connected to the device.

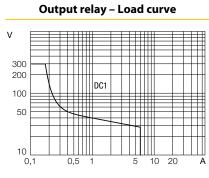
The output circuits have 2 relays, each with 1 NO contact.

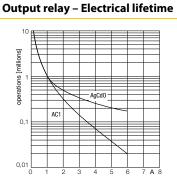
Six front panel switches are available to set the output mode separately for each channel (NO/NC mode), as well as to enable/disable wire-break (WB) and short-circuit (SC) monitoring separately.

The Pwr LED lights green to indicate operational readiness. The 2-color LEDs 1 and 2 light yellow to indicate the switching status of the associated output. In the

event of an input circuit error, the 2-color LED associated to the affected input turns red, provided the input circuit monitoring function is activated. Thereupon the output relay drops out.







Type IM1-22-R Approval | Certification TR CU

Power supply

Nominal voltage Universal voltage supply unit

Operating voltage range20...125 VDCOperating voltage range20...250 VACFrequency40...70 HzPower consumption $\leq 3 \text{ W}$

Inputs

No-load voltage 8.2 VDC Short-circuit current 8.2 mA Input resistance $1 \, k\Omega$ Cable resistance \leq 50 Ω Switch-on threshold 1.55 mA Switch-off threshold 1.75 mA Short-circuit threshold \geq 6 mA Wire breakage threshold ≤ 0.1 mA

Outputs

Output circuits (digital) $2 \times \text{relays}$ (NO) Switching frequency $\leq 10 \text{ Hz}$

Relay switching voltage ≤ 250 VAC/120 VDC

 $\begin{array}{lll} \text{Switching current per output} & \leq 2 \text{ A} \\ \text{Switching capacity per output} & \leq 500 \text{ VA/60 W} \\ \text{Contact quality} & \text{AgNi, 3} \mu \text{ Au} \\ \end{array}$

Approvals and declarations

Declaration SIL 2 acc. to EXIDA FMEDA

Indication

Operational readiness green
Switching state yellow
Error indication red

Environmental Conditions

Ambient temperature $-25...+70\,^{\circ}\text{C}$ Storage temperature $-40...+80\,^{\circ}\text{C}$ Relative humidity $\leq 95\,\%$ Test voltage $2.5\,\text{kV}$

MTTF 272 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,

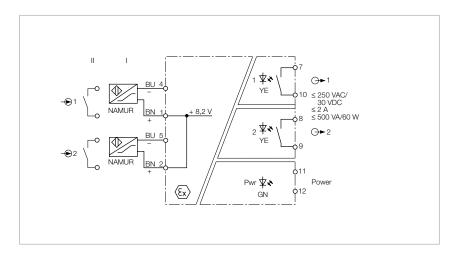
reverse polarity protected, screw

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



Features

- ATEX, IECEx, UL, CFMUS, CSA, TR CU, NEPSI, KOSHA, TIIS, CCOE
- Installation in zone 2
- 2 relay outputs (NO)
- Output mode adjustable (NO/NC mode)
- Duplicating of signals possible
- Complete galvanic isolation

The 2-channel isolating switching amplifier IM12-22EX-R is equipped with intrinsically safe input circuits.

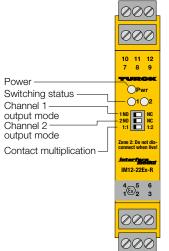
Sensors according to EN 60947-5-6 (NA-MUR) or potential-free contact transmitters can be connected to the device.

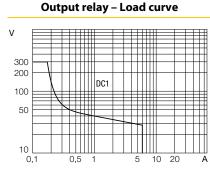
The output circuits have 2 relays, each with 1 NO contact.

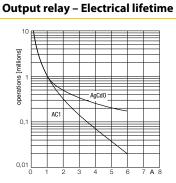
You can set each channel separately to work/closed current, i.e. NO/NC mode and duplicate signals via 3 switches on the front. The switching state of channel 1 is thereby transmitted to the outputs 1 and 2. You can also set the output mode separately for each channel.

You can also set the output mode separately for each channel.

The Pwr LED lights green to indicate operational readiness. LED 1 lights yellow to indicate the switching status of the output.







Туре	IM12-22EX-R	Indication	
Ident no.	7541233	Operational readiness	green
		Switching state	yellow
Power supply		Error indication	red
Nominal voltage	Universal voltage supply unit		
Operating voltage range	20125 VDC	Environmental Conditions	
Operating voltage range	20250 VAC	Ambient temperature	-25+70 °C
Frequency	4070 Hz	Storage temperature	-40+80 °C
Power consumption	≤ 3 W	Relative humidity	≤ 95 %
		Test voltage	2.5 kV
Inputs			
No-load voltage	8.2 VDC	Mechanical data	
Short-circuit current	8.2 mA	Tightening torque	0.5 Nm
Input resistance	1 kΩ	Electrical connection	4 x 3-pin removable terminal blocks,
Cable resistance	≤ 50 Ω		reverse polarity protected, screw
Switch-on threshold	1.55 mA	Terminal cross-section	connection 1 x 2.5 mm ² / 2 x 1.5 mm ²
Switch-off threshold	1.75 mA		, =
		Housing material	Polycarbonate/ABS
Outputs		 Mounting instruction Protection class 	for DIN rail / panel IP20
Output circuits (digital)	2 x relays (NO)		
Switching frequency	≤ 10 Hz	Flammability class acc. to UL 94	V-0
Relay switching voltage	≤ 250 VAC/120 VDC	Dimensions	18 x 104 x 110 mm
Switching current per output	≤ 2 A	Ammuoval Contification	ATEV IFCE, III FAA CCA TD CII
Switching capacity per output	\leq 500 VA/60 W	Approval Certification	ATEX, IECEx, UL, _c FM _{us} , CSA, TR CU, NEPSI, KOSHA, TIIS, CCOE
Contact quality	AgNi, 3μ Au		HEI SI, NOSIIN, 1113, CCCE

Approvals and declarations

Ex approval acc. to conformity certificate

TÜV 04 ATEX 2553

Device designation

 $\mbox{\fontfamily{\fontfamil}{\fontfamily{\fontfamil}{\fontfamil$

ia Da] IIIC

Max. values:

Characteristic

Terminal connection: 1+4/2+5

Max. output voltage \mathbf{U}_{o} Max. output current \mathbf{I}_{o} Max. output power \mathbf{P}_{o} Rated voltage \leq 9.6 V \leq 11 mA \leq 26 mW

250 V linear

Internal inductance/capacitance L_i/C_i

 $L_i = 65 \mu H$, C_i negligibly small

External inductance/capacitance L_o/C_o

Ex ia	IIC			IIB			
L _o [mH]	1	5	10	2	10	20	
C ₀ [μF]	1.1	0.83	0.74	5.2	3.8	3.4	

Ex approval acc. to conformity certificate TÜV 06 ATEX 552968 X

Application area II 3 G

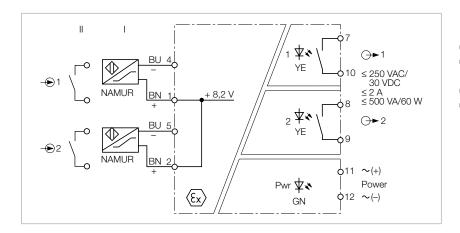
Protection type Ex nA nC [ic Gc] IIC/IIB T4 Gc
Max. values: Terminal connection: 1+4/2+5

 $\label{eq:max_output} \begin{array}{ll} \text{Max. output voltage } U_o & \leq 9.6 \text{ V} \\ \text{Max. output current } I_o & \leq 11 \text{ mA} \\ \text{Max. output power P}_o & \leq 26 \text{ mW} \\ \text{Characteristic} & \text{linear} \end{array}$

Internal inductance/capacitance L_i/C_i $L_i = 65~\mu\text{H}, C_i$ negligibly small

External inductance/capacitance L_o/C_o

Ex ic	IIC			IIB			
L₀ [mH]	1	5	10	1	5	10	
C ₀ [μF]	1.9	1.4	1.2	11	7.5	6.6	



Features

- ATEX, TR CU
- Output mode adjustable (NO/NC mode)
- Duplicating of signals possible
- Complete galvanic isolation

The 2-channel isolating switching amplifier IM12-22EX-R/230VAC is equipped with intrinsically safe input circuits.

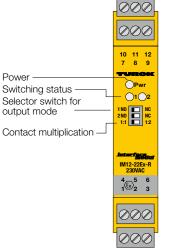
Sensors according to EN 60947-5-6 (NA-MUR) or potential-free contact transmitters can be connected to the device.

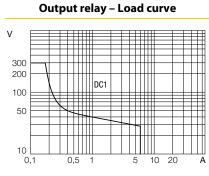
The output circuits have 2 relays, each with 1 NO contact.

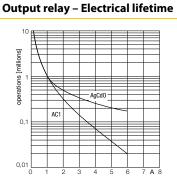
You can set each channel separately to work/closed current, i.e. NO/NC mode and duplicate signals via 3 switches on the front. The switching state of channel 1 is thereby transmitted to the outputs 1 and 2. You can also set the output mode separately for each channel.

You can also set the output mode separately for each channel.

The Pwr LED lights green to indicate operational readiness. LED 1 lights yellow to indicate the switching status of the output.







Туре	IM12-22EX-R/230VAC
ldent no.	7505641
Power supply	
Nominal voltage	230 VAC
Operating voltage range	196253 VAC
Frequency	4862 Hz
Power consumption	≤7VA
Inputs	
No-load voltage	8.2 VDC
Short-circuit current	8.2 mA
Input resistance	1 kΩ
Cable resistance	≤ 50 Ω
Switch-on threshold	1.55 mA

Outputs

Switch-off threshold

Output circuits (digital) $2 \times \text{relays}$ (NO) Switching frequency $\leq 10 \text{ Hz}$

Relay switching voltage ≤ 250 VAC/120 VDC

 $\begin{aligned} & \text{Switching current per output} & \leq 2 \text{ A} \\ & \text{Switching capacity per output} & \leq 500 \text{ VA/60 W} \\ & \text{Contact quality} & \text{AgNi, 3} \mu \text{ Au} \end{aligned}$

Approvals and declarations

Ex approval acc. to conformity certificate PTB 00 ATEX 2033

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

ia Da] IIIC

1.75 mA

Max. values: Terminal connection: 1...6

 $\begin{array}{ll} \text{Max. output voltage U}_o & \leq 9.6 \text{ V} \\ \text{Max. output current I}_o & \leq 21.4 \text{ mA} \\ \text{Max. output power P}_o & \leq 26 \text{ mW} \\ \text{Rated voltage} & 250 \text{ V} \\ \text{Characteristic} & \text{linear} \end{array}$

External inductance/capacitance L_o/C_o

Ex ia	IIC		IIIC	
L _o [mH]	1	5	1	5
C _o [μF] (2 terminals)	1.1	0.84	6.2	4.4
C _o [μF] (3 terminals or more)	1.1	0.8	6.2	4.3

Indication

Operational readiness green
Switching state yellow
Error indication red

Environmental Conditions

 $\begin{array}{lll} \mbox{Ambient temperature} & -25 \ldots +60 \ \mbox{°C} \\ \mbox{Storage temperature} & -40 \ldots +80 \ \mbox{°C} \\ \mbox{Relative humidity} & \leq 95 \ \mbox{\%} \\ \mbox{Test voltage} & 2.5 \ \mbox{kV} \\ \end{array}$

Mechanical data

Tightening torque 0.5 Nm

 ${\it Electrical connection} \qquad \qquad 4\,x\,3-pin\,removable\,terminal\,blocks,$

reverse polarity protected, screw

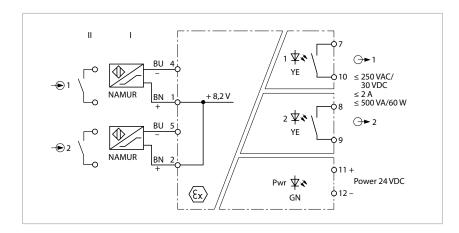
connection

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 ATEX, TR CU



Features

- ATEX, _CFM_{US}, TR CU
- Output mode adjustable (NO/NC mode)
- Duplicating of signals possible
- Complete galvanic isolation

The 2-channel isolating switching amplifier IM12-22EX-R/24VDC is equipped with intrinsically safe input circuits.

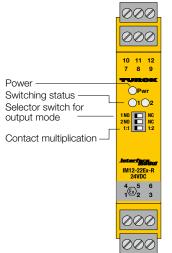
Sensors according to EN 60947-5-6 (NA-MUR) or potential-free contact transmitters can be connected to the device.

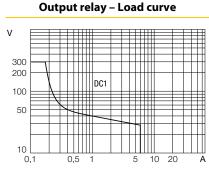
The output circuits have 2 relays, each with 1 NO contact.

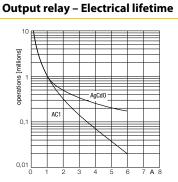
You can set each channel separately to work/closed current, i.e. NO/NC mode and duplicate signals via 3 switches on the front. The switching state of channel 1 is thereby transmitted to the outputs 1 and 2. You can also set the output mode separately for each channel.

You can also set the output mode separately for each channel.

The Pwr LED lights green to indicate operational readiness. LED 1 lights yellow to indicate the switching status of the output.







Туре	IM12-22EX-R/24VDC
ldent no.	7505640
Power supply	
Nominal voltage	24 VDC
Operating voltage range	1030 VDC
Power consumption	≤ 1.5 W
Inputs	
No-load voltage	8.2 VDC
Short-circuit current	8.2 mA
Input resistance	1 kΩ
Cable resistance	≤ 50 Ω
Switch-on threshold:	1.55 mA
Switch-off threshold:	1.75 mA

Outputs

 $\begin{array}{ll} \mbox{Output circuits (digital)} & 2 \mbox{ x relays (NO)} \\ \mbox{Switching frequency} & \leq 10 \mbox{ Hz} \end{array}$

Relay switching voltage ≤ 250 VAC/120 VDC

 $\begin{array}{ll} \text{Switching current per output} & \leq 2 \text{ A} \\ \\ \text{Switching capacity per output} & \leq 500 \text{ VA/60 W} \\ \\ \text{Contact quality} & \text{AgNi, 3} \mu \text{ Au} \\ \end{array}$

Approvals and declarations

Ex approval acc. to conformity certificate

PTB 00 ATEX 2033

Device designation

ia Da] IIIC

Max. values: Terminal connection: 1...6

 $\begin{array}{ll} \text{Max. output voltage U}_{\text{o}} & \leq 9.6 \text{ V} \\ \text{Max. output current I}_{\text{o}} & \leq 21.4 \text{ mA} \\ \text{Max. output power P}_{\text{o}} & \leq 26 \text{ mW} \\ \text{Rated voltage} & 250 \text{ V} \\ \text{Characteristic} & \text{linear} \end{array}$

 $Internal\ inductance/capacitance\ L_i/C_i \qquad \qquad C_i\ negligibly\ small,\ L_i\ negligibly\ small$

External inductance/capacitance L_o/C_o

Ex ia	IIC		IIIC		
L _o [mH]	1	5	1	5	
C _o [μF] (2 terminals)	1.1	0.84	6.2	4.4	
C _o [μF] (3 terminals or more)	1.1	0.8	6.2	4.3	

Indication

Operational readiness green
Switching state yellow
Error indication red

Environmental Conditions

Ambient temperature $-25...+60\,^{\circ}\text{C}$ Storage temperature $-40...+80\,^{\circ}\text{C}$ Relative humidity $\leq 95\,\%$ Test voltage $2.5\,\text{kV}$

Mechanical data

Tightening torque 0.5 Nm

Electrical connection 4 x 3-pin removable terminal blocks,

reverse polarity protected, screw

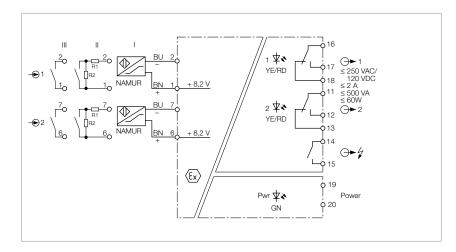
connection

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 ATEX, $_{c}FM_{us}$, TR CU



Features

- ATEX, IECEx, TR CU, INMETRO
- Installation in zone 2
- 2 relay outputs (changeover)
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wirebreak/short-circuit (ON/OFF switchable)
- Common alarm output
- Complete galvanic isolation

The 2-channel isolating switching amplifier IM1-231EX-R is equipped with intrinsically safe input circuits.

Sensors according to EN 60947-5-6 (NA-MUR) or potential-free contact transmitters can be connected to the device.

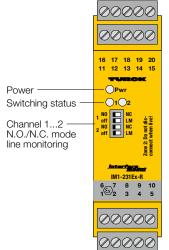
The output circuits each have a relay with a changeover contact. In addition, the device features a common alarm output.

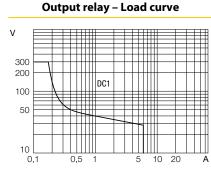
Four front panel switches are available to set the output mode separately for each channel (NO or NC mode), as well as to enable/disable line monitoring (LM).

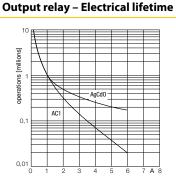
You can also set the output mode separately for each channel.

The Pwr LED lights green to indicate operational readiness. The 2-color LED lights yellow to indicate the switching status of the associated output. In the event of an input circuit error, the 2-color

LED turns red, provided the input circuit monitoring function is activated. Thereupon the output and the alarm relay drop out.







Type				IM1-231EX-R				
ldent no.				7541239				
Power supp	plv							
Nominal vol				Universal	voltage supp	lv unit		
Operating vo	-			20125		.,		
	Dperating voltage range			20250	VAC			
Frequency				4070 H				
	Power consumption			≤3 W	-			
Inputs No-load volt	ane			8.2 VDC				
Short-circuit	-			8.2 mA				
Input resista				1 kΩ				
Cable resista				- KΩ ≤ 50 Ω				
Switch-on th				≥ 30 Ω 1.55 mA				
Switch-off th				1.75 mA				
Short-circuit				1.75 mA ≥ 6 mA				
Wire breaka				≥ 6 mA ≤ 0.1 mA				
Wife breaking	ge tillesilola			⊒ v. 11m/				
Outputs								
Output circu	-			2 x relay (change-over)				
Switching fr				≤ 10 Hz				
Relay switch	-			≤ 250 VAC/120 VDC				
Switching cu				≤2A				
Switching ca		utput		≤ 500 VA/60 W				
Contact qual	lity			AgNi, 3μ Au				
Approvals a	and declara	tions						
Ex approval	acc. to confo	rmity certific	ate	TÜV 04 ATEX 2604				
Device desig	nation			⟨ II (1) G, II (1) D [Ex ia Ga] IIC; [Ex ia Da] IIIC				
Max. output	voltage U₀			≤ 11.3 V				
Max. output	current I _o			≤ 13 mA				
Max. output	power P _o			\leq 36 mW				
Rated voltag	je			250 V				
Characteristi	ic			linear				
Internal indu	uctance/capa	citance L _i /C _i		$L_i = 100 \mu$	$H, C_i = 1.1 \text{ n}$	=		
External in	ductance/c	apacitance	Lo/Co					
Exia	IIC			IIB				
L _o [mH]	1.0	5.0	10	2.0	10.0	20.0		
C _o [μF]	0.84	0.62	0.55	4.0	2.8	2.5		
Ex approval acc. to conformity certificate				TÜV 06 AT	TÜV 06 ATEX 552967 X			
Application				II 3 G				
Protection type			Ex nA nC [ic Gc] IIC T4					
Max. values:			Terminal connection: 1+2 / 47 / 9+10					
Max.output voltage U_{o}				≤ 11.3 V				
Max. output current I _o				\leq 13 mÅ				
Max. output	power P _o			≤ 36 mW				
Characteristi	ic			linear				

External inductance/capacitance L_o/C_o

Ex ic	c IIC			IIC	IIC		
L₀ [mH]	10	5.0	1	20	10.0	2	
C ₀ [μF]	0.91	1.0	1.5	4.3	4.9	6.8	

Indication

Operational readiness green
Switching state yellow
Error indication red

Environmental Conditions

Ambient temperature $-25...+70\,^{\circ}\text{C}$ Storage temperature $-40...+80\,^{\circ}\text{C}$ Relative humidity $\leq 95\,\%$ 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

erminal cross-section 1 x 2.5 mm² / 2 x 1.5 mm² ousing material Polycarbonate/ABS lounting instruction for DIN rail / panel

tection class IP20 mmability class acc. to UL 94 V-0

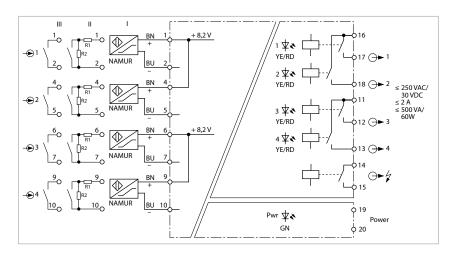
imensions 27 x 104 x 110 mm

Approval | Certification

ATEX, IECEx, TR CU, INMETRO

 $L_i = 100 \mu H; C_i = 1.1 nF$

Internal inductance/capacitance L_i/C_i



Features

- TR CU
- 5 relay outputs (NO)
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wirebreak/short-circuit (ON/OFF switchable)
- Common alarm output
- Complete galvanic isolation

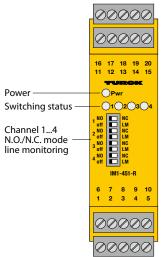
Sensors according to EN 60947-5-6 (NA-MUR) or potential-free contact makers can be connected to the 4-channel isolating transducer IM1-451-R.

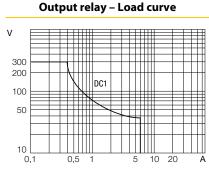
The output circuits each feature a relay with NO contact. In addition, the device features a common alarm output.

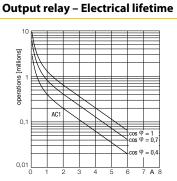
The output mode (NO/NC) can be set separately for each channel and wire-

break (WB) and short-circuit (SC) can be switched on/off via the eight switches on the front.

When using mechanical contacts, wirebreak and short-circuit monitoring must be switched off or the contacts must be wired with resistors (II) (see circuit diagram). The Pwr LED lights green to indicate operational readiness. The 2-color LED 1 lights yellow to indicate the switching status of the associated output. In the event of an input circuit error, the associated 2-color LED turns red, provided the input circuit monitoring function is activated. Thereupon the output and the alarm relay drop out.







Type IM1-451-R Ident no. 7541190

Power supply

Nominal voltage Universal voltage supply unit

 $\begin{array}{lll} \mbox{Operating voltage range} & 20...250 \mbox{ VDC} \\ \mbox{Operating voltage range} & 20...250 \mbox{ VAC} \\ \mbox{Frequency} & 40...70 \mbox{ Hz} \\ \mbox{Power consumption} & \leq 3 \mbox{ W} \\ \end{array}$

Inputs

No-load voltage 8.2 VDC Short-circuit current 8.2 mA Input resistance $1 \, k\Omega$ Cable resistance \leq 50 Ω Switch-on threshold: 1.55 mA Switch-off threshold: 1.75 mA Short-circuit threshold \geq 6 mA Wire breakage threshold ≤ 0.1 mA

Outputs

Output circuits (digital) $5 \times \text{relays}$ (NO) Switching frequency $\leq 10 \text{ Hz}$

Relay switching voltage ≤ 250 VAC/120 VDC

Switching current per output ≤ 2 A

Switching capacity per output \leq 750 VA/60 W Contact quality AgNi, 3 μ Au

Indication

Operational readiness green
Switching state yellow
Error indication red

Environmental Conditions

Ambient temperature -25...+70 °C Storage temperature -40...+80 °C Relative humidity ≤ 95 % 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

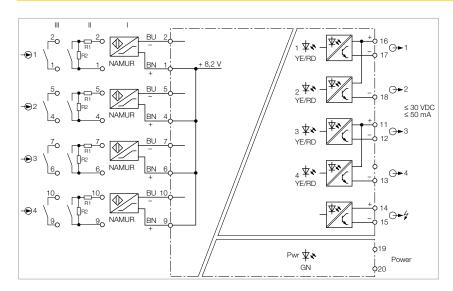
Terminal cross-section 1 x 2.5 mm² / 2 x 1.5 mm² Housing material Polycarbonate/ABS

Mounting instruction for DIN rail / panel

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

Dimensions 27 x 104 x 110 mm

Approval | Certification TR CU



Features

- TR CU
- 5 transistor outputs, short-circuit proof, potential-free and reverse-polarity protected
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wirebreak/short-circuit (ON/OFF switchable)
- Common alarm output
- Complete galvanic isolation

Sensors according to EN 60947-5-6 (NAMUR) or potential-free contact makers can be connected to the 4-channel isolating transducer IM1-451-T.

The output circuits each feature a potential-free and short-circuit proof transistor and the device also has a common alarm output.

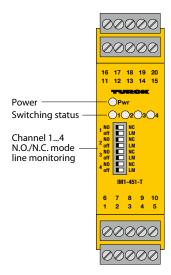
The output mode (NO/NC) can be set separately for each channel and wire-

break (WB) and short-circuit (SC) can be switched on/off via the eight switches on the front

When using mechanical contacts, wirebreak and short-circuit monitoring must be switched off or the contacts must be wired with resistors (II) (see circuit diagram).

The Pwr LED lights green to indicate operational readiness. The 2-color LED

1 lights yellow to indicate the switching status of the associated output. In the event of an input circuit error, the associated 2-color LED turns red, provided the input circuit monitoring function is activated. Thereupon the output and the alarm transistor are blocked.



Type IM1-451-T Ident no. 7520721

Power supply

Nominal voltage Universal voltage supply unit

 $\begin{array}{lll} \mbox{Operating voltage range} & 20...250 \mbox{ VDC} \\ \mbox{Operating voltage range} & 20...250 \mbox{ VAC} \\ \mbox{Frequency} & 40...70 \mbox{ Hz} \\ \mbox{Power consumption} & \leq 3 \mbox{ W} \\ \end{array}$

Inputs

No-load voltage 8.2 VDC Short-circuit current 8.2 mA Input resistance $1 \, k\Omega$ Cable resistance \leq 50 Ω Switch-on threshold: 1.55 mA Switch-off threshold: 1.75 mA Short-circuit threshold \geq 6 mA Wire breakage threshold ≤ 0.1 mA

Outputs

Output circuits (digital) 5 x transistor (potential-free, short-

circuit proof)

 $\begin{array}{lll} \text{Switching voltage} & \leq 30 \, \text{VDC} \\ \text{Switching current per output} & \leq 50 \, \text{mA} \\ \text{Switching frequency} & \leq 5000 \, \text{Hz} \\ \text{Voltage drop} & \leq 2.5 \, \text{V} \\ \end{array}$

Indication

Operational readiness green
Switching state yellow
Error indication red

Environmental Conditions

Ambient temperature $-25...+70\,^{\circ}\text{C}$ Storage temperature $-40...+80\,^{\circ}\text{C}$ Relative humidity $\leq 95\,\%$ 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

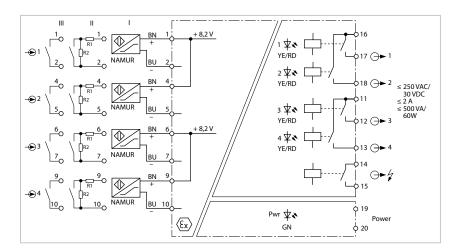
connection

Terminal cross-section 1 x 2.5 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 27 x 104 x 110 mm

Approval | Certification TR CU



Features

- ATEX, IECEx, UL, _CFM_{US}, CSA, TR CU, IN-METRO, TIIS
- Installation in zone 2
- 5 relay outputs (NO)
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wirebreak/short-circuit (ON/OFF switchable)
- Common alarm output
- Complete galvanic isolation

The 4-channel isolating switching amplifier IM1-451EX-R is equipped with intrinsically safe input circuits.

Sensors according to EN 60947-5-6 (NA-MUR) or potential-free contact transmitters can be connected to the device.

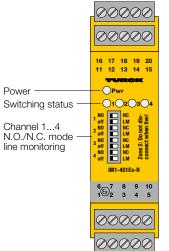
The output circuits each feature a relay with NO contact. In addition, the device features a common alarm output.

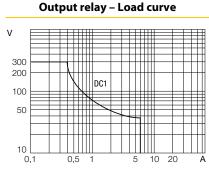
Six front panel switches are available to set the output mode separately for each channel (NO/NC mode), as well as to enable/disable wire-break (WB) and short-circuit (SC) monitoring separately.

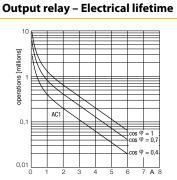
You can also set the output mode separately for each channel.

The Pwr LED lights green to indicate operational readiness. The 2-color LED 1 lights yellow to indicate the switching

status of the associated output. In the event of an input circuit error, the associated 2-color LED turns red, provided the input circuit monitoring function is activated. Thereupon the output and the alarm relay drop out.







Туре				IM1-451EX-R			
ldent no.				7541188			
Daway cum	m.lv.						
Power sup				Huissanaal		l	
Nominal vol	-			20125	voltage supp	iy unit	
	oltage range			20250			
-	oltage range			4070 H			
Frequency	umntion		40/0 n ≤3 W	IZ			
Power cons	umption		≥ 3 W				
Inputs							
No-load vol	tage			8.2 VDC			
Short-circui	t current			8.2 mA			
Input resista	ance			1 kΩ			
Cable resista	ance			\leq 50 Ω			
Switch-on t	hreshold:			1.55 mA			
Switch-off t	hreshold:			1.75 mA			
Short-circui	t threshold			\geq 6 mA			
Wire breaka	ge threshold			≤ 0.1 mA			
Outputs							
Output circu	its (digital)			5 x relays (NO)			
Switching fr	equency			≤ 10 Hz			
Relay switch	ning voltage			≤ 250 VAC/120 VDC			
Switching c	urrent per ou	tput		≤2A			
Switching ca	apacity per o	utput		≤ 750 VA/60 W			
Contact qua	lity			AgNi, 3μ Au			
Approvals	and declara	ntions					
		rmity certific	ate	TÜV 04 ATEX 2604			
Device desig		,					
Max. values	:			Terminal connection: 1+2/47/9+10			
Max. output	t voltage U₀			≤ 11.3 V			
Max. output	current l _o			\leq 13 mA			
Max. output	t power P _o			\leq 36 mW			
Rated voltag	ge			250 V			
Characterist	ic			linear			
Internal ind	uctance/capa	acitance L _i /C _i	$L_i = 100 \mu$	$H, C_i = 1.1 \text{ nl}$	F		
External in	ductance/o	apacitance	Lo/Co				
Exia	IIC	_		IIB			
L _o [mH]	1.0	5.0	10	2.0	10.0	20.0	
C _o [μF]	0.84	0.62	0.55	4.0	2.8	2.5	
Application				II 3 G			
Protection type				Ex nA nC [ic Gc] IIC T4			
Max. values:				Terminal connection: $1+2/47/9+10$			
Max.output	voltage U_{o}		≤ 11.3 V				

Max. outpu	it power P _o			≤ 36 mW				
Characteris	tic			linear				
Internal inc	ductance/ca	pacitance L _i /	'C _i	$L_i = 100$	$\mu H; C_i = 1.1 \text{ n}$	F		
External i	nductance	/capacitan	ce L _o /C _o					
Ex ic	IIC			IIC				
L _o [mH]	10	5.0	1	20	10.0	2		
C_o [μ F]	0.91	1.0	1.5	4.3	4.9	6.8		
Indication	1							
Operationa	l readiness			green				
Switching s	state			yellow				
Error indication				red				
Environm	ental Cond	ditions						
Ambient te	mperature			-25+70 °C				
Storage ter	nperature			-40+80 °C				
Relative hu	midity			≤ 95 %				
Test voltag	e			2.5 kV				
Mechanic	al 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			Polycarb	onate/ABS				
Mounting instruction			for DIN rail / panel					
Protection	class			IP20				
Flammabili	Flammability class acc. to UL 94				V-0			

Approval | Certification

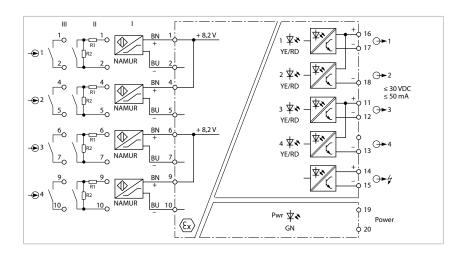
Dimensions

ATEX, IECEx, UL, _cFM_{us}, CSA, TR CU, INMETRO, TIIS

27 x 104 x 110 mm

 \leq 13 mA

Max. output current I_o



The 4-channel isolating switching amplifier IM1-451EX-T is equipped with intrinsically safe input circuits.

Sensors according to EN 60947-5-6 (NA-MUR) or potential-free contact transmitters can be connected to the device.

The output circuits each feature a potential-free and short-circuit proof transistor and the device also has a common alarm output.

Six front panel switches are available to set the output mode separately for each channel (NO/NC mode), as well as to enable/disable wire-break (WB) and short-circuit (SC) monitoring separately.

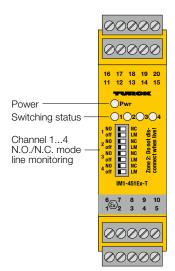
You can also set the output mode separately for each channel.

The Pwr LED lights green to indicate operational readiness. The 2-color LED 1 lights yellow to indicate the switching status of the associated output. In the

Features

- ATEX, IECEx, UL, _CFM_{US}, CSA, TR CU, IN-METRO, TIIS
- Installation in zone 2
- 5 transistor outputs, short-circuit proof, potential-free and reverse-polarity protected
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wirebreak/short-circuit (ON/OFF switchable)
- Common alarm output
- Complete galvanic isolation

event of an input circuit error, the associated 2-color LED turns red, provided the input circuit monitoring function is activated. Thereupon the output and the alarm transistor are blocked.



Туре	IM1-451EX-T		
ldent no.	7541189		
Power supply			
Nominal voltage	Universal voltage supply unit		
Operating voltage range	20125 VDC		
Operating voltage range	20250 VAC		
Frequency	4070 Hz		
Power consumption	≤ 3 W		
Inputs			
No-load voltage	8.2 VDC		
Short-circuit current	8.2 mA		
Input resistance	1 kΩ		
Cable resistance	≤ 50 Ω		
Switch-on threshold:	1.55 mA		
Switch-off threshold:	1.75 mA		
Short-circuit threshold	\geq 6 mA		
Wire breakage threshold	≤ 0.1 mA		
Outputs			
Output circuits (digital)	5 x transistor (potential-free, short- circuit proof)		
Switching voltage	≤ 30 VDC		
Switching current per output	≤ 50 mA		
Switching frequency	≤ 5000 Hz		
Voltage drop	≤ 2.5 V		
Approvals and declarations			
Ex approval acc. to conformity certificate	TÜV 04 ATEX 2604		
Device designation	II (1) G, II (1) D [Ex ia Ga] IIC; [E ia Da] IIIC;		
Max. values:	Terminal connection: $1+2/47/9+10$		
Max. output voltage $U_{\scriptscriptstyle 0}$	≤ 11.3 V		
Max. output current $I_{ m o}$	\leq 13 mA		
Max. output power P _o	≤ 36 mW		
Rated voltage	250 V		
Characteristic	linear		

External inductance/capacitance Lo/Co

Internal inductance/capacitance L_i/C_i

Ex ia	IIC			IIB			
L _o [mH]	1.0	5.0	10	2.0	10.0	20.0	
C。[uF]	0.84	0.62	0.55	4.0	2.8	2.5	

Ex approval acc. to conformity certificate TÜV 06 ATEX 552967 X

Application area II 3 G

Protection type Ex nA [ic Gc] IIC T4

Max. values: Terminal connection: 1+2/4...7/

9+10 < 11 3

 $L_i = 100 \mu H, C_i = 1.1 nF$

 $\begin{aligned} & \text{Max.output voltage U}_0 & & \leq 11.3 \text{ V} \\ & \text{Max. output current I}_0 & & \leq 13 \text{ mA} \\ & \text{Max. output power P}_0 & & \leq 36 \text{ mW} \\ & \text{Characteristic} & & \text{linear} \end{aligned}$

External inductance/capacitance L_o/C_o

Ex ic	IIC			IIB			
L _o [mH]	10	5.0	1	20	10.0	2	
C ₀ [μF]	0.91	1.0	1.5	4.3	4.9	6.8	

Indication

Operational readiness green
Switching state yellow
Error indication red

Environmental Conditions

Ambient temperature -25...+70 °C Storage temperature -40...+80 °C Relative humidity ≤ 95 % 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

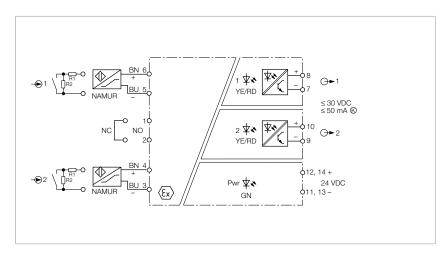
Terminal cross-section 1 x 2.5 mm² / 2 x 1.5 mm²
Housing material Polycarbonate/ABS
Mounting instruction for DIN rail / panel

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

Dimensions 27 x 104 x 110 mm

Approval | Certification

ATEX, IECEx, UL, $_{\rm c}{\rm FM}_{\rm us}$, CSA, TR CU, INMETRO, TIIS



Features

- ATEX, IECEx, TR CU, NEPSI
- Installation in zone 2
- Isolating switching amplifier, 2-channel
- Transistor outputs
- Input circuit monitoring of wire-break/ short-circuit
- Galvanic isolation of input circuits, output circuits and supply voltage

The 2-channel isolating switching amplifier IME-DI-22EX-T/24VDC is equipped with intrinsically safe input circuits. Sensors according to EN 60947-5-6 (NAMUR) or potential-free contact transmitters can be connected to the device.

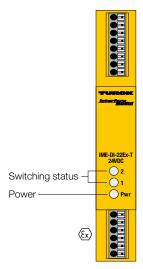
The output circuits each feature a potential-free transistor output. You can toggle between working or closed current, resp. NO or NC mode via a wire jumper.

When using mechanical contacts, the contacts must be wired with resistors (II) because of wire-break and short-circuit monitoring (see circuit diagram). For this, use the resistor module WM1, ident no. 0912101.

The Pwr LED lights green to indicate operational readiness.

The 2-color LEDs 1 and 2 light yellow to indicate the switching status of the asso-

ciated output. In the event of an input circuit error, the 2-color LED associated to the affected input turns red. Thereupon the associated output transistor is blocked.



Technical data

rec	nnıca	aata							
Туре			IME-DI-22EX-	T/24VDC	Max. outpu	ıt current l _o		\leq 10 mA	
ldent no.			7541197		Max. output power P_{o}		≤ 24 mW		
					Characteris	tic		linear	
Power su	pply				Internal inc	ductance/capa	citance L _i /C _i	$L_i = 150 \mu H$, C_i = negligibly small
Nominal vo	oltage		24 VDC		External i	nductance/ca	pacitance L₀/C₀		
Operating	voltage range		2030 VDC		Ex nL	IIC		IIB	
Power con	sumption		≤ 1.5 W		L _o [mH]	5	0.85	10	0.85
					C _o [μF]	1.4	1.9	6.6	11
Inputs No-load vo	oltago		8.2 VDC		Declaration	ı		SIL 2 acc. to	EXIDA FMEDA
Short-circu	_		8.2 MA						
Input resis			0.2 IIIA 1 kΩ		Indication	1			
Cable resis			i κΩ ≤ 50 Ω		Operationa	l readiness		green	
					Switching :	state		yellow	
Switch-on	tnresnoia: fthreshold:		1.55 mA		Error indica	ntion		red	
	uit threshold		1.75 mA						
	kage threshold		≥ 6 mA ≤ 0.1 mA		Environm	ental Conditi	ons		
wire break	kage tillesliold		≤ U.TIIIA		Ambient te	mperature		-25+70	°C
0					Storage ter	nperature		-40+80	°C
Outputs			2 4	/	Test voltag	e		2.5 kV	
Output circ	cuits (digital)		circuit proof)	(potential-free, short-	MTTF				cc. to SN 29500 (Ed. 99)
Switching	voltage		≤ 30 VDC					40 °C	
Switching	current per outp	ut	\leq 100 mA		Mechanic	-1 -1-4-			
Switching	frequency		≤ 3000 Hz		Electrical co			Caring torm	inal made of Popullium
Voltage dr	rop		≤ 2.5 V			oss-section		Bronze 1.5 mm ²	inal made of Beryllium-
Approvals	s and declarati	ons			Housing m			Polycarbona	ato/ARS
	al acc. to conform		TÜV 07 ATEX	553234	Mounting i			for DIN rail	מוני/ אטט
Device des		,	⟨Ex⟩ (1) GD	[Ex ia] IIC/IIB	Protection			IP20	
Max. value	-			nection: 3+4 / 5+6		ity class acc. to	III Q/I	V-0	
Max. outpu	ut voltage Uo		≤ 9.6 V		Dimension	•	OL)4	18 x 112 x 1	10 mm
	ut current l₀		≤ 10 mA		Diffiction	,		10 % 112 % 1	10 111111
	ut power Po		≤ 24 mW		Annroval	Certification	1	ATEX IFCEV	, TR CU, NEPSI
Rated volta			250 V		Арріочаі	Certification	•	ATLA, ILCLA	, IN CO, NEI SI
Characteris	-		linear						
Internal in	ductance/capaci	tance L _i /C _i	$L_i = 150 \mu H$, ($\mathcal{L}_{i} = \text{negligibly small}$					
External i	inductance/cap	oacitance L _o /C _o							
Ex ia	IIC		IIB						
L₀ [mH]	10	0.85	20	1.85	•				
C_o [μF]	0.75	1.1	3.4	5.3					
	ut voltage U₀		≤ 9.6 V						
Max. outp	ut current l _o		\leq 10 mA						
Max. outpu	ut power P _o		\leq 24 mW						
Characteris	stic		linear						
Internal in	ductance/capaci	tance L _i /C _i	$L_i = 150 \mu H_i$	\mathcal{L}_{i} = negligibly small					
External i	inductance/cap	oacitance L _o /C _o							
Ex nL	IIC		IIB						
L₀ [mH]	5	0.85	10	0.85	-				
C ₀ [μF]	1.4	1.9	6.6	11					
Ex approva	al acc. to conform	nity certificate	TÜV 07 ATEX	554299 X					
Application		•	II 3 G						
n				IIC/IID TA					

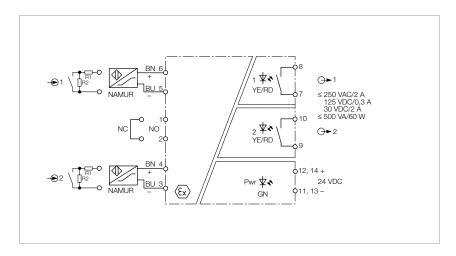
Protection type Max. values:

Max.output voltage U_{o}

Ex nA nC [nL] IIC/IIB T4

≤ 9.6 V

Terminal connection: 3+4/5+6



Features

- ATEX, IECEx, TR CU, NEPSI
- Installation in zone 2
- Isolating switching amplifier, 2-channel
- Relay output
- Input circuit monitoring of wire-break/ short-circuit
- Galvanic isolation of input circuits, output circuits and supply voltage

The 2-channel isolating switching amplifier IME-DI-22EX-R/24VDC is equipped with intrinsically safe input circuits. Sensors according to EN 60947-5-6 (NAMUR) or potential-free contact transmitters can be connected to the device.

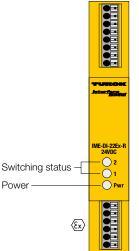
The output circuits each feature a relay with NO contact. You can toggle between working or closed current, resp.

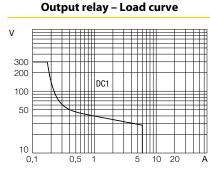
NO or NC mode for both channels via a wire jumper.

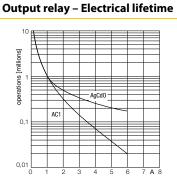
When using mechanical contacts, the contacts must be wired with resistors (II) because of wire-break and short-circuit monitoring (see circuit diagram). For this, use the resistor module WM1, ident no. 092101.

The Pwr LED lights green to indicate operational readiness.

The 2-color LEDs 1 and 2 light yellow to indicate the switching status of the associated output. In the event of an input circuit error, the 2-color LED associated to the affected input turns red, provided the input circuit monitoring function is activated. Thereupon the output relay drops out.

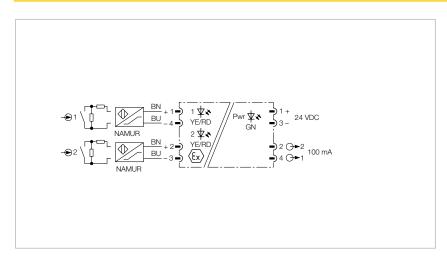






Type			IME-DI-22E	c-R/24VDC		
ldent no.			7541191			
Power su	anly					
Nominal vo			24 VDC			
	voltage range		24 VDC 2030 VD	ſ		
Power cons			2030 VD ≤ 1.7 W	C		
rower cons	sumption		≤ 1.7 W			
Inputs						
No-load vo	ltage		8.2 VDC			
Short-circu	it current		8.2 mA			
Input resist	tance		1 kΩ			
Cable resist			\leq 50 Ω			
Switch-on	threshold:		1.55 mA			
Switch-off			1.75 mA			
	it threshold		\geq 6 mA			
Wire break	age threshold		≤ 0.1 mA			
Outputs						
Output circ	uits (digital)		2 x relays (N	0)		
Switching 1	frequency		≤ 10 Hz			
Relay swite	thing voltage		≤ 250 VAC/	120 VDC		
Switching	current per out	put	≤ 2 A			
Switching	capacity per ou	tput	\leq 500 VA/60 W			
Contact qu	ality		AgNi, 3μ Au			
A 1 -		•				
	and declarat	mity certificate	TÜV 07 ATE	(553.73./1		
Device desi		mity certificate				
Max. value	-		Terminal connection: 3+4/5+6			
	s. ıt voltage U₀		≤ 9.6 V			
	it current l		≤ 9.0 v ≤ 10 mA			
	it power P _o		≤ 24 mW			
Rated volta			250 V			
Characteris	-		linear			
	ductance/capac	ritanco I /C	$L_i = 150 \mu\text{H}, C_i = \text{negligibly small}$			
	-	pacitance L _o /C _o	L _i — 130 μ11	, c _i — negligibly silial		
Ex ia	IIC		IIB			
L _o [mH]	10	0.85	20	1.85		
C _o [μF]	0.75	1.1	3.4	5.3		
Max. outpu	ıt voltage Uo		≤ 9.6 V			
-	it current I _o		≤ 10 mA			
-	ıt power P _o		≤ 24 mW			
Characteris			linear			
Internal inductance/capacitance L _i /C _i			$L_i = 150 \mu\text{H}$, C _i = negligibly smal		
	-	pacitance L _o /C _o		, , , ,		
Ex nL	IIC		IIB			
L _o [mH]	5	0.85	10	0.85		
C ₀ [μF]	1.4	1.9	6.6 11			
Ex approva	l acc. to confor	mity certificate	TÜV 07 ATE	(554299 X		
Application	n area		II 3 G			
Protection	type		Ex nA nC [nl	_] IIC/IIB T4		

Max.output	voltage U₀		≤ 9.6 V		
Max. output	current I _o		≤ 10 mA		
Max. output	power P _o		\leq 24 mW		
Characterist	ic		linear		
Internal indu	uctance/capad	citance L _i /C _i	$L_i = 150 \mu H$	$C_i = negligibly small$	
External in	ductance/ca	pacitance L _o /C _o			
Ex nL	IIC		IIB		
L _o [mH]	5	0.85	10	0.85	
C _o [μF]	1.4	1.9	6.6	11	
Declaration			SIL 2 acc. to	EXIDA FMEDA	
Indication					
Operational	readiness		green		
Switching st	ate		yellow		
Error indicat	ion		red		
Environme	ntal Conditi	ons			
Ambient ten	nperature		-25+70°	°C	
Storage tem	perature		-40+80°C		
Test voltage			2.5 kV		
MTTF			235 years acc. to SN 29500 (Ed. 99 40 °C		
Mechanica	l 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 1	10 mm	



Features

- ATEX, IECEx, TR CU
- Installation in zone 2/22
- Isolating switching amplifier with M12 x 1 connectors, 2-channel
- Line monitored for wire-break/shortcircuit (ON/OFF switchable)
- PNP transistor output NO
- Complete galvanic isolation
- Protection class IP67

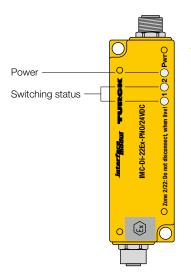
The 2-channel isolating switching amplifier IMC-Di-22Ex-PNO/24VDC is equipped with intrinsically safe input circuits.

Sensors according to EN 60947-5-6 (NA-MUR), variable resistors or potential free

contactors can be connected to the device.

The output circuits feature two NO transistors. A green LED indicates operational readiness.

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).



Pin assignment male M12

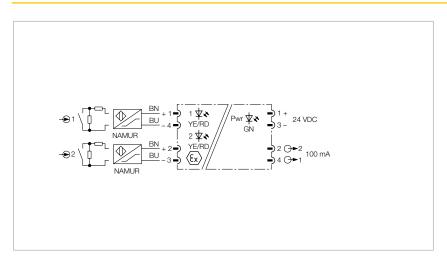


Pin assignment female M12 (intrinsically safe end)



Type			IMC-Di-22Ex-PNO/24VDC			
ldent no.			7560003			
Power sup						
Nominal vo	ltage		24 VDC			
Operating v	oltage range		2030 VDC			
Inputs						
No-load vol	ltage		8.2 VDC			
Short-circui	it current		8.2 mA			
Input resist	ance		1 kΩ			
Cable resist	ance		\leq 50 Ω			
Switch-on t	threshold:		1.55 mA			
Switch-off	threshold:		1.75 mA			
Outputs						
Output circ	uits (digital)		2 x transistors proof)	s (pnp, short-circuit		
Switching v	oltage/		≤ 30 VDC			
Switching current per output			≤ 50 mA			
Switching frequency			≤ 3000 Hz			
Approvals	and declarat	ions				
Ex approval	l acc. to conforr	nity certificate	TÜV 07 ATEX	553447		
Device desi	gnation		€ II (1) GD	⟨Ex II (1) GD [Ex ia] IIC/IIB		
Max. values	s:		M12 female connection: 1+4/1+3			
Max. outpu	t voltage U₀		≤ 9.6 V			
Max. outpu	t current l _o		\leq 10 mA			
Max. outpu	t power P _o		\leq 24 mW			
Rated volta	ge		250 V			
Characteris	tic		linear			
Internal inc	luctance/capac	itance L _i /C _i	$L_i = 0.15 \text{ mH}$	$C_i = negligibly small$		
External i	nductance/ca	pacitance L _o /C _o				
Ex ia	IIC		IIB			
L _o [mH]	0.85	10	1.85	20		
C _o [nF]	1100	750	5300	3400		
Max. output voltage $\mathrm{U_o}$			≤ 9.6 V			
Max. outpu	t current l _o		≤ 10 mA			
Max. outpu	t power P _o		\leq 24 mW			
Characteristic			linear			
Internal inductance/capacitance L _i /C _i			$L_i = 0.15 \text{ mH},$	$L_i = 0.15 \text{ mH, } C_i = \text{negligibly small}$		
External i	nductance/ca	pacitance L _o /C _o				
Ex nL	IIC		IIB			
L _o [mH]	5.0	0.85	10	0.85		
C _o [nF]	1400	1900	6600	11000		
Ex approval	acc. to conforr	nity certificate	TÜV 07 ATEX	554027 X		
Application	area		II 3 GD			
Protection	type		Ex nA [nL] IIC/IIB T4 or rather Ex tD A22 IP67 T96 °C			

Approval Certification			ATEX, IECEx, TR CU		
Dimensions			32 x 100 x 25 mm		
Protection class			IP67		
Mounting i			for panel		
Housing ma	aterial		Polycarbona	te/ABS	
Electrical co	onnection		M12 flange o	onnection	
Tightening	torque		3.5 Nm		
Mechanic	al data				
			40 °C		
MTTF			295 years acc. to SN 29500 (Ed. 99) 40°C		
Test voltag	e		2.5 kV		
Storage ter	nperature		-40+80°	C	
Ambient te	mperature		-25+70°	C	
Environm	ental Conditio	ons			
Error indica	tion		red		
Switching s			yellow		
Operationa	l readiness		green		
Indication	1				
Approval			SILZ dCC. TO E	AIVA FMEVA	
Ex approval acc. to conformity certificate			TÜV 07 ATEX SIL2 acc. to E		
C_0 [nF]	1400	1900	6600	11000	
L _o [mH]	5.0	0.85	10	0.85	
External II	IIC	pacitainte L ₀ /C ₀	IIB		
	ductance/capac	nance L _i /C _i pacitance L _o /C _o	$L_i = 0.15$ mH, $C_i = negligibly small$		
Characteris		itansa l /C	linear	المسمونية المانسة الما	
Max. outpu					
-	it current I _o		≤ 10 mA ≤ 24 mW		
•	t voltage U _o		≤ 9.6 V		
Max. value			M12 female connection: 1+4/2+3		



Features

- ATEX, IECEx, TR CU
- Installation in zone 2/22
- Isolating switching amplifier with M12 x 1 connectors, 2-channel
- Line monitored for wire-break/shortcircuit (ON/OFF switchable)
- PNP transistor output, NC
- Complete galvanic isolation
- Protection class IP67

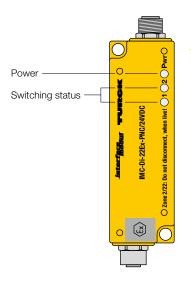
The 2-channel isolating switching amplifier IMC-DI-22EX-PNC/24VDC is equipped with intrinsically safe input circuits.

Sensors according to EN 60947-5-6 (NA-MUR), variable resistors or potential free

contactors can be connected to the device.

The output circuits feature two NO transistors. A green LED indicates operational readiness.

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).



Pin assignment male M12



Pin assignment female M12 (intrinsically safe end)



Type			IMC-DI-22EX-PNC/24VDC			
ldent no.			7560010			
Power su	pply					
Nominal vo	oltage		24 VDC			
Operating	voltage range		2030 VDC			
Inputs						
No-load vo	oltage		8.2 VDC			
Short-circu	iit current		8.2 mA			
Input resis	tance		1 kΩ			
Cable resis	tance		\leq 50 Ω			
Switch-on	threshold:		1.55 mA			
Switch-off	threshold:		1.75 mA			
Outputs	cuits (digital)) v transistar	s (pnp, short-circuit		
output CIf	uits (algital)		2 x transistor proof)	s (piip, siivit-Circuit		
Switching voltage			≤ 30 VDC			
Switching current per output			\leq 50 mA			
Switching	frequency		≤ 3000 Hz			
Approvals	s and declarat	ions				
Ex approva	l acc. to confor	mity certificate	TÜV 07 ATEX	553447		
Device des	ignation		€x II (1) GE	⟨ II (1) GD [Ex ia] IIC/IIB		
Max. value	es:		M12 female connection: 1+4/2+3			
Max. outpu	ut voltage U₀		≤ 9.6 V			
Max. outpu	ut current I _o		\leq 10 mA			
Max. outpu	ut power P _o		\leq 24 mW			
Rated volta	age		250 V			
Characteris	stic		linear			
Internal in	ductance/capac	itance L _i /C _i	$L_i = 0.15 \text{ mH}$, C_i = negligibly small		
External i	inductance/ca	pacitance L _o /C _o				
Ex ia	IIC		IIB			
L₀ [mH]	0.85	10	1.85	20		
C _o [nF]	1100	750	5300	3400		
Max. outp	ut voltage U _o		≤ 9.6 V			
Max. outp	ut current I _o		\leq 10 mA			
Max. outp	ut power P _o		\leq 24 mW	\leq 24 mW		
Characteris	stic		linear			
Internal inductance/capacitance L _i /C _i			$L_i = 0.15 \text{ mH}$, C_i = negligibly small		
External i	inductance/ca	pacitance L₀/C₀				
Ex nL	IIC		IIB			
L _o [mH]	5.0	0.85	10	0.85		
$C_0[nF]$	1400	1900	6600	11000		
Ex approva	al acc. to confor	mity certificate	TÜV 07 ATEX	554027 X		
Application	n area		II 3 GD			
Protection	type		Ex nA [nL] IIC	Z/IIB T4 or rather Ex tD		
	-		Ex nA [nL] IIC/IIB T4 or rather Ex tD A22 IP67 T96 °C			

Max. values:		M12 female connection: 1+4/2+3 ≤ 9.6 V		
Max.output voltage U _o				
Max. output current I _o		≤ 10 mA		
Max. output power P _o		≤ 24 mW		
Characteristic		linear		
Internal inductance/capa External inductance/o		$L_i = 0.15$ mH, $C_i = negligibly small$		
Ex nL IIC	apacitairee 2 ₀ , c ₀	IIB		
L _o [mH] 5.0	0.85	10	0.85	
C _o [nF] 1400	1900	6600	11000	
Ex approval acc. to confo	rmity cartificate	TÜV 07 ATE	Y 55/1027 Y	
Approval	innity tertificate		EXIDA FMEDA	
прргочи		3122 ucc. to	EMDATMEDA	
Indication				
Operational readiness		green		
Switching state		yellow		
Error indication		red		
Environmental Condi	tions			
Ambient temperature		-25+70	°C	
Storage temperature		-40+80°C		
Test voltage		2.5 kV		
MTTF		295 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		