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Signal Conditioning & *Communication Interfaces* *Product Catalog*

PERFORMANCE MADE SMARTER



TEMPERATURE | I.S. INTERFACES | COMMUNICATION INTERFACES | MULTIFUNCTIONAL | ISOLATION | DISPLAY

PR electronics

Our purpose

is to create market-leading site standard solutions with high signal integrity and simplicity for our customers, concentrating on innovation in six core business areas: Temperature, I.S. Interfaces, Communication Interfaces, Multifunctional, Isolation and Display.

Our products are individually outstanding, but when our point-to-point temperature measurement devices, I.S. interfaces, backplanes, multifunctional signal devices and future-proof communication interfaces are combined, our solutions are truly unrivalled.

We will be

our customer's trusted partner for the best and most innovative signal conditioning solutions in the process and factory automation industries.

We provide

a wide range of benefits to our customers through innovative solutions and close collaboration:

- The highest signal integrity from your measurement point to control system
- Maximum uptime based on our Install and Forget® philosophy
- Easy and cost-effective deployment and monitoring with intuitive communication interfaces
- Site standard devices that are easily programmable to suit your specific application
- Day-to-day delivery

Since 1974, we have been dedicated to perfecting our core competence of innovating high precision technology with low power consumption. With a dedicated R&D center that is integrated with our lean production facility at our headquarters in Denmark, we are today one of the leading companies within signal conditioning.

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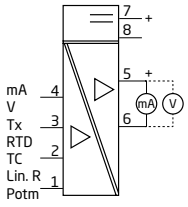
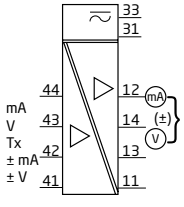
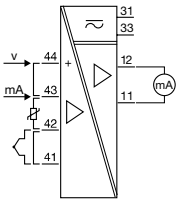
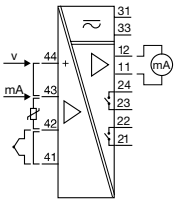
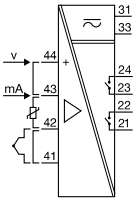
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MULTIFUNCTIONAL TRANSMITTERS



TYPE	3114	4104	4114	4116	4131
	Isolated universal converter	Universal uni-/bipolar signal transmitter	Universal transmitter	Universal transmitter	Universal trip amplifier
INPUT: RTD, TC, linear resistance, mV, mA, V, potentiometer **OUTPUT:** mA, V, relays					
INPUT:					
mA, measurement range / min. span	0...23 mA / 16 mA	-23...+23 mA	0...23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 16 mA
V, measurement range / min. span	0...12 VDC / 0.8 V	-12...+12 VDC / 0.8 V	0...12 VDC / 0.8 V	0...12 VDC / 0.8 V	0...12 VDC / 0.8 V
RTD, measurement range / min. span	-200...+850°C / 25°C		-200...+850°C / -	-200...+850°C / -	-200...+850°C / -
Lin. R, measurement range / min. span	0...10000 Ω / -		0...10000 Ω / -	0...10000 Ω / -	0...10000 Ω / -
Potentiometer	10 Ω...100 kΩ		10 Ω...100 kΩ	10 Ω...100 kΩ	10 Ω...100 kΩ
Sensor connection, wires	2 - 3 - 4		2 - 3 - 4	2 - 3 - 4	2 - 3 - 4
TC types	BEJKLNRSTUW3W5Lr		BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr
Cold junction compensation	Internal		Internal / external	Internal / external	Internal / external
Reference voltage / 2-wire supply	- / > 15 V	- / 16 VDC	- / 16 VDC	- / 16 VDC	- / 16 VDC
OUTPUT:					
mA, signal range / min. span	0...23 mA / 16 mA	-23...+23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 16 mA	
Load (@ current output)	≤ 600 Ω	≤ 800 Ω	≤ 800 Ω	≤ 800 Ω	
V, signal range / min. span	0...10 VDC / 0.8 VDC	-10...+10 VDC / 0.8 VDC	0...10 VDC / 0.8 VDC	0...10 VDC / 0.8 VDC	
Load (@ voltage output)	≥ 10 kΩ	≥ 500 kΩ			
Relays				2 x SPST, AC: 500 VA	2 x SPST, AC: 500 VA
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-25...+70°C	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C
Supply voltage, universal AC / DC	- / 16.8...31.2 VDC	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V
Max. required power	1.2 W	2.5 W	2.0 W	2.5 W	2.0 W
Isolation voltage, test / operation	2.5 kVAC / 250 VAC	2.3 kVAC / 250 VAC	2.3 kVAC / 250 VAC	2.3 kVAC / 250 VAC	2.3 kVAC / 250 VAC
Response time	0.4 / 1.0 s	< 20 ms	< 400 ms	< 400 ms	< 400 ms
Signal dynamics, input / output	24 bit / 16 bit	20 bit / 18 bit	24 bit / 16 bit	24 bit / 16 bit	24 bit / -
Accuracy	< ±0.1% of span	< ±0.05% of span	< ±0.1% of span	< ±0.1% of span	< ±0.1% of span
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C
NAMUR	NE 21, NE 43	NE 21	NE 21, NE 43	NE 21, NE 43	NE 21, NE 43
Channels	1	1	1	1	1
Programming	4500 series devices	4500 series devices	4500 series devices	4500 series devices	4500 series devices
APPROVALS:					
ATEX, Zone 2	✓				
IECEx, Zone 2	✓				
FM, Zone 2 - DIV 2	✓	✓	✓	✓	✓
UL 61010 / 508	✓ / -	- / ✓	- / ✓	- / ✓	- / ✓
DNV-GL / EU-RO marine	✓ / -	✓ / -	✓ / ✓	✓ / ✓	✓ / ✓
EAC	✓	✓	✓	✓	✓
SIL 2, Hardware Assessment			✓	✓	
APPLICATION GUIDE:					
mA / V / temperature input	✓ / ✓ / ✓	✓ / ✓ / -	✓ / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓
Bipolar mA / V input		✓ / ✓			
Lin. R / potentiometer input	✓ / ✓		✓ / ✓	✓ / ✓	✓ / ✓
4...20 mA Tx input	✓	✓	✓	✓	✓
V-curve function		✓			
Buffered voltage output	✓				
Active / passive current output	✓ / -	✓ / ✓	✓ / -	✓ / -	
Analog / relay output	✓ / -	✓ / -	✓ / -	✓ / ✓	- / ✓
Custom sensor linearization					
Process signal calibration	✓	✓	✓	✓	✓
Power rail option	✓				

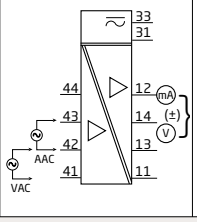
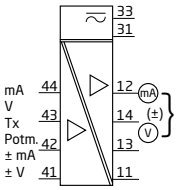
exida = FMEDA report

Of span = Of the presently selected range

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MULTIFUNCTIONAL TRANSMITTERS

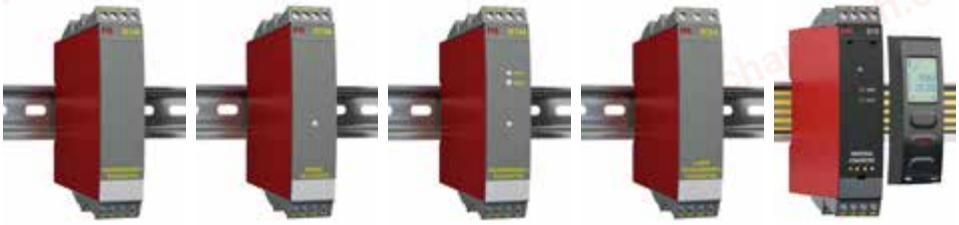


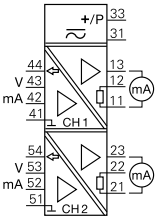
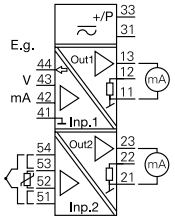
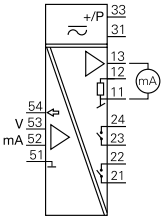
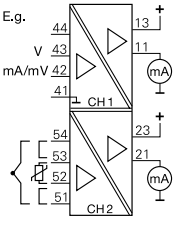
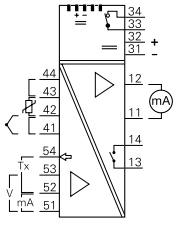
TYPE	4179	4184				
	Universal AC/DC transmitter	Universal uni-/bipolar signal transmitter				
INPUT: mV, mA, A, V, potentiometer **OUTPUT:** mA, V						
INPUT:						
mA, measurement range / min. span		±100 mA / 0.5 mA				
A, measurement range / min. span	0...5 AAC / 0.5 AAC					
V, measurement range / min. span	0...300 VAC / 0.5 VAC	±300 VDC / 25 mV				
RTD, measurement range / min. span						
Lin. R, measurement range / min. span						
Potentiometer		0...100 %				
Reference voltage / 2-wire supply		2.5 V / 16 V				
3-wire supply		> 18...< 28 V				
OUTPUT:						
mA, signal range / min. span	-23...+23 mA / 16 mA	±23 mA / 4 mA				
Load (@ current output)	≤ 800 Ω	≤ 1000 Ω				
V, signal range / min. span	-10...+10 VDC / 0.8 VDC	-10...+10 VDC / 0.8 VDC				
Load (@ voltage output)	≥ 500 kΩ	≥ 500 kΩ				
Buffered voltage output		± 23 V				
TECHNICAL SPECIFICATIONS:						
Ambient temperature	-20...+60°C	-20...+60°C				
Supply voltage, universal AC / DC	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V				
Max. required power	1.8 W	2.5 W				
Isolation voltage, test / operation	2.3 kVAC / 250 VAC	2.3 kVAC / 250 VAC				
Response time	< 0.75 s	< 20 ms				
Signal dynamics, input / output	20 bit / 18 bit	24 bit / 18 bit				
Accuracy	< ±0.3% of span	< ±0.05% of span				
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C				
NAMUR	NE 21, NE 43	NE 21, NE 43				
Channels	1	1				
Programming	4500 series devices	4500 series devices				
APPROVALS:						
ATEX, Zone 2						
IECEx, Zone 2						
FM, Zone 2 - DIV 2						
UL 61010 / 508	- / ✓	- / ✓				
DNV-GL						
EAC						
SIL 2, Hardware Assessment	✓	✓				
APPLICATION GUIDE:						
mA / V / temperature input	✓ / ✓ / -	✓ / ✓ / -				
Bipolar mA / V input		✓ / ✓				
Lin. R / potentiometer input		- / ✓				
4...20 mA Tx input		✓				
V-curve function	✓	✓				
Buffered voltage output		✓				
Active / passive current output	✓ / ✓	✓ / ✓				
Analog / relay output	✓ / -	✓ / -				
Custom sensor linearization						
Process signal calibration	✓	✓				
Power rail option						

exida = FMEDA report

Of span = Of the presently selected range

MULTIFUNCTIONAL TRANSMITTERS



TYPE	5114A	5115A	5116A	5131A	9116A
	Programmable transmitter	Signal calculator	Programmable transmitter w. limit switch	2-wire programmable transmitter	Universal converter
INPUT: RTD, TC, linear resistance, mV, mA, V, potentiometer **OUTPUT:** mA, V, relays					
INPUT:					
mA, measurement range / min. span	0...100 mA / 4 mA	0...100 mA / 4 mA	0...100 mA / 4 mA	0...100 mA / 4 mA	0...23 mA / 16 mA
V, measurement range / min. span	0...250 VDC / 5 mV	0...250 VDC / 5 mV	0...250 VDC / 5 mV	0...250 VDC / 5 mV	0...12 VDC / 0.8 V
mV, measurement range / min. span	-150...+150 mV / 5 mV	-150...+150 mV / 5 mV	-2500...+2500 mV/5 mV	-150...+150 mV / 5 mV	
RTD, measurement range / min. span	-200...+850°C / 25°C	-200...+850°C / 25°C	-200...+850°C / 25°C	-200...+850°C / 25°C	-200...+850°C / 25°C
Lin. R, measurement range / min. span	0...5000 Ω / 30 Ω	0...5000 Ω / 30 Ω	0...5000 Ω / 30 Ω	0...5000 Ω / 30 Ω	0...10000 Ω / -
Potentiometer	200 Ω...100 kΩ	200 Ω...100 kΩ	200 Ω...100 kΩ		10 Ω...10000 Ω
Sensor connection, wires	2 - 3 - 4	2 - 3 - 4	2 - 3 - 4	2 - 3 - 4	2 - 3 - 4
TC types	BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr
Max. offset	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value	
Cold junction compensation	Internal / external	Internal / external	Internal / external	Internal / external	Internal / external
Reference voltage / 2-wire supply	2.5 VDC / > 17.1 VDC	2.5 VDC / > 17.1 VDC	2.5 VDC / > 16.5 VDC		- / > 16.5 VDC
OUTPUT:					
mA, signal range / min. span	0...23 mA / 10 mA	0...23 mA / 10 mA	0...23 mA / 10 mA	3.5...23 mA / 10 mA	0...23 mA / 16 mA
Load (@ current output)	≤ 600 Ω	≤ 600 Ω	≤ 600 Ω	≤ (V_{supply}-7.5)/0.023 [Ω]	≤ 600 Ω
V, signal range / min. span	0...10 VDC / 0.5 VDC	0...10 VDC / 0.5 VDC	0...10 VDC / 0.5 VDC		
Load (@ voltage output)	≥ 500 kΩ	≥ 500 kΩ	≥ 500 kΩ		
Relays			2 x SPST, AC: 500 VA		1 x SPST, AC: 500 VA
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C
Supply voltage, universal AC / DC	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	- / 7.5...35 VDC	- / 19.2...31.2 VDC
Max. required power, 1 / 2 channels	2.1 W / 2.8 W	2.1 W / 2.8 W	2.4 W / -	0.8 W	≤ 2.1 W
Isolation voltage, test / operation	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC	2.6 kVAC / 250 VAC
Response time	250 ms...60 s	250 ms...60 s	250 ms...60 s	1...60 s	0.4 / 1...60 s
Signal dynamics, input / output	22 bit / 16 bit	22 bit / 16 bit	22 bit / 16 bit	22 bit / 16 bit	24 bit / 16 bit
Accuracy	< ±0.05% of span	< ±0.05% of span	< ±0.05% of span	≤ ±0.05% of span	< ±0.1% of span
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C
NAMUR	NE 21, NE 43	NE 21, NE 43	NE 21, NE 43	NE 21, NE 43	NE 21, NE 43
Channels	1 or 2	2	1	1 or 2	1
Programming	5909 + DIP switch	5909 + DIP switch	5909	5909 + DIP switch	4500 series devices

APPROVALS:						
ATEX, Zone 2					✓	
IECEx, Zone 2						
FM, Zone 2						
UL 61010 / 508			- / ✓		✓ / -	
DNV-GL	✓	✓	✓		✓	
EAC	✓	✓	✓	✓	✓	
SIL 2 Full Assessment IEC 61508					✓	

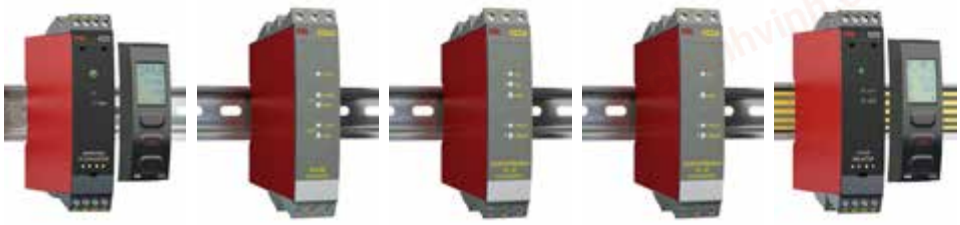
APPLICATION GUIDE:						
mA / V / temperature input	✓ / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓	
Bipolar mV input	✓	✓	✓	✓		
Lin. R / potentiometer input	✓ / ✓	✓ / ✓	✓ / ✓	✓ / -	✓ / ✓	
4...20 mA Tx input	✓	✓	✓	✓	✓	
Dual input - math functions		✓				
Buffered voltage output						
Active / passive current output	✓ / ✓	✓ / ✓	✓ / ✓	✓	✓ / ✓	
Analog / relay output	✓ / -	✓ / -	✓ / ✓	✓ / -	✓ / ✓	
Custom sensor linearization	✓	✓	✓			
Process signal calibration	✓	✓	✓	✓	✓	
Power rail option					✓	

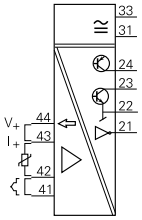
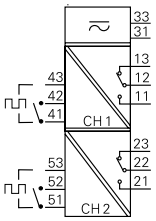
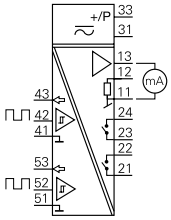
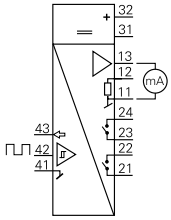
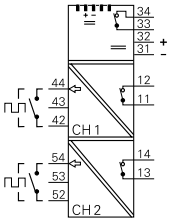
= Full assessment acc. to IEC 61508

Of span = Of the presently selected range

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FREQUENCY / PULSE



TYPE	4222	5202A	5223A	5225A	9202A
	Universal I/f converter	Pulse isolator	Programmable f/I - f/f converter	Programmable f/I - f/f converter	Pulse isolator
INPUT: Frequency, pulse, V, mA, Pt100, TC, mV **OUTPUT:** mA, V, pulse, relays					
INPUT:					
Sensor type		NAMUR / switch	All standard sensors	All standard sensors	NAMUR / switch
Hz, measurement range / min. span		0...5 kHz	0...20 kHz / 0.001 Hz	0...20 kHz / 0.001 Hz	0...5 kHz
Min. pulse width		> 100 µs	25 µs	25 µs	> 100 µs
mA, measurement range / min. span	0...23 mA / 16 mA				
V, measurement range / min. span	0...12 VDC				
RTD, measurement range / min. span	200...+850°C / -				
Lin. R, measurement range / pot.-meter	0 Ω...10 kΩ/10 Ω...100 kΩ				
Sensor connection, wires	2 - 3 - 4				
TC types	BEJKLNRSTUW3W5Lr				
OUTPUT:					
mA, signal range / min. span			0...23 mA / 5 mA	0...23 mA / 5 mA	
V, signal range / min. span			0...10 VDC / 0.25 VDC	0...10 VDC / 0.25 VDC	
Hz, signal range / min. span	0...25000 Hz / 0.001 Hz	0...5 kHz / -			0...5 kHz
Pulse output	NPN / PNP / TTL	NPN / relay	NPN / PNP or relays	NPN / PNP or relays	NPN / relay
Relays		2 x SPDT, AC: 100 VA	2 x SPST, AC: 500 VA	2 x SPST, AC: 500 VA	1 x SPST, AC: 500 VA
Max. output frequency	25 kHz		1000 Hz	1000 Hz	
Sensor supply	> 16 VDC		5...17 VDC	5...17 VDC	
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C
Supply voltage, AC / DC	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V	21.6...253V / 19.2...300V	- / 19.2...28.8 VDC	- / 19.2...31.2 VDC
Max. required power, 1 / 2 channels	2.5 W / -	- / 1.5 W or 1.8 W*	3 W	3.5 W	≤ 1.1...1.3 W/≤ 1.5...1.9 W
Isolation voltage, test / operation	2.3 kVAC / 250 VAC	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC	2.6 kVAC / 250 VAC
Response time	< 1 s		60 ms...1000 s	60 ms...1000 s	200 ms
Signal dynamics, input / output	24 bit / -		- / 16 bit	- / 16 bit	
Accuracy	≤ ±0.1% of span		≤ ±0.1% of span	≤ ±0.1% of span	
Temperature coefficient	< ±0.01% of span / °C		< ±0.01% of span / °C	< ±0.01% of span / °C	
NAMUR	NE 21	NE 21			NE 21
Channels	1	2	1	1	1 or 2
Programming	4500 series devices	DIP switch	5909 + DIP switch	5909 + DIP switch	4500 series devices
APPROVALS:					
ATEX, Zone 2					✓
IECEx, Zone 2					
FM, Zone 2 - DIV 2	✓				
UL 61010 / 508	- / ✓	- / ✓			✓ / -
DNV-GL					✓
EAC	✓	✓	✓	✓	✓
SIL 2, Hardware Assessment		✓			
SIL 2 Full Assessment IEC 61508					✓
APPLICATION GUIDE:					
Frequency to analog converter			✓	✓	
Analog to frequency converter	✓				
Lin. R / potentiometer input	✓ / ✓				
Concurrent f/I and f/f				✓	
Pulse converter / scaler			✓	✓	
Pulse isolator 1:1					✓
Dual input - math functions		✓	✓		
Digital output	✓		✓	✓	✓
Relay output		✓	✓	✓	✓
Process signal calibration	✓	✓	✓	✓	
Power rail option					✓

exida = FMEDA report

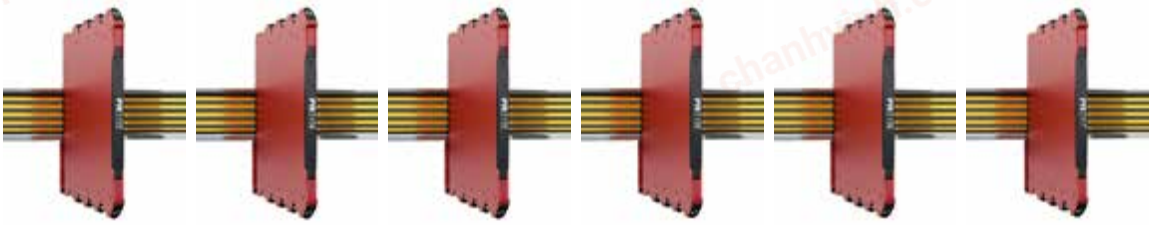
SIL 2 = Full assessment acc. to IEC 61508

***1.5 W (2 relays) / 1.8 W (4 relays)**

Of span = Of the presently selected range

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ISOLATORS



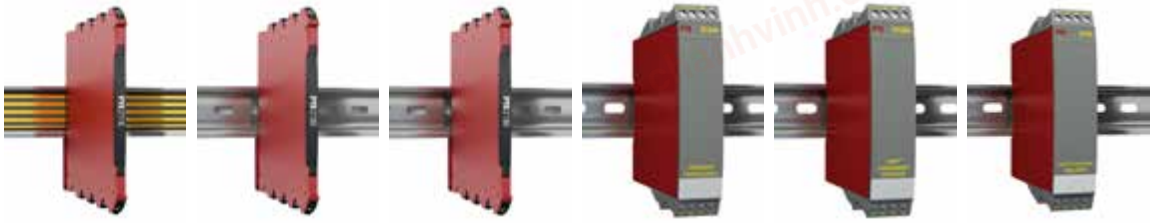
TYPE	3103	3104	3105	3108	3109	3117
	Isolated repeater	Isolated converter	Isolated converter	Isolated repeater / splitter	Isolated converter / splitter	Bipolar isolated converter
INPUT:						
mA, V, potentiometer						
OUTPUT:						
mA, V						
INPUT:						
mA, measurement range / min. span	0...23 mA / 1:1	0...23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 1:1	0...23 mA / 16 mA	-23...+23 mA
V, measurement range / min. span		0...10.25 VDC / 4 VDC	0...10.25 VDC / 4 VDC		0...10.25 VDC / 4 VDC	±5 and ±10 VDC
Reference voltage / 2-wire supply		- / > 17 V			- / > 17 V	
OUTPUT:						
mA, signal range / min. span	0...23 mA / 1:1	0...23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 1:1	0...23 mA / 16 mA	0...23 mA / 16 mA
Load (@ current output)	≤ 600 Ω	≤ 600 Ω	≤ 600 Ω	≤ 300 Ω per channel	≤ 300 Ω per channel	≤ 600 Ω
V, signal range / min. span		0...10 VDC / 4 VDC	0...10 VDC / 4 VDC		0...10 VDC / 4 VDC	0...10 VDC / 4 VDC
Load (@ voltage output)		≥ 10 kΩ	≥ 10 kΩ		≥ 10 kΩ	≥ 10 kΩ
TECHNICAL SPECIFICATIONS:						
Ambient temperature	-25...+70°C	-25...+70°C	0...+70°C	-25...+70°C	-25...+70°C	-25...+70°C
Supply voltage, AC / DC	- / 16.8...31.2 VDC	- / 16.8...31.2 VDC	- / 16.8...31.2 VDC	- / 16.8...31.2 VDC	- / 16.8...31.2 VDC	- / 16.8...31.2 VDC
Max. required power*	0.65 W	1.2 W	0.8 W	0.75 W	1.2 W	0.8 W
Isolation voltage, test / operation	2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC
Response time	< 7 ms	< 7 ms	< 7 ms	< 7 ms	< 7 ms	< 7 ms
Signal dynamics, input / output	Analog signal chain	Analog signal chain	Analog signal chain	Analog signal chain	Analog signal chain	Analog signal chain
Accuracy	< ±0.05% of span	< ±0.05% of span	< ±0.2% of span	< ±0.05% of span	< ±0.05% of span	< ±0.05% of span
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.015% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C
NAMUR	NE 21	NE 21	NE 21	NE 21	NE 21	NE 21
Channels	1	1	1	1	1	1
Programming	No	DIP switch	DIP switch	No	DIP switch	DIP switch
APPROVALS:						
ATEX, Zone 2	✓	✓		✓	✓	✓
IECEx, Zone 2	✓	✓		✓	✓	✓
FM, Zone 2 - DIV 2	✓	✓		✓	✓	✓
UL 61010 / 508	✓ / -	✓ / -	✓ / -	✓ / -	✓ / -	✓ / -
DNV-GL	✓	✓	✓	✓	✓	✓
EAC	✓	✓	✓	✓	✓	✓
APPLICATION GUIDE:						
Signal repeater	✓			✓		
Signal converter		✓	✓		✓	✓
Signal splitter				✓	✓	
mA / V bipolar input						✓
4...20 mA Tx input		✓			✓	
Buffered voltage output		✓	✓		✓	✓
mA / V output	✓ / -	✓ / ✓	✓ / ✓	✓ / -	✓ / ✓	✓ / ✓
Active / passive mA output	✓ / -	✓ / -	✓ / -	✓ / -	✓ / -	✓ / -
Mounting in Zone 2 / Div 2	✓	✓	✓	✓	✓	✓
Power rail option	✓	✓	✓	✓	✓	✓

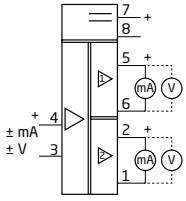
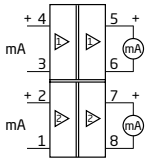
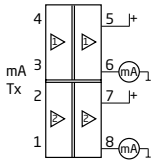
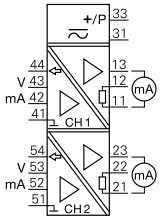
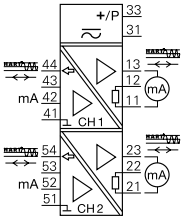
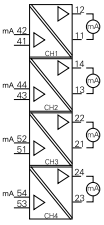
* = @ 24 VDC

Of span = Of the presently selected range

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ISOLATORS



TYPE	3118	3185	3186	5104A	5106A	6185
	Bipolar isolated converter / splitter	Loop-powered isolator	2-wire transmitter isolator	Repeater / power supply	HART transparent repeater	Loop-powered isolator
INPUT: mA, mV, V, HART communication **OUTPUT:** mA, V, HART communication						
INPUT:						
mA, measurement range / min. span	-23...+23 mA	0...23 mA / 1:1	3.5...23 mA / 1:1	0...23 mA / 16 mA	3.5...23 mA / 1:1	0...23 mA / 1:1
V, measurement range / min. span	±5 and ±10 VDC			0...10 VDC / 8 VDC		
Max. offset				20% of selec. max. value		
Reference voltage / 2-wire supply			- / V_{loop}-2.5 VDC	- / > 17.1 VDC	- / > 17 VDC	
OUTPUT:						
mA, signal range / min. span	0...23 mA / 16 mA	0...23 mA / 1:1	3.5...23 mA / 1:1	0...23 mA / 16 mA	3.5...23 mA / 1:1	0...23 mA / 1:1
Load (@ current output)	≤ 300 Ω per channel	≤ 600 Ω		≤ 600 Ω	≤ 600 Ω	≤ 600 Ω
V, signal range / min. span	0...10 VDC / 4 VDC			0...10 VDC / 0.8 VDC		
Load (@ voltage output)	≥ 10 kΩ			≥ 500 kΩ		
Max. offset				20% of selec. max. value		
TECHNICAL SPECIFICATIONS:						
Ambient temperature	-25...+70°C	-25...+70°C	-25...+70°C	-20...+60°C	-20...+60°C	-20...+60°C
Supply voltage, AC / DC	- / 16.8...31.2 VDC	≤ 1.25 V + (0.015 x Vout.)	- / 6...35 VDC	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	- / ≤ 1.8 VDC
Max. required power, 1 / 2 channels	*0.8 W / -	30 mW per channel	50 mW per channel	2.0 W / 2.8 W	2.0 W / 2.8 W	40 mW per channel
Isolation voltage, test / operation	2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC	2 kVAC / -
Response time	< 7 ms	< 5 ms	< 5 ms	< 25 ms	< 25 ms	< 4 ms
Signal dynamics, input / output	Analog signal chain	Analog signal chain	Analog signal chain	Analog signal chain	Analog signal chain	Analog signal chain
Accuracy	< ±0.05% of span	< ±0.1% of span	< ±0.05% of span	≤ ±0.1% of span	≤ ±0.1% of span	≤ ±0.1% of span
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C
NAMUR	NE 21	NE 21	NE 21	NE 21	NE 21	
Channels	1	1 or 2	1 or 2	1 or 2	1 or 2	1, 2 or 4
Programming	DIP switch	No	No	DIP switch	DIP switch	No
APPROVALS:						
ATEX, Zone 2	✓	✓	✓			
IECEx, Zone 2	✓	✓	✓			
FM, Zone 2 - DIV 2	✓	✓	✓			
UL 61010 / 508	✓ / -	✓ / -	✓ / -	- / ✓	- / ✓	
DNV-GL	✓	✓	✓	✓		
EAC	✓	✓	✓	✓	✓	✓
APPLICATION GUIDE:						
Signal repeater		✓	✓		✓	✓
Signal converter	✓			✓		
Signal splitter	✓					
mA / V bipolar input	✓ / ✓					
4...20 mA Tx input			✓	✓	✓	
Buffered voltage output	✓					
Active / passive input signal		✓ / -	✓ / ✓			✓ / -
mA / V output	✓ / ✓	✓ / -	✓ / -	✓ / ✓	✓ / -	✓ / -
Active / passive mA output	✓ / -	✓ / -	- / ✓	✓ / ✓	✓ / ✓	✓ / -
Mounting in Zone 2 / Div 2	✓	✓	✓			
Power rail option	✓					

* = @ 24 VDC

Of span = Of the presently selected range

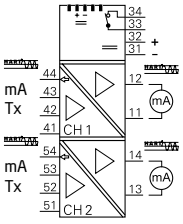
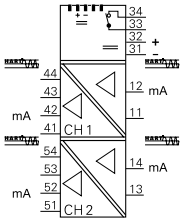
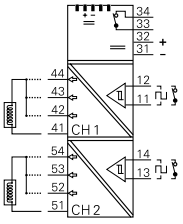
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ISOLATORS



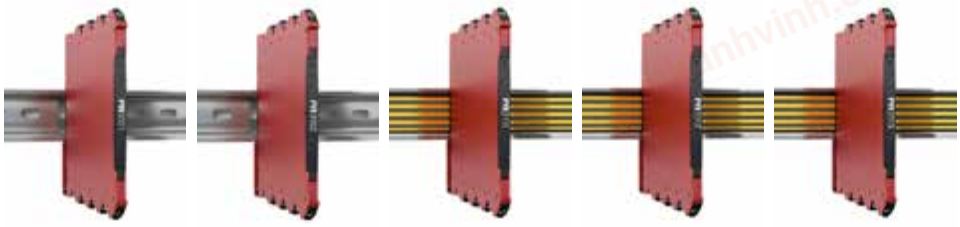


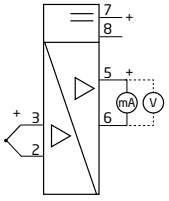
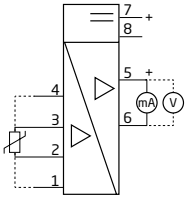
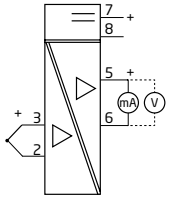
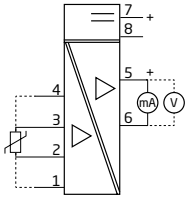
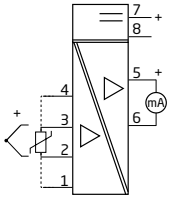


TYPE	9106A	9107A	9203A			
	HART transparent repeater	HART transparent driver	Solenoid / alarm driver			
INPUT: mA, HART communication **OUTPUT:** mA, HART communication						
INPUT:						
mA, measurement range / min. span	3.5...23 mA / 16 mA	3.5 ...23 mA / 16 mA				
V, measurement range / min. span						
Max. offset						
Reference voltage / 2-wire supply	- / > 16 VDC					
Sensor type			NPN / PNP / switch			
OUTPUT:						
mA, signal range / min. span	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA				
Pulse output			Valves etc.			
TECHNICAL SPECIFICATIONS:						
Ambient temperature	-20...+60°C	-20...+60°C	-20...+60°C			
Supply voltage, AC / DC	- / 19.2...31.2 VDC	19.2...31.2 VDC	19.2...31.2 VDC			
Max. required power, 1 / 2 channels	≤ 1.1 W / ≤ 1.9 W	≤ 1.0 W / ≤ 1.8 W	≤ 1.9...2.5 W / ≤ 3.1 W			
Isolation voltage, test / operation	2.6 kVAC / 250 VAC	2.6 kVAC / 250 VAC	2.6 kVAC / 250 VAC			
Response time	< 5 ms	< 5 ms	< 10 ms			
Signal dynamics,input	Analog signal chain	Analog signal chain				
Accuracy	≤ ±16 µA	< ±16 µA				
Temperature coefficient	≤ ±1.6 µA / °C	< ±0.01% of span / °C				
NAMUR	NE 21	NE 21	NE 21			
Channels	1 or 2	1 or 2	1 or 2			
Programming	4500 series devices	4500 series devices	4500 series devices			
APPROVALS:						
ATEX, Zone 2	✓	✓	✓			
IECEx, Zone 2						
FM, Zone 2 - DIV 2						
UL 61010 / 508	✓ / -	✓ / -	✓ / -			
DNV-GL	✓	✓	✓			
EAC	✓	✓	✓			
SIL 2/3 Full Assessment IEC 61508	✓	✓	✓			
APPLICATION GUIDE:						
Signal repeater	✓					
Signal driver		✓				
Signal splitter	✓					
Solenoid / alarm driver			✓			
mA input	✓	✓				
4...20 mA Tx input	✓					
Active / passive mA output	✓ / ✓	✓ / -				
HART signal transparent	✓	✓				
Mounting in Zone 2 / Div 2	✓	✓	✓			
Power rail option	✓	✓	✓			

= Full assessment acc. to IEC 61508

TEMPERATURE TRANSMITTERS



TYPE	3101	3102	3111	3112	3113
INPUT: RTD, linear resistance, TC, mV, mA, potentiometer **OUTPUT:** mA, HART communication	TC converter	Pt100 converter	TC converter - isolated	Pt100 converter - isolated	HART 7 temperature converter
					
INPUT:					
RTD, measurement range / min. span		-200...+850°C / 10°C		-200...+850°C / 10°C	-200...+850°C / 10°C
Lin. R, measurement range / min. span					
Sensor connection, wires		2 - 3 - 4		2 -3 - 4	2 - 3 - 4
TC types	J & K		J & K		J & K
Max. offset					
Cold junction compensation	Internal		Internal / external		Internal / external
OUTPUT:					
mA, signal range / min. span	0...23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 16 mA
Load (@ current output)	≤ 600 Ω	≤ 600 Ω	≤ 600 Ω	≤ 600 Ω	≤ 600 Ω
V, signal range / min. span	0...10 VDC / 4 VDC	0...10 VDC / 4 VDC	0...10 VDC / 4 VDC	0...10 VDC / 4 VDC	
Load (@ voltage output)	≥ 10 kΩ	≥ 10 kΩ	≥ 10 kΩ	≥ 10 kΩ	
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-25...70°C	-25...70°C	-25...70°C	-25...70°C	-25...70°C
Supply voltage, DC	16.8...31.2 VDC	16.8...31.2 VDC	16.8...31.2 VDC	16.8...31.2 VDC	16.8...31.2 VDC
Max. required power*	0.52 W	0.52 W	0.7 W	0.7 W	0.7 W
Isolation voltage, test / operation			2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC	2.5 kVAC / 250 VAC
Response time	< 30 ms	< 30 ms	< 30 ms	< 30 ms	< 60 ms
Signal dynamics, input / output	23 bit / 18 bit	23 bit / 18 bit	23 bit / 18 bit	23 bit / 18 bit	23 bit / 18 bit
Accuracy	≤ ±0.1% of span	≤ ±0.1% of span	≤ ±0.05% of span	≤ ±0.05% of span	≤ ±0.05% of span
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C
NAMUR	NE 21, NE 43	NE 21, NE 43	NE 21, NE 43	NE 21, NE 43	NE 21, NE 43
Channels	1	1	1	1	1
Programming	DIP switch	DIP switch	DIP switch	DIP switch	DIP switch / HART
APPROVALS:					
ATEX, Zone 2	✓	✓	✓	✓	✓
IECEx, Zone 2	✓	✓	✓	✓	✓
FM, Zone 2 - DIV 2	✓	✓	✓	✓	✓
UL 61010 / 508	✓ / -	✓ / -	✓ / -	✓ / -	✓ / -
DNV-GL	✓	✓	✓	✓	✓
EAC	✓	✓	✓	✓	✓
APPLICATION GUIDE:					
RTD / TC / mV input	- / ✓ / -	✓ / - / -	- / ✓ / -	✓ / - / -	✓ / ✓ / -
mA / V output	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	✓ / -
Loop-powered					
Galvanically isolated			✓	✓	✓
HART protocol					✓
Mounting in Zone 2 / DIV 2	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓
Process signal calibration					✓
Power rail option			✓	✓	✓

* = @ 24 VDC

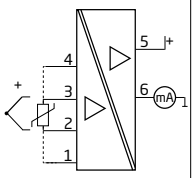
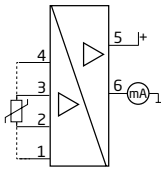
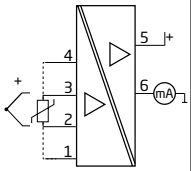
Of span = Of the presently selected range

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TEMPERATURE TRANSMITTERS

HART COMMUNICATION FOUNDATION



TYPE	3331	3333	3337			
	Temperature converter, loop-powered - isolated	Pt100 converter, loop-powered	HART 7 temperature converter, loop-powered			
INPUT: RTD, linear resistance, TC, mV **OUTPUT:** mA, V, HART communication						
INPUT:						
RTD, measurement range / min. span	-200...+850°C / 10°C	-200...+850°C / 10°C	-200...+850°C / 10°C			
Lin. R, measurement range / min. span						
Sensor connection, wires	2 - 3 - 4	2 - 3 - 4	2 - 3 - 4			
TC types	J & K		J & K			
Max. offset						
Cold junction compensation	Internal / external		Internal / external			
OUTPUT:						
mA, signal range / min. span	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA			
Load (@ current output)	≤ (V_{supply}-5.5)/0.023 [Ω]	≤ (V_{supply}-3.3)/0.023 [Ω]	≤ (V_{supply}-6.2)/0.023 [Ω]			
TECHNICAL SPECIFICATIONS:						
Ambient temperature	-25...70°C	-25...70°C	-25...70°C			
Supply voltage, DC	5.5...35 VDC	3.3...35 VDC	6.2...35 VDC			
Max. required power	0.8 W	0.8 W	0.8 W			
Isolation voltage, test / operation	2.5 kVAC / 250 VAC		2.5 kVAC / 250 VAC			
Response time	< 30 ms	< 30 ms	< 60 ms			
Signal dynamics, input / output	23 bit / 18 bit	23 bit / 18 bit	23 bit / 18 bit			
Accuracy	≤ ±0.05% of span	≤ ±0.1% of span	≤ ±0.05% of span			
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C			
NAMUR	NE 21, NE 43	NE 21, NE 43	NE 21, NE 43			
Channels	1	1	1			
Programming	DIP switch	DIP switch	DIP switch / HART			
APPROVALS:						
ATEX, Zone 2	✓	✓	✓			
IECEx, Zone 2	✓	✓	✓			
FM, Zone 2 - DIV 2	✓	✓	✓			
UL 61010 / 508	✓ / -	✓ / -	✓ / -			
DNV-GL	✓	✓	✓			
EAC	✓	✓	✓			
APPLICATION GUIDE:						
RTD / TC / mV input	✓ / ✓ / -	✓ / - / -	✓ / ✓ / -			
mA / V output	✓ / -	✓ / -	✓ / -			
Loop-powered	✓	✓	✓			
Galvanically isolated	✓		✓			
HART protocol			✓			
Mounting in Zone 2 / DIV 2	✓ / ✓	✓ / ✓	✓ / ✓			
Process signal calibration			✓			

Of span = Of the presently selected range

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TEMPERATURE TRANSMITTERS

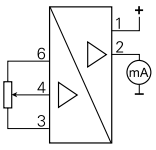
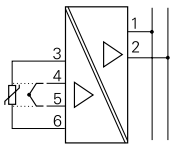
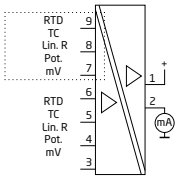
TYPE	5331A	5332A	5333A	5334A	5335A	5337A
INPUT: RTD, linear resistance, TC, mV, potentiometer **OUTPUT:** mA, HART communication	2-wire programmable transmitter	2-wire programmable RTD transmitter	2-wire programmable transmitter	2-wire programmable transmitter	2-wire transmitter with HART 5 protocol	2-wire transmitter with HART 7 protocol
INPUT:						
mV, measurement range / min. span	-12...800 mV / 5 mV			-12...150 mV / 5 mV	-800...+800 mV / 2.5 mV	-800...+800 mV / 2.5 mV
RTD, measurement range / min. span	-200...+850°C / 25°C	-200...+850°C / 25°C	-200...+850°C / 25°C		-200...+850°C / 10°C	-200...+850°C / 10°C
Lin. R, measurement range / min. span	0...5000 Ω / 30 Ω	0...5000 Ω / 30 Ω	0...10 kΩ / 30 Ω		0...7000 Ω / 25 Ω	0...7000 Ω / 25 Ω
Potentiometer						
Sensor connection, wires	2 - 3 - 4	2 - 3 - 4	2 - 3		2 - 3 - 4	2 - 3 - 4
TC types	BEJKLNRSTUW3W5Lr			BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5	BEJKLNRSTUW3W5
Max. offset	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value
Cold junction compensation	Internal / external			Internal	Internal / external	Internal / external
OUTPUT:						
mA, signal range / min. span	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA
TECHNICAL SPECIFICATIONS:						
Ambient temperature	-40...+85°C	-40...+85°C	-40...+85°C	-40...+85°C	-40...+85°C	-40...+85°C
Supply voltage, DC	7.2...35 VDC	7.2...35 VDC	8...35 VDC	7.2...35 VDC	8...35 VDC	8...35 VDC
Max. required power	0.8 W	0.8 W	0.8 W	0.8 W	0.8 W	0.8 W
Isolation voltage, test / operation	1500 VAC / 50 V			1500 VAC / 50 V	1500 VAC / 50 V	1500 VAC / 50 V
Response time	1...60 s	1...60 s	0.33...60 s	1...60 s	1...60 s	1...60 s
Signal dynamics, input / output	20 bit / 16 bit	20 bit / 16 bit	19 bit / 16 bit	18 bit / 16 bit	22 bit / 16 bit	22 bit / 16 bit
Accuracy	≤ ±0.05% of span	≤ ±0.05% of span	≤ ±0.1% of span	≤ ±0.05% of span	≤ ±0.05% of span	≤ ±0.05% of span
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.005% of span / °C	< ±0.005% of span / °C
NAMUR	NE 21, NE 43	NE 43	NE 43	NE 21, NE 43	NE 21, NE 43, NE89	NE 21, NE 43, NE89
Channels	1	1	1	1	1	1
Programming	5909	5909	5909	5909	5909 / HART 5	5909 / HART 7 / HART 5
APPROVALS:						
ATEX, Zone 2	✓	✓	✓	✓	✓	✓
IECEx, Zone 2	✓	✓	✓	✓	✓	✓
CSA, Zone 2 - DIV 2						
FM, Zone 2 - DIV 2						
INMETRO	✓		✓	✓	✓	✓
NEPSI						
DNV-GL	✓		✓	✓	✓	✓
EAC	✓		✓	✓	✓	✓
SIL 2, Hardware Assessment					✓	✓
APPLICATION GUIDE:						
RTD / TC / mV input	✓ / ✓ / ✓	✓ / - / -	✓ / - / -	- / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓
Lin. R / potentiometer input	✓ / -	✓ / -	✓ / -		✓ / -	✓ / -
Dual input (4 terminals)					✓	✓
Custom sensor linearization	✓	✓	✓	✓	✓	✓
mA output	✓	✓	✓	✓	✓	✓
Loop-powered	✓	✓	✓	✓	✓	✓
Galvanically isolated	✓			✓	✓	✓
HART protocol					✓	✓
Mounting in Zone 2 / DIV 2	✓ / -	✓ / -	✓ / -	✓ / -	✓ / -	✓ / -
Process signal calibration	✓	✓	✓	✓	✓	✓

exida = FMEDA report

Of span = Of the presently selected range

TEMPERATURE TRANSMITTERS



TYPE	5343A	5350A	5437A			
	2-wire level transmitter	Profibus PA / Foundation Fieldbus transmitter	2-wire HART 7 temperature transmitter			
INPUT: RTD, linear resistance, TC, mV, potentiometer **OUTPUT:** mA, HART communication, Profibus PA, Foundation Fieldbus						
INPUT:						
mV, measurement range		-800...+800 mV	± 800 mV, -0.1...+1.7 V			
mV, min. span			2.5 mV			
RTD, measurement range / min. span		-200...+850°C / -	-200...+850°C / 10°C			
Lin. R, measurement range / min. span		0...10 kΩ / -	0...100 kΩ / 25 Ω			
Potentiometer	0...100 kΩ / 1 kΩ	0...100 kΩ	10 Ω...100 kΩ / 10%			
Sensor connection, wires		2 - 3 - 4	2 - 3 - 4			
TC types		BEJKLNRSTUW3W5	BEJKLNRSTUW3W5Lr			
Max. offset	50% of selec. max. value					
Cold junction compensation	Internal / external	Internal / external	Internal / external			
OUTPUT:						
mA, signal range / min. span	3.5...23 mA / 16 mA	Profibus PA/Foundation F.	3.5...23 mA / 16 mA			
TECHNICAL SPECIFICATIONS:						
Ambient temperature	-40...+85°C	-40...+85°C	-50...+85°C			
Supply voltage, DC	8...35 VDC	9...32 VDC	7.5...48 VDC			
Max. required power	0.8 W	< 350 mW	< 850 mW			
Isolation voltage, test / operation		1500 VAC / 50 V	2.5 kVAC / 55 VAC			
Response time	0.33...60 s	1...60 s	70 ms			
Signal dynamics, input / output	19 bit / 16 bit	24 bit / -	24 bit / 18 bit			
Accuracy	≤ ±0.1% of span	≤ ±0.05% of MV	≤ ±0.05% of span			
Temperature coefficient	≤ ±0.01% of span / °C	< ±0.002% of MV / °C	< ±0.005% of span / °C			
NAMUR	NE 43	NE 21, NE 43	NE 21/43/44/89/107			
Channels	1	1	1 or 2*			
Programming	5909	Profibus PA/Foundation F.	5909 / HART 7 / HART 5			
APPROVALS:						
ATEX, Zone 2	✓	✓	✓			
IECEx, Zone 2	✓		✓			
CSA, Zone 2 - DIV 2		✓	✓			
FM, Zone 2 - DIV 2		✓	✓			
INMETRO	✓		✓			
NEPSI		✓	✓			
DNV-GL / EU-RO marine	✓ / -		- / (✓)			
EAC	✓	✓	✓			
SIL 2, Hardware Assessment						
SIL 2/3 Full Assessment IEC 61508			✓ / ✓			
APPLICATION GUIDE:						
RTD / TC / mV input		✓ / ✓ / ✓	✓ / ✓ / ✓			
Lin. R / potentiometer input	✓ / ✓	✓ / ✓	✓ / ✓			
Dual input (4 terminals)		✓				
True dual input (7 terminals)			✓			
Custom sensor linearization	✓	✓	✓			
mA output	✓		✓			
Loop-powered	✓		✓			
Galvanically isolated		✓	✓			
HART protocol			✓			
Mounting in Zone 2 / DIV 2	✓ / -	✓ / ✓	✓ / ✓			
Process signal calibration	✓	✓	✓			

= Full Assessment acc. to IEC 61508

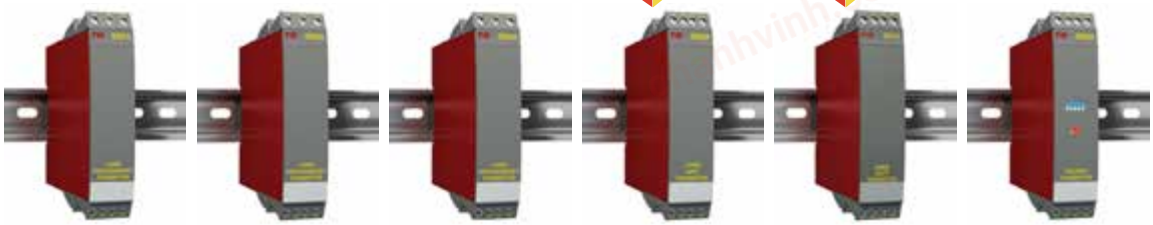
(✓) = Approval pending

* = Single or true dual inputs

Of span = Of the presently selected range

Of MV = Of the present measurement value

TEMPERATURE TRANSMITTERS



TYPE	6331A	6333A	6334A	6335A	6337A	6350A
INPUT: RTD, linear resistance, TC, mV, mA, potentiometer **OUTPUT:** mA, HART communication, Profibus PA, Foundation Fieldbus	2-wire programmable transmitter	2-wire programmable transmitter	2-wire programmable transmitter	2-wire HART 5 transmitter	2-wire HART 7 transmitter	Profibus PA / Foundation Fieldbus transmitter
INPUT:						
mA, measurement range / min. span						-100...+100 mA / -
mV, measurement range / min. span	-12...800 mV / 5 mV		-12...+150 mV / 5 mV	-800...+800 mV / 2.5 mV	-800...+800 mV / 2.5 mV	-800...+800 mV / -
RTD, measurement range / min. span	-200...+850°C / 25°C	-200...+850°C / 25°C		-200...+850°C / 10°C	-200...+850°C / 10°C	-200...+850°C / -
Lin. R, measurement range / min. span	0...5000 Ω / 30 Ω	0...10 kΩ / 30 Ω		0...7000 Ω / 25 Ω	0...7000 Ω / 25 Ω	0...10 kΩ / -
Potentiometer						0...100 kΩ / -
Sensor connection, wires	2 - 3 - 4	2 - 3		2 - 3 - 4	2 - 3 - 4	2 - 3 - 4
TC types	BEJKLNRSTUW3W5Lr		BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5	BEJKLNRSTUW3W5	BEJKLNRSTUW3W5
Max. offset	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value	
Cold junction compensation	Internal / external		Internal	Internal / external	Internal / external	Internal / external
OUTPUT:						
mA, signal range / min. span	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	Profibus PA/Foundation F.
TECHNICAL SPECIFICATIONS:						
Ambient temperature	-40...+85°C	-40...+85°C	-40...+85°C	-40...+85°C	-40...+85°C	-40...+85°C
Supply voltage, DC	7.2...35 VDC	8...35 VDC	7.2...35 VDC	8...35 VDC	8...35 VDC	9...32 VDC
Max. required power, 1 / 2 channels	0.8 W / 1.6 W	0.8 W / 1.6 W	0.8 W / 1.6 W	0.8 W / 1.6 W	0.8 W / 1.6 W	< 350 mW per channel
Isolation voltage, test / operation	1500 VAC / 50 V		1500 VAC / 50 V	1500 VAC / 50 V	1500 VAC / 50 V	1500 VAC / 50 V
Response time	1...60 s	0.33...60 s	1...60 s	1...60 s	1...60 s	1...60 s
Signal dynamics, input / output	20 bit / 16 bit	19 bit / 16 bit	18 bit / 16 bit	22 bit / 16 bit	22 bit / 16 bit	24 bit / -
Accuracy	≤ ±0.05% of span	≤ ±0.1% of span	≤ ±0.05% of span	≤ ±0.05% of span	≤ ±0.05% of span	≤ ±0.05% of MV
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.005% of span / °C	< ±0.005% of span / °C	< ±0.002% of MV / °C
NAMUR	NE 21, NE 43	NE 43	NE 21, NE 43	NE 21, NE 43, NE 89	NE 21, NE 43, NE 89	NE 21, NE 43
Channels	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2
Programming	5909	5909	5909	5909 / HART 5	5909 / HART 7 / HART 5	Profibus PA/Foundation F.
APPROVALS:						
ATEX, Zone 2	✓	✓	✓	✓	✓	✓
IECEx, Zone 2	✓	✓	✓	✓	✓	✓
CSA, Zone 2 - DIV 2						✓
FM, Zone 2 - DIV 2						✓
UL 61010 / 508						
DNV-GL						
EAC	✓	✓	✓	✓	✓	✓
SIL 2, Hardware Assessment				✓	✓	
SIL 2 Full Assessment IEC 61508						
APPLICATION GUIDE:						
RTD / TC / mV input	✓ / ✓ / ✓	✓ / - / -	- / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓
Lin. R / potentiometer input	✓ / -	✓ / -		✓ / -	✓ / -	✓ / ✓
Dual input (4 terminals)				✓	✓	✓
Custom sensor linearization	✓	✓	✓	✓	✓	✓
mA output	✓	✓	✓	✓	✓	
Loop-powered	✓	✓	✓	✓	✓	
Galvanically isolated	✓		✓	✓	✓	✓
HART protocol				✓	✓	
Mounting in Zone 2 / DIV 2	✓ / -	✓ / -	✓ / -	✓ / -	✓ / -	✓ / ✓
Process signal calibration	✓	✓	✓	✓	✓	✓

exida = FMEDA report

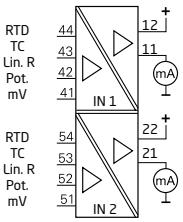
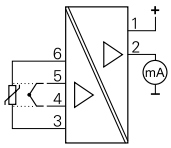
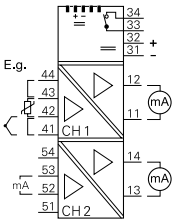
Of span = Of the presently selected range
Of MV = Of the present measurement value

TEMPERATURE TRANSMITTERS







TYPE	6437A	7501	9113A			
INPUT: RTD, linear resistance, TC, mV, mA, potentiometer **OUTPUT:** mA, HART communication	**2-wire HART 7 temperature transmitter** 	**Field mounted HART temperature transmitter** 	**Temperature / mA converter** 			
INPUT:						
mA, measurement range / min. span			0...23 mA / 16 mA			
mV, measurement range	± 800 mV, -0.1...+1.7 V	-800...+800 mV				
mV, min. span	2.5 mV	2.5 mV				
RTD, measurement range / min. span	-200...+850°C / 10°C	-200...+850°C / 10°C	-200...+850°C / 25°C			
Lin. R, measurement range / min. span	0...100 kΩ / 25 Ω	0...7000 Ω / 25 Ω				
Potentiometer	10 Ω...100 kΩ / 10%					
Sensor connection, wires	2 - 3 - 4	2 - 3 - 4	2 - 3 - 4			
TC types	BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5	BEJKLNRSTUW3W5Lr			
Cold junction compensation	Internal / external	Internal / external	Internal / external			
OUTPUT:						
mA, signal range / min. span	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	0...23 mA / 16 mA			
TECHNICAL SPECIFICATIONS:						
Ambient temperature	-50...+85°C	-40...+85°C	-20...+60°C			
Supply voltage, DC	7.5...48 VDC	10 / 12...35 VDC	19.2...31.2 VDC			
Max. required power, 1 / 2 channels	< 850 mW / -		≤ 0.8 W / ≤ 1.4 W			
Isolation voltage, test / operation	2.5 kVAC / 55 VAC	1500 VAC / 50 VAC	2.6 kVAC / 250 VAC			
Response time	70 ms	22 bit / 16 bit	0.4 / 1...60 s			
Signal dynamics, input / output	24 bit / 18 bit	1...60 s	24 bit / 16 bit			
Accuracy	≤ ±0.05% of span	≤ ±0.05% of span	≤ ±0.1% of span			
Temperature coefficient	< ±0.005% of span / °C	< ±0.005% of span / °C	< ±0.01% of span / °C			
NAMUR	NE 21/43/44/89/107	NE 21, NE 43	NE 21, NE 43			
Channels	1 or 2*	1	1 or 2			
Programming	5909 / HART 7 / HART 5	LOI / HART	4500 series devices			
APPROVALS:						
ATEX, Zone 2	✓	✓	✓			
IECEx, Zone 2	✓	✓				
CSA, Zone 2 - DIV 2	✓					
FM, Zone 2 - DIV 2	✓					
INMETRO / NEPSI	✓ / ✓					
UL 61010 / 508			✓ / -			
DNV-GL / EU-RO marine	- / (✓)	- / ✓	✓ / -			
EAC	✓	✓	✓			
SIL 2, Hardware Assessment		✓				
SIL 2/3 Full Assessment IEC 61508	✓ / ✓		✓ / -			
APPLICATION GUIDE:						
RTD / TC / mV input	✓ / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / -			
Lin. R / potentiometer input	✓ / ✓	✓ / -				
Dual input (4 terminals)		✓				
True dual input (8 terminals)	✓					
Custom sensor linearization	✓	✓				
mA output	✓	✓	✓			
Loop-powered	✓	✓				
Galvanically isolated	✓	✓	✓			
HART protocol	✓	✓				
Process signal calibration	✓	✓	✓			
Power rail option			✓			

= Full assessment acc. to IEC 61508
(✓) = Approval pending
= FMEDA report
* = Single or true dual inputs
LOI = Local operator interface
Of span = Of the presently selected range

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I.S. TEMPERATURE TRANSMITTERS





TYPE	5331D	5332D	5333D	5334B	5335D	5337D
INPUT: RTD, linear resistance, TC, mV, potentiometer OUTPUT: mA, HART communication	2-wire programmable transmitter	2-wire programmable RTD transmitter	2-wire programmable transmitter	2-wire programmable transmitter	2-wire transmitter with HART 5 protocol	2-wire transmitter with HART 7 protocol
INPUT:						
mV, measurement range / min. span	-12…800 mV / 5 mV			-12…150 mV / 5 mV	-800…+800 mV / 2.5 mV	-800…+800 mV / 2.5 mV
RTD, measurement range / min. span	-200…+850°C / 25°C	-200…+850°C / 25°C	-200…+850°C / 25°C		-200…+850°C / 10°C	-200…+850°C / 10°C
Lin. R, measurement range / min. span	0…5000 Ω / 30 Ω	0…5000 Ω / 30 Ω	0…10 kΩ / 30 Ω		0…7000 Ω / 25 Ω	0…7000 Ω / 25 Ω
Potentiometer						
Sensor connection, wires	2 - 3 - 4	2 - 3 - 4	2 - 3		2 - 3 - 4	2 - 3 - 4
TC types	BEJKLNRSTUW3W5Lr			BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5	BEJKLNRSTUW3W5
Max. offset						
Cold junction compensation	Internal / external	Internal / external		Internal	Internal / external	Internal / external
OUTPUT:						
mA, signal range / min. span	3.5…23 mA / 16 mA	3.5…23 mA / 16 mA	3.5…23 mA / 16 mA	3.5…23 mA / 16 mA	3.5…23 mA / 16 mA	3.5…23 mA / 16 mA
TECHNICAL SPECIFICATIONS:						
Ambient temperature	-40…+85°C	-40…+85°C	-40…+85°C	-40…+85°C	-40…+85°C	-40…+85°C
Supply voltage, DC	7.2…30 VDC	7.2…30 VDC	8…30 VDC	7.2…30 VDC	8…30 VDC	8…30 VDC
Max. required power	0.7 W	0.7 W	0.7 W	0.7 W	0.7 W	0.7 W
Isolation voltage, test / operation	1500 VAC / 50 V			1500 VAC / 50 V	1500 VAC / 50 V	1500 VAC / 50 V
Response time	1…60 s	1…60 s	0.33…60 s	1…60 s	1…60 s	1…60 s
Signal dynamics, input / output	20 bit / 16 bit	20 bit / 16 bit	19 bit / 16 bit	18 bit / 16 bit	22 bit / 16 bit	22 bit / 16 bit
Accuracy	≤ ±0.05% of span	≤ ±0.05% of span	≤ ±0.1% of span	≤ ±0.05% of span	≤ ±0.05% of span	≤ ±0.05% of span
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.005% of span / °C	< ±0.005% of span / °C
NAMUR	NE 21, NE 43	NE 21, NE 43	NE 43	NE 21, NE 43	NE 21, NE 43, NE89	NE 21, NE 43, NE89
Channels	1	1	1	1	1	1
Programming	5909	5909	5909	5909	5909 / HART 5	5909 / HART 7 / HART 5
APPROVALS:						
ATEX	✓	✓	✓	✓	✓	✓
IECEx	✓	✓	✓	✓	✓	✓
FM	✓	✓	✓		✓	✓
CSA	✓	✓	✓		✓	✓
INMETRO	✓		✓	✓	✓	✓
DNV-GL	✓		✓	✓	✓	✓
EAC Ex	✓		✓	✓		
NEPSI						
SIL 2 Hardware Assessment					✓	✓
APPLICATION GUIDE:						
RTD / TC / mV input	✓ / ✓ / ✓	✓ / - / -	✓ / - / -	- / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓
Lin. R / potentiometer input	✓ / -	✓ / -	✓ / -		✓ / -	✓ / -
Dual input (4 terminals)					✓	✓
Custom sensor linearization	✓	✓	✓	✓	✓	✓
mA output	✓	✓	✓	✓	✓	✓
Loop-powered	✓	✓	✓	✓	✓	✓
Galvanically isolated	✓			✓	✓	✓
HART protocol					✓	✓
Process signal calibration	✓	✓	✓	✓	✓	✓

exida = FMEDA report

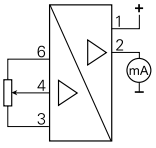
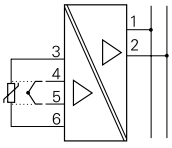
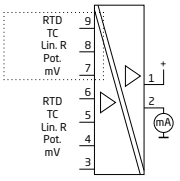
Of span = Of the presently selected range

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I.S. TEMPERATURE TRANSMITTERS





TYPE	5343B	5350B	5437D
	2-wire level transmitter	Profibus PA / Foundation Fieldbus transmitter	2-wire HART 7 temperature transmitter
INPUT: RTD, linear resistance, TC, mV, potentiometer OUTPUT: mA, HART communication, Profibus PA, Foundation Fieldbus			
INPUT:			
mV, measurement range		-800...+800 mV	-± 800 mV, -0.1...+1.7 V
mV, min. span			2.5 mV
RTD, measurement range / min. span		-200...+850°C / -	-200...+850°C / 10°C
Lin. R, measurement range / min. span	0...100 kΩ / 1 kΩ	0...10 kΩ / -	0...100 kΩ / 25 Ω
Potentiometer	1 kΩ...100 kΩ	0...100 kΩ	10 Ω...100 kΩ / 10%
Sensor connection, wires		2 - 3 - 4	2 - 3 - 4
TC types		BEJKLNRSTUW3W5	BEJKLNRSTUW3W5Lr
Max. offset	50% of selec. max. value		
Cold junction compensation		Internal / external	Internal / external
OUTPUT:			
mA, signal range / min. span	3.5...23 mA / 16 mA	Profibus PA/Foundation F.	3.5...23 mA / 16 mA
TECHNICAL SPECIFICATIONS:			
Ambient temperature	-40...+85°C	-40...+85°C	-50...+85°C
Supply voltage, DC	8...30 VDC	9...32 VDC	7.5...30 VDC
Max. required power	0.7 W	< 350 mW	< 850 mW
Isolation voltage, test / operation		1500 VAC / 50 V	2.5 kVAC / 42 VAC
Response time	0.33...60 s	1...60 s	70 ms
Signal dynamics, input / output	19 bit / 16 bit	24 bit / -	24 bit / 18 bit
Accuracy	≤ ±0.1% of span	≤ ±0.05% of MV	≤ ±0.05% of span
Temperature coefficient	≤ ±0.01% of span / °C	< ±0.002% of MV / °C	< ±0.005% of span / °C
NAMUR	NE 43	NE 21, NE 43	NE 21 / 43 / 44 / 89 / 107
Channels	1	1	1 or 2*
Programming	5909	Profibus PA/Foundation F.	5909 / HART 7 / HART 5
APPROVALS:			
ATEX	✓	✓	✓
IECEx	✓	✓	✓
FM	✓	✓	✓
CSA		✓	✓
INMETRO	✓	✓	✓
DNV-GL / EU-RO marine	✓ / -		- / (✓)
EAC Ex	✓	✓	✓
NEPSI			✓
SIL 2, Hardware Assessment			
SIL 2/3 Full Assessment IEC 61508			✓ / ✓
APPLICATION GUIDE:			
RTD / TC / mV input		✓ / ✓ / ✓	✓ / ✓ / ✓
Lin. R / potentiometer input	✓ / ✓	✓ / ✓	✓ / ✓
Dual input (4 terminals)		✓	
True dual input (7 terminals)	✓		✓
Custom sensor linearization	✓	✓	✓
mA output	✓		✓
Bus-powered PA/FF		✓ / ✓	
Loop-powered			✓
Galvanically isolated	✓	✓	✓
HART protocol			✓
Process signal calibration		✓	✓

SIL 2/3 = Full Assessment acc. to IEC 61508

(✓) = Approval pending

* = Single or true dual inputs

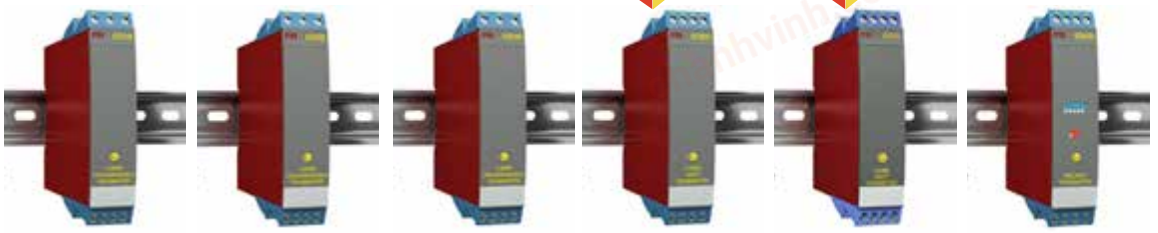
Of span = Of the presently selected range

Of MV = Of the present measurement value

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I.S. TEMPERATURE TRANSMITTERS





TYPE	6331B	6333B	6334B	6335D	6337D	6350B
INPUT: RTD, linear resistance, TC, mV, mA, potentiometer OUTPUT: mA, HART communication, Profibus PA, Foundation Fieldbus	2-wire programmable transmitter	2-wire programmable transmitter	2-wire programmable transmitter	2-wire HART 5 transmitter	2-wire HART 7 transmitter	Profibus PA / Foundation Fieldbus transmitter
INPUT:						
mA, measurement range / min. span						-100...+100 mA
mV, measurement range / min. span	-12...800 mV / 5 mV		-12...+150 mV / 5 mV	-800...+800 mV / 2.5 mV	-800...+800 mV / 2.5 mV	-800...+800 mV / -
RTD, measurement range / min. span	-200...+850°C / 25°C	-200...+850°C / 25°C		-200...+850°C / 10°C	-200...+850°C / 10°C	-200...+850°C / -
Lin. R, measurement range / min. span	0...5000 Ω / 30 Ω	0...10 kΩ / 30 Ω		0...7000 Ω / 25 Ω	0...7000 Ω / 25 Ω	0...10 kΩ / -
Potentiometer						0...100 kΩ / -
Sensor connection, wires	2 - 3 - 4	2 - 3		2 - 3 - 4	2 - 3 - 4	2 - 3 - 4
TC types	BEJKLNRSTUW3W5Lr		BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5	BEJKLNRSTUW3W5	BEJKLNRSTUW3W5
Max. offset	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value	50% of selec. max. value	
Cold junction compensation	Internal / external		Internal	Internal / external	Internal / external	Internal / external
OUTPUT:						
mA, signal range / min. span	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	Profibus PA/Foundation F.
TECHNICAL SPECIFICATIONS:						
Ambient temperature	-40...+85°C	-40...+85°C	-40...+85°C	-40...+85°C	-40...+85°C	-40...+85°C
Supply voltage, DC	7.2...30 VDC	8...30 VDC	7.2...30 VDC	8...30 VDC	8...30 VDC	9...32 VDC
Max. required power, 1 / 2 channels	0.7 W / 1.4 W	0.7 W / 1.4 W	0.7 W / 1.4 W	0.7 W / 1.4 W	0.7 W / 1.4 W	< 350 mW per channel
Isolation voltage, test / operation	1500 VAC / 50 V		1500 VAC / 50 V	1500 VAC / 50 V	1500 VAC / 50 V	1500 VAC / 50 V
Response time	1...60 s	0.33...60 s	1...60 s	1...60 s	1...60 s	1...60 s
Signal dynamics, input / output	20 bit / 16 bit	19 bit / 16 bit	18 bit / 16 bit	22 bit / 16 bit	22 bit / 16 bit	24 bit / -
Accuracy	≤ ±0.05% of span	≤ ±0.1% of span	≤ ±0.05% of span	≤ ±0.05% of span	≤ ±0.05% of span	≤ ±0.05% of MV
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.005% of span / °C	< ±0.005% of span / °C	< ±0.002% of MV / °C
NAMUR	NE 21, NE 43	NE 43	NE 21, NE 43	NE 21, NE 43, NE 89	NE 21, NE 43, NE 89	NE 21, NE 43
Channels	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2
Programming	5909	5909	5909	5909 / HART 5	5909 / HART 7 / HART 5	Profibus PA/Foundation F.
APPROVALS:						
ATEX	✓	✓	✓	✓	✓	✓
IECEx	✓	✓	✓	✓	✓	✓
FM	✓	✓		✓	✓	✓
CSA	✓	✓		✓	✓	✓
UL						
DNV-GL						
EAC Ex	✓	✓	✓	✓	✓	✓
SIL 2, Hardware Assessment				✓	✓	
APPLICATION GUIDE:						
RTD / TC / mV input	✓ / ✓ / ✓	✓ / - / -	- / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓
Lin. R / potentiometer input	✓ / -	✓ / -		✓ / -	✓ / -	✓ / ✓
Dual input (4 terminals)				✓	✓	✓
Custom sensor linearization	✓	✓	✓	✓	✓	✓
mA output	✓	✓	✓	✓	✓	
Bus-powered PA/FF						✓ / ✓
Loop-powered	✓	✓	✓	✓	✓	
Galvanically isolated	✓		✓	✓	✓	✓
HART protocol				✓	✓	
Process signal calibration	✓	✓	✓	✓	✓	✓

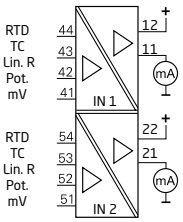
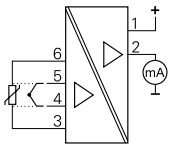
exida = FMEDA report

Of span = Of the presently selected range
Of MV = Of the present measurement value

I.S. TEMPERATURE TRANSMITTERS





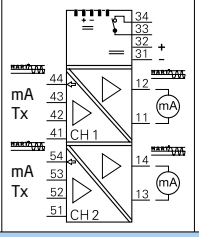
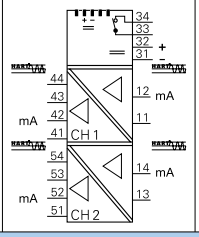
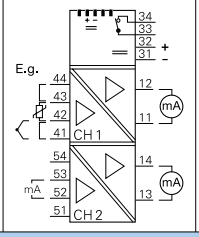
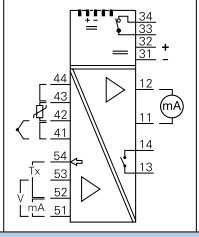
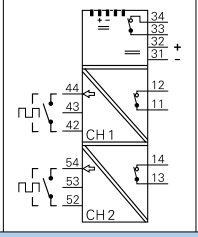
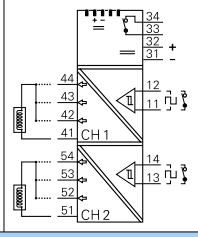
TYPE	6437D	7501
INPUT: RTD, linear resistance, TC, mV, potentiometer OUTPUT: mA, HART communication	2-wire HART 7 temperature transmitter 	Field mounted HART temperature transmitter 
INPUT:		
mA, measurement range / min. span		
mV, measurement range	± 800 mV, -0.1...+1.7 V	-800...+800 mV
mV, min. span	2.5 mV	2.5 mV
RTD, measurement range / min. span	-200...+850°C / 10°C	-200...+850°C / 10°C
Lin. R, measurement range / min. span	0...100 kΩ / 25 Ω	0...7000 Ω / 25 Ω
Potentiometer	10 Ω...100 kΩ / 10%	
Sensor connection, wires	2 - 3 - 4	2 - 3 - 4
TC types	BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5
Cold junction compensation	Internal / external	Internal / external
OUTPUT:		
mA, signal range / min. span	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA
TECHNICAL SPECIFICATIONS:		
Ambient temperature	-50...+85°C	-40...+85°C
Supply voltage, DC	7.5...30 VDC	10 / 12...30 VDC
Max. required power, 1 / 2 channels	< 850 mW / -	
Isolation voltage, test / operation	2.5 kVAC / 42 VAC	1500 VAC / 50 V
Signal dynamics, input / output	70 ms	22 bit / 16 bit
Response time	24 bit / 18 bit	1...60 s
Accuracy	≤ ±0.05% of span	≤ ±0.05% of span
Temperature coefficient	< ±0.005% of span / °C	< ±0.005% of span / °C
NAMUR	NE 21 / 43 / 44 / 89 / 107	NE 21, NE 43
Channels	1 or 2*	1
Programming	5909 / HART 7 / HART 5	LOI / HART
APPROVALS:		
ATEX	✓	✓
IECEx	✓	✓
FM	✓	✓
CSA	✓	✓
INMETRO	✓	✓
EU-RO marine	(✓)	✓
EAC Ex	✓	✓
NEPSI	✓	✓
SIL 2 Hardware Assessment		✓
SIL 2/3 Full Assessment IEC 61508	✓ / ✓	
APPLICATION GUIDE:		
RTD / TC / mV input	✓ / ✓ / ✓	✓ / ✓ / ✓
Lin. R / potentiometer input	✓ / ✓	✓ / -
Dual input (4 terminals)		✓
True dual input (8 terminals)	✓	
Custom sensor linearization	✓	✓
mA output	✓	✓
Bus-powered PA/FF		
Loop-powered	✓	✓
Galvanically isolated	✓	✓
HART protocol	✓	✓
Process signal calibration	✓	✓

= Full assessment acc. to IEC 61508
(✓) = Approval pending
exida = FMEDA report
* = Single or true dual inputs
LOI = Local operator interface
Of span = Of the presently selected range

I.S. INTERFACES



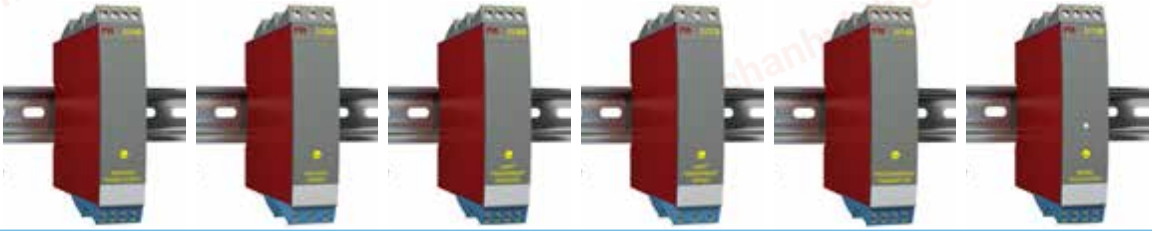


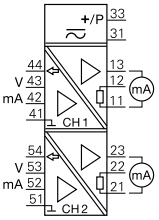
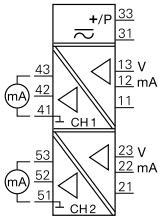
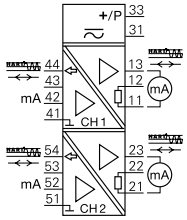
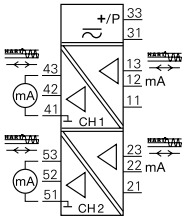
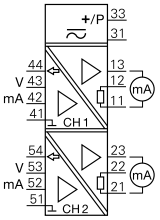
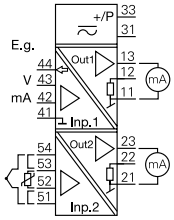
TYPE	9106B	9107B	9113B	9116B	9202B	9203B
	HART transparent repeater	HART transparent driver	Temperature / mA converter	Universal converter	Pulse isolator	Solenoid / alarm driver
INPUT: mA, mV, V, potentiometer, RTD, Lin. R, TC, Hz, HART communication **OUTPUT:** mA, relays, HART communication						
INPUT:						
mA, measurement range / min. span	3.5...23 mA / 16 mA	3.5 ...23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 16 mA		
V, measurement range / min. span				0...12 VDC / 0.8 V		
RTD, measurement range / min. span			-200...+850°C / 25°C	-200...+850°C / 25°C		
Lin. R, measurement range / min. span				0...10000 Ω / -		
Potentiometer				10 Ω...10000 Ω		
Sensor connection, wires			2 - 3 - 4	2 - 3 - 4		
TC types			BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr		
Sensor type					NAMUR / switch	NPN / PNP / switch
Hz, measurement range / min. span					0...5 kHz	
Min. pulse width					100 µs	
OUTPUT:						
mA, signal range / min. span	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	0...23 mA / 16 mA	0 ...23 mA / 16 mA		
Pulse output					NPN / relay	Valves etc.
Hz, signal range					0...5 kHz	
Relay				1 x SPST, AC: 500 VA	1 x SPST, AC: 500 VA	
TECHNICAL SPECIFICATIONS:						
Ambient temperature	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C
Supply voltage, DC	19.2...31.2 VDC	19.2...31.2 VDC	19.2...31.2 VDC	19.2...31.2 VDC	19.2...31.2 VDC	19.2...31.2 VDC
Max. required power, 1 / 2 channels	≤ 1.1 W / ≤ 1.9 W	≤ 1.0 W / ≤ 1.8 W	≤ 0.8 W / ≤ 1.4 W	≤ 2.1 W / -	≤ 1.1...1.3 W/ ≤ 1.5...1.9 W	≤ 1.9...2.5 W/ ≤ 3.1 W
Isolation voltage, test / operation	2.6 kVAC / 250 VAC	2.6 kVAC / 250 VAC	2.6 kVAC / 250 VAC	2.6 kVAC / 250 VAC	2.6 kVAC / 250 VAC	2.6 kVAC / 250 VAC
Response time	< 5 ms	< 5 ms	0.4 / 1...60 s	0.4 / 1...60 s	200 ms	< 10 ms
Signal dynamics, input / output	Analog signal chain	Analog signal chain	24 bit / 16 bit	24 bit / 16 bit		
Accuracy	< ±16 µA	< ±16 µA	≤ ±0.1% of span	≤ ±0.1% of span		
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C		
NAMUR	NE 21	NE 21	NE 21, NE 43	NE 21, NE 43	NE 21	NE 21
Channels	1 or 2	1 or 2	1 or 2	1	1 or 2	1 or 2
Programming	4500 series devices	4500 series devices	4500 series devices	4500 series devices	4500 series devices	4500 series devices
APPROVALS:						
ATEX	✓	✓	✓	✓	✓	✓
IECEx	✓	✓	✓	✓	✓	✓
FM	✓	✓	✓	✓	✓	✓
INMETRO	✓	✓	✓	✓	✓	✓
UL 61010	✓	✓	✓	✓	✓	✓
DNV-GL	✓	✓	✓	✓	✓	✓
EAC Ex	✓	✓	✓	✓	✓	✓
SIL 2/3 Full Assessment IEC 61508	✓ / ✓	✓ / -	✓ / -	✓ / -	✓ / -	✓ / -
APPLICATION GUIDE:						
AI barrier	✓		✓	✓		
AO barrier		✓				
DI barrier					✓	
DO barrier						✓
mA / V / temperature input	✓ / - / -	✓ / - / -	✓ / - / ✓	✓ / ✓ / ✓		
4...20 mA Tx input	✓			✓		
mA / V / relay output	✓ / - / -	✓ / - / -	✓ / - / -	✓ / - / ✓	- / - / ✓	
Active / passive mA output	✓ / ✓	✓ / -	✓ / ✓	✓ / ✓		
HART signal transparent	✓	✓				
Process signal calibration			✓	✓		
Power rail option	✓	✓	✓	✓	✓	✓

SIL 2/3 = Full assessment acc. to IEC 61508

Of span = Of the presently selected range





TYPE	5104B	5105B	5106B	5107B	5114B	5115B
	Ex repeater / power supply	Ex-isolated driver	HART transparent repeater	HART transparent driver	Programmable transmitter	Signal calculator
INPUT: mA, mV, V, potentiometer, RTD, linear resistance, TC, HART communication **OUTPUT:** mA, V, relays, HART communication						
INPUT:						
mA, measurement range / min. span	0...23 mA / 16 mA	0...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	0...100 mA / 4 mA	0...100 mA / 4 mA
V, measurement range / min. span	0...10 VDC / 8 VDC	0...10 VDC / 8 VDC			0...250 VDC / 5 mV	0...250 VDC / 5 mV
mV, measurement range / min. span					-150...+150 mV / 5 mV	-150...+150 mV / 5 mV
RTD, measurement range / min. span					-200...+850°C / 25°C	-200...+850°C / 25°C
Lin. R, measurement range / min. span					0...5000 Ω / 30 Ω	0...5000 Ω / 30 Ω
Potentiometer					200 Ω...100 kΩ	200 Ω...100 kΩ
Sensor connection, wires					2 - 3 - 4	2 - 3 - 4
TC types					BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr
Max. offset	20% of selec. max. value	20% of selec. max. value	20% of selec. max. value	20% of selec. max. value	50% of selec. max. value	50% of selec. max. val.
OUTPUT:						
mA, signal range / min. span	0...23 mA / 16 mA	0...23 mA / 16 mA	3.5...23 mA / 16 mA	3.5...23 mA / 16 mA	0...23 mA / 10 mA	0...23 mA / 10 mA
Load (@ current output)	≤ 600 Ω	≤ 770 Ω	≤ 600 Ω	≤ 770 Ω	600 Ω	600 Ω
V, signal range / min. span	0...10 VDC / 0.8 VDC	0...10 VDC / 0.8 VDC			0...10 VDC / 0.5 VDC	0...10 VDC / 0.5 VDC
Max. offset	20% of selec. max. value	20% of selec. max. value	20% of selec. max. value	20% of selec. max. value	50% of selec. max. value	50% of selec. max. val.
TECHNICAL SPECIFICATIONS:						
Ambient temperature	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C
Supply voltage, AC / DC	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	21.6...253 V/19.2...300 V
Max. required power, 1 / 2 channels	2.0 W / 2.8 W	1.3 W / 2.0 W	2.0 W / 2.8 W	1.4 W / 2.1 W	2.1 W / 2.8 W	2.1 W / 2.8 W
Isolation voltage, test / operation	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC
Response time	< 25 ms	< 25 ms	< 25 ms	< 25 ms	250 ms...60 s	250 ms...60 s
Signal dynamics, input / output	Analog signal chain	Analog signal chain	Analog signal chain	Analog signal chain	22 bit / 16 bit	22 bit / 16 bit
Accuracy	≤ ±0.1% of span	≤ ±0.1% of span	≤ ±0.1% of span	≤ ±0.1% of span	≤ ±0.05% of span	≤ ±0.05% of span
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C
NAMUR	NE 21	NE 21	NE 21	NE 21	NE 21, NE 43	NE 21, NE 43
Channels	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	2
Programming	DIP switch	DIP Switch	No	No	5909 + DIP switch	5909 + DIP switch
APPROVALS:						
ATEX	✓	✓	✓	✓	✓	✓
IECEx						
FM						
CSA						
UL	✓	✓	✓	✓		
DNV-GL	✓	✓			✓	✓
EAC Ex	✓	✓	✓	✓	✓	✓
APPLICATION GUIDE:						
AI barrier	✓		✓		✓	✓
AO barrier		✓		✓		
DI barrier						
DO barrier						
RTD / TC input					✓ / ✓	✓ / ✓
mA / V / mV input	✓ / ✓ / -	✓ / ✓ / -	✓ / - / -	✓ / - / -	✓ / ✓ / ✓	✓ / ✓ / ✓
4...20 mA Tx input	✓		✓		✓	✓
Lin. R / potentiometer input					✓ / ✓	✓ / ✓
mA / V / relay output	✓ / ✓ / -	✓ / ✓ / -	✓ / - / -	✓ / - / -	✓ / ✓ / -	✓ / ✓ / -
Active / passive mA output	✓ / ✓	✓ / -	✓ / ✓	✓ / -	✓ / ✓	✓ / ✓
Process signal calibration					✓	✓

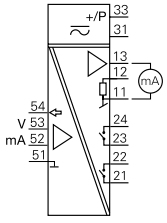
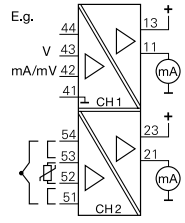
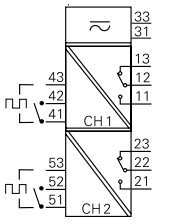
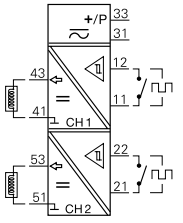
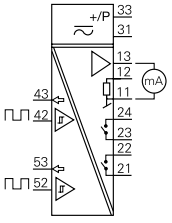
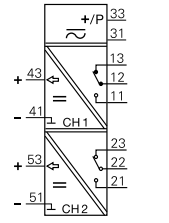
Of span = Of the presently selected range

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I.S. INTERFACES

exida



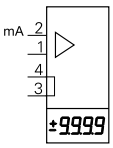
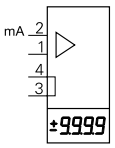
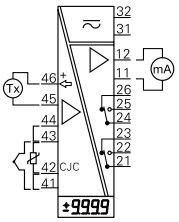
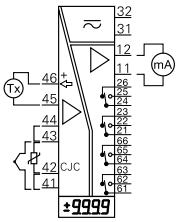
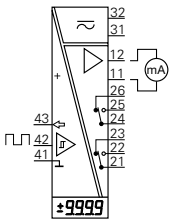
TYPE	5116B	5131B	5202B	5203B	5223B	5420B
	Programmable transmitter	2-wire programmable transmitter	Pulse isolator	Ex solenoid / alarm driver	Programmable f/I - f/f converter	Ex power supply for 2-wire Tx
INPUT: mA, mV, V, potentiometer, RTD, linear resistance, TC, Hz **OUTPUT:** mA, V, relays						
INPUT:						
mA, measurement range / min. span	0...100 mA / 4 mA	0...100 mA / 4 mA				
V, measurement range / min. span	0...250 VDC / 5 mV	0...250 VDC / 5 mV				
mV, measurement range / min. span	-2500...+2500 mV / 5 mV	-150...+150 mV / 5 mV				
RTD, measurement range / min. span	-200...+850°C / 25°C	-200...+850°C / 25°C				
Lin. R, measurement range / min. span	0...5000 Ω / 30 Ω					
Potentiometer	200 Ω...100 kΩ					
Sensor connection, wires	2 - 3 - 4	2 - 3 - 4				
TC types	BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr				
Sensor type			NAMUR / switch	NPN / PNP / switch	NAMUR / switch	
Hz, measurement range / min. span			0...5 kHz		0...20 kHz / 0.001 Hz	
OUTPUT:						
mA, signal range / min. span	0...23 mA / 10 mA	3.5...23 mA / 10 mA			0...23 mA / 5 mA	
Pulse output			NPN / relay	Valves etc.	NPN / PNP / relay	
Hz, signal range			0...5 kHz		0...1000 Hz	
Relays	2 x SPST, AC: 500 VA		2 x SPDT, AC: 100 VA		2 x SPST, AC: 100 VA	1 x SPDT, AC: 100 VA
Voltage / current						> 18 VDC / 20 mA
TECHNICAL SPECIFICATIONS:						
Ambient temperature	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C
Supply voltage, AC / DC	21.6...253 V / 19.2...300 V	- / 7.5...35 VDC	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V
Max. required power, 1 / 2 channels	2.4 W / -	0.8 W / 1.6 W	- / 1.8 W	2.0 W / 2.5 W	3 W / -	- / 2.5 W
Isolation voltage, test / operation	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC	3.75 kVAC / 250 VAC
Response time	250 ms...60 s	250 ms...60 s			60 ms...1000 s	
Signal dynamics, input / output	22 bit / 16 bit	22 bit / 16 bit			- / 16 bit	
Accuracy	≤ ±0.05% of span	≤ ±0.05% of span				
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C			< ±0.01% of span / °C	
NAMUR	NE 21, NE 43	NE 21, NE 43	NE 21	NE 21		NE 21
Channels	1	1 or 2	2	1 or 2	1	2
Programming	5909	5909 + DIP switch	DIP switch	DIP switch	5909 + DIP switch	No
APPROVALS:						
ATEX	✓	✓	✓	✓	✓	✓
IECEx						
FM	✓					
CSA						
UL	✓		✓	✓		
DNV-GL	✓					
EAC Ex	✓	✓	✓	✓	✓	✓
SIL 2, Hardware Assessment			✓			
APPLICATION GUIDE:						
AI barrier	✓	✓				
AO barrier						
DI barrier			✓		✓	
DO barrier				✓		
mA / V / temperature input	✓	✓				
4...20 mA Tx input	✓					✓
mA / V / relay output	✓	✓ / - / -				
Active / passive mA output	✓ / ✓	- / ✓				
Process signal calibration	✓	✓			✓	

exida = FMEDA report

Of span = Of the presently selected range

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TYPE	5531A	5531B1	5714	5715	5725
	Loop-powered LCD indicator	Loop-powered LCD indicator in I.S. enclosure	Programmable LED indicator	Programmable LED indicator	Programmable frequency indicator
INPUT: RTD, TC, mV, mA, V, potentiometer, frequency, pulse **OUTPUT:** Display, mA, relays					
INPUT:					
mA, measurement range / min. span	3.6...23 mA / 16 mA	3.6...23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 16 mA	
V, measurement range / min. span			0...12 VDC / 0.8 V	0...12 VDC / 0.8 V	
Sensor type					All standard sensors
Hz, measurement range / min. span					0...50 kHz / 0.001 Hz
Min. pulse width					25 µs
RTD, measurement range / min. span			-200...+850°C	-200...+850°C	
Lin. R, measurement range / min. span			0...10000 Ω / -	0...10000 Ω / -	
Potentiometer			10 Ω...100 kΩ	10 Ω...100 kΩ	
Sensor connection, wires			2 - 3 - 4	2 - 3 - 4	
TC types			BEJKLNRSTUW3W5Lr	BEJKLNRSTUW3W5Lr	
Cold junction compensation			Internal	Internal	
Reference voltage / 2-wire supply			- / >15 VDC	- / >15 VDC	
Sensor supply					5...17 VDC
OUTPUT:					
Display, digit / type	4-digit / LCD	4-digit / LCD	4-digit / LED	4-digit / LED	4-digit / LED
Display, digit height	16 mm	16 mm	13.8 mm	13.8 mm	13.8 mm
mA, signal range / min. span			0...23 mA / 16 mA	0...23 mA / 16 mA	0...23 mA / 16 mA
Relay			2 x SPDT, AC: 500 VA	4 x SPDT, AC: 500 VA	2 x SPDT, AC: 500 VA
TECHNICAL SPECIFICATIONS:					
Ambient temperature	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C	-20...+60°C
Supply voltage, universal AC / DC	- / 1.5 VDC	- / 1.5 VDC	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V	21.6...253 V / 19.2...300 V
Max. required power	<35 mW	<35 mW	3.5 W	3.8 W	3.6 W
Isolation voltage, test / operation			2.3 kVAC / 250 VAC	2.3 kVAC / 250 VAC	2.3 kVAC / 250 VAC
Response time	< 1 s	< 1 s	< 400 ms / < 1 s	< 400 ms / < 1 s	1...60 s
Accuracy	≤ ±0.1% of span	≤ ±0.1% of span	≤ ±0.1% of reading	≤ ±0.1% of reading	≤ ±0.1% of reading
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	≤ ±0.01% of reading / °C	≤ ±0.01% of reading / °C	≤ ±0.01% of reading / °C
NAMUR			NE 43	NE 43	NE 43
Programming	Switch / front keys	Switch / front keys	Front keys	5909 / front keys	Front keys
APPROVALS:					
ATEX, Zone 2	✓	✓			
UL 508			✓	✓	✓
DNV-GL / EU-RO marine			✓ / ✓	✓	✓ / ✓
EAC	✓	✓	✓	✓	✓
APPLICATION GUIDE:					
mA / V / mV input	✓ / - / -	✓ / - / -	✓ / ✓ / -	✓ / ✓ / -	
Temperature input			✓	✓	
Lin. R / potentiometer input			✓ / ✓	✓ / ✓	
Frequency input					✓
Custom sensor linearization				✓	
4...20 mA Tx input			✓	✓	
Loop-powered	✓	✓			
mA output			✓	✓	✓
2 / 4 relay outputs			✓ / -	- / ✓	✓ / -
Process signal calibration	✓	✓	✓	✓	✓
Mounting in Zone 2	✓	✓			

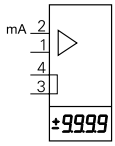
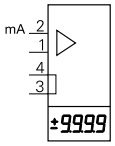
Of span = Of the presently selected range

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I.S. DISPLAYS



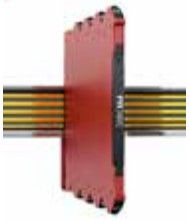


TYPE	5531B	5531B2				
	Loop-powered LCD indicator	Loop-powered LCD indicator in I.S. enclosure				
INPUT:						
mA						
OUTPUT:						
Display						
INPUT:						
mA, measurement range / min. span	3.6...23 mA / 16 mA	3.6...23 mA / 16 mA				
OUTPUT:						
Display, digit / type	4-digit / LCD	4-digit / LCD				
Display, digit height	16 mm	16 mm				
TECHNICAL SPECIFICATIONS:						
Ambient temperature	-20...+60°C	-20...+60°C				
Supply voltage, universal AC / DC	- / 1.5 VDC	- / 1.5 VDC				
Max. required power	<35 mW	<35 mW				
Isolation voltage, test / operation						
Response time	< 1 s	< 1 s				
Accuracy	≤ ±0.1% of span	≤ ±0.1% of span				
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C				
NAMUR						
Programming	Switch / front keys	Switch / front keys				
APPROVALS:						
ATEX	✓	✓				
DNV-GL						
EAC Ex	✓	✓				
APPLICATION GUIDE:						
Loop-powered	✓	✓				
Mounting in Zone 1 / 21	✓	✓				
Field enclosure		✓				

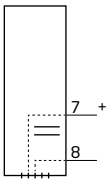
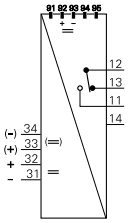
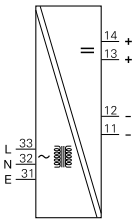
Of span = Of the presently selected range

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POWER SUPPLIES



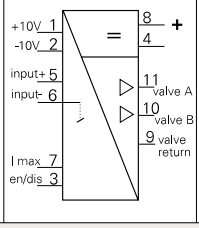
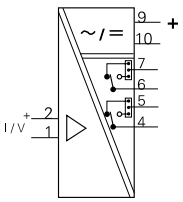
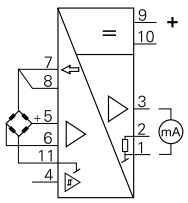


TYPE	3405	9410	9421			
	Power connector unit	Power control unit	Power supply			
INPUT: AC, DC voltage **OUTPUT:** Stabilized VDC						
INPUT:						
Supply voltage, AC			85...132 VAC or			
			187...264 VAC			
Supply voltage, DC	16.8...31.2 VDC	21.6...26.4 VDC				
Supply voltage, back-up		21.6...26.4 VDC				
OUTPUT:						
Voltage	16.8...31.2 VDC	21.6...26.4 VDC	24 VDC			
Current		4 ADC	4.8 ADC			
Power, max.		96 W	115 W			
Status relay		1 x SPDT, AC: 500 VA				
TECHNICAL SPECIFICATIONS:						
Ambient temperature	-25...+70°C	-20...+60°C	-20...+60°C			
Max. required power		96 W	< 135 W			
Isolation, test		2.6 kVAC	4.3 kVAC			
Short circuit protection	No	Yes	Yes			
Output ripple	Same as input	Same as input	200 mV peak / peak			
Channels	1	1	1			
Programming	No	No	No			
APPROVALS:						
ATEX, Zone 2	✓	✓	✓			
IECEx, Zone 2	✓	✓				
CSA, Zone 2 - DIV 2			✓			
FM, Zone 2 - DIV 2	✓	✓				
UL 61010 / 508	✓ / -	✓ / -	- / ✓			
DNV-GL	✓	✓				
EAC	✓	✓	✓			
INMETRO, Zone 2		✓				
SIL 2 Full Assessment IEC 61508						
APPLICATION GUIDE:						
115 / 230 VAC mains supply			✓			
24 VDC output			✓			
60 W power rail connector unit	✓					
96 W power rail connector unit		✓				
Redundancy power rail function		✓				
Collective status signal monitor		✓				
Internal fuse		✓	✓			
Mounting in Zone 2 / Div 2	✓	✓	✓			

SPECIAL PRODUCTS





TYPE	2224	2231	2261			
	Valve controller	Trip amplifier	mV transmitter			
INPUT, DC: mA, V, potentiometer, frequency, pulse, joystick, load cell, mV **INPUT, AC:** A, V **OUTPUT:** mA, V, relays						
INPUT:						
mA, DC measurement range / min. span	0...20 mA / 16 mA	0...20 mA / 10 mA				
V, DC measurement range / min. span	-10...+10 VDC / 0.8 VDC	0...250 VDC / 0.5 VDC	-40...+100 mV / 10 mV			
A, AC measurement range / min. span		0...1 ARMS / 0.5 ARMS				
V, AC measurement range / min. span		0...250 VRMS/0.5 VRMS				
Potentiometer	> 1 kΩ					
Digital input	3 x PNP		1 x NPN / 1 x PNP			
Max. offset	20% of selec. max. value		70% of selec. max. value			
Excitation / reference voltage	- / -10...+10 VDC		5...13 VDC / -			
OUTPUT:						
mA, signal range / min. span	3000 mA		0...20 mA / 5 mA			
V, signal range / min. span	Supply-0.5 VDC		0...10 VDC / 0.25 VDC			
Max. offset			50% of selec. max. value			
Relays		2 x SPST, AC: 500 VA				
Display, digit / type	3-digit / LED	3-digit / LED	3-digit / LED			
TECHNICAL SPECIFICATIONS:						
Ambient temperature	-20...+60°C	-20...+60°C	-20...+60°C			
Supply voltage, universal AC / DC		21.6...253V / 19.2...300V				
Supply voltage, DC	12 or 24 VDC	19.2...28.8 VDC	19.2...28.8 VDC			
Max. required power	2.2 W	1.5 W DC / 2 W, UNI	2.2 W / max. 7.2 W			
Isolation voltage, test / operation		3.75 kVAC / 250 VAC				
Response time	< 75 ms	250 ms...60 s	60 ms...999 s			
Signal dynamics, input / output	12 bit / -	16 bit / -	17 bit / 16 bit			
Setpoint adjustment / repetition		0.1% / 0.1%				
Delay / hysteresis		0...99.9 s / 0...99.9%				
Temperature coefficient	< ±0.01% of span / °C	< ±0.01% of span / °C	< ±0.01% of span / °C			
Channels	1 or 2 outputs	1 input, 2 relays	1			
Programming	Switch / front keys	Switch / front keys	Switch / front keys			

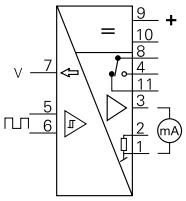
APPROVALS:						
DNV-GL		✓				
EAC	✓	✓	✓			

APPLICATION GUIDE:						
mA / V / mV input	✓/ ✓ / -	✓/ ✓ / -	- / - / ✓			
AC signal input		✓				
Digital ON/OFF signal input	✓		✓			
Controller / regulator function	✓	✓				
Load cell applications			✓			
Proportional valve applications	✓					
Frequency / pulse applications						
mA / V output			✓			
Relay output		✓				

Of span = Of the presently selected range

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TYPE	2255					
	f/I - f/f converter					
INPUT, DC: Frequency, pulse **INPUT, AC:** A, V **OUTPUT:** mA, V, relays, pulse						
INPUT: PV / SP						
A, AC measurement range / min. span						
V, AC measurement range / min. span						
Max. offset						
Sensor type	All standard sensors ⎍					
Hz, measurement range / min. span	0...20 kHz / 0.001 Hz					
Min. pulse width	25 µs					
Sensor supply	5...15 VDC					
OUTPUT:						
mA, signal range / min. span	0...20 mA / 5 mA					
V, signal range / min. span	0...10 VDC / 0.25 VDC					
Max. offset	50% of selec. max. value					
Load (@ current output)	≤ 600 Ω					
Pulse output	NPN					
Max. output frequency	1000 Hz					
Relays	1 x SPDT, AC: 300 VA					
Display, digit / type	3-digit / LED					
TECHNICAL SPECIFICATIONS:						
Ambient temperature	-20...+60°C					
Supply voltage, universal AC / DC						
Supply voltage, DC	19.2...28.8 VDC					
Max. required power	2.4 W					
Isolation voltage, test / operation	1.4 kVAC / 150 VAC					
Response time	60 ms...999 s					
Signal dynamics, input / output	- / 16 bit					
Accuracy						
Temperature coefficient	< ±0.01% of span / °C					
Channels	1					
Programming	Switch / front keys					

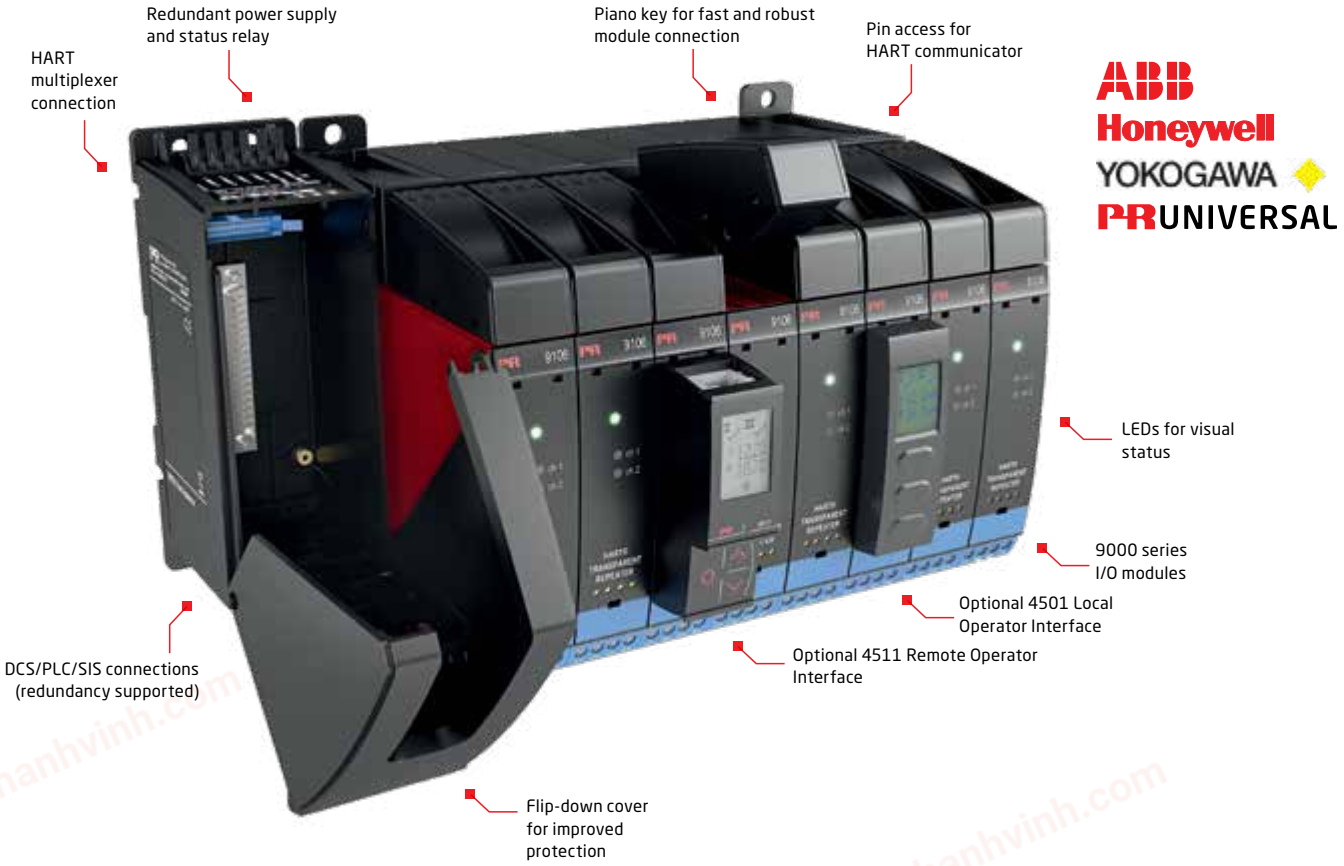
APPROVALS:						
EAC	✓					

APPLICATION GUIDE:						
Frequency / pulse applications	✓					
mA / V output	✓					
Relay output	✓					

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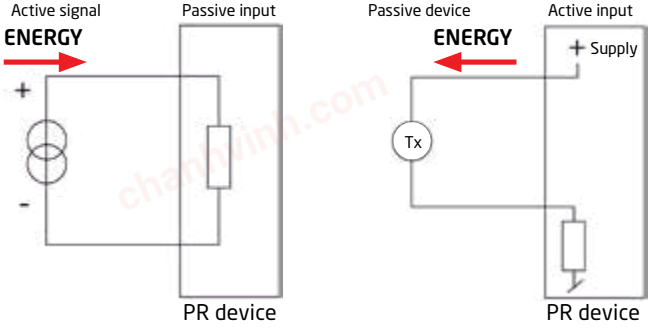
BACKPLANE

A user-friendly and reliable mounting solution between *the DCS/PLC/SIS system and isolators/I.S. interfaces*

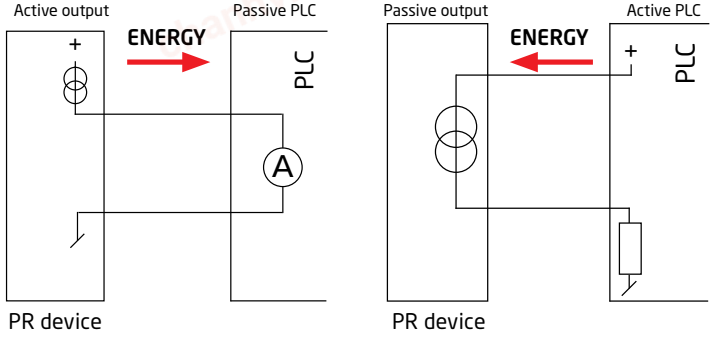


SIGNAL TYPES

INPUT



OUTPUT



PROGRAMMING UNITS

4501

Display / programming front



4511

Modbus communication enabler



4512

Bluetooth communication enabler

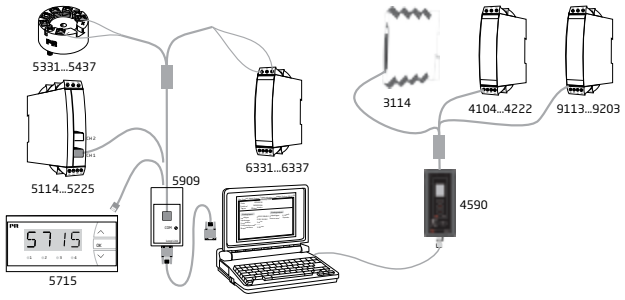


4590

ConfigMate



SOFTWARE



PReset
PReset is an easy-to-use menu-driven software program for set-up of PR products via a standard PC and a programming interface. PReset gives a high degree of flexibility for each product and when the menus are completed, the data is transmitted to the unit which is then ready for operation.

Loop Link 5909
Loop Link 5909 is a USB communications interface for configuration and monitoring of PR electronics' PC-programmable devices. PR devices available in the configuration program PReset ver. 5.0 or higher, can be programmed by way of Loop Link 5909.

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276USB
Viator USB HART modem



3400T
Electromechanical counter



4801
Modbus gateway



4802
Modbus RTU/Profinet Gateway



5909
Loop Link communications interface



5910
CJC connector, channel 1



5910Ex
CJC connector for I.S. / Ex devices, channel 1



5913
CJC connector, channel 2



5913Ex
CJC connector for I.S. / Ex devices, channel 2



7002
Spring clip



7005
Shunt resistor 0.1 Ω



7006
Shunt resistor 1 Ω



7007
2-digit digital potentiometer



7008
3-digit digital potentiometer



7009
10-turn potentiometer, 200 Ω



7010
10-turn potentiometer, 20 kΩ



7011
Dial for 10-turn potentiometer



7012
1-turn potentiometer, 1 kΩ



7014
Shunt resistor 0.5 Ω



7015
1-turn potentiometer, 10 kΩ



7016
1-turn potentiometer, 100 kΩ



7020
Knob for 1-turn potentiometer



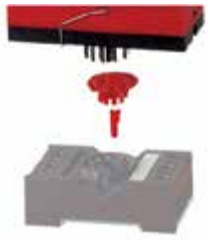
7020A
Knob for 10-turn potentiometer



7023
11-pole relay socket



7024
Code ring and code pin



7028
10-turn potentiometer, 2 kΩ



7029
Shunt resistor 0.2 Ω



7030
Shunt resistor 0.1 Ωfor DIN rail mounting



7031
Label sheet with engineering units



7400
Pt100 temperature sensor



7410C
Pt100 temperature sensor



7423
Ceramic socket for Pt100 sensor



7430B
Pt100 cable sensor, Ø6 x 60 mm



7430C
Pt100 cable sensor, Ø5 x 20 mm



7440
Thermowell for 7400 Pt100 sensor



8201L
Power wire, supply pin 31+33, left



8201R
Power wire, supply pin 31+33, right



8202L
Power wire, supply pin 31+32, left



8202R
Power wire, supply pin 31+32, right



8335
Splash-proof cover



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8341
Inductive proximity sensor, NAMUR



8342
Inductive proximity sensor, NAMUR



8343
Inductive proximity sensor, NPN



8344
Inductive proximity sensor, NPN



8421
DIN rail fitting



8501
Field enclosure



8509
M12 interface cable for 5909 Loop Link



8510
8 unit 4511 Modbus cable



8511
4511 Y-splitter Modbus cable



8513
RJ45 Modbus termination



8514
3 X RJ45 female Y-splitter



8515
RJ45 female to female cable adapter



8516
RJ45 female to female shielded cable adapter



8517
3 x RJ45 female shielded Y-splitter



8550
7501 M20 plug with silicone O-ring for alu enclosure



8550-F
7501 M20 plug with FKM O-ring for alu enclosure



8550-S
7501 M20 plug with silicone O-ring for stainless steel enclosure



8550-SF
7501 M20 plug with FKM O-ring for stainless steel enclosure



8551
7501 ½NPT plug for alu enclosure



8551-S
7501 ½NPT plug for stainless steel enclosure



8552

Pipe-mounting bracket for 7501



8555

Display with LOI for 7501



8556

Display without LOI for 7501



8557

Bracket spare part for display and transmitter (for 7501)



8558

Bracket spare part for transmitter only (for 7501)



9400_1

Power rail 15 mm profile



9400_2

Power rail 7.5 mm profile



9402

Extra end covers for power rail



9404

Module stop for rail



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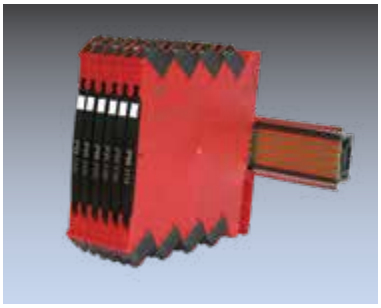
POWER RAIL

The data sheet specifies the maximum required power at nominal operating values, e.g. 24 V supply voltage, 60°C ambient temperature, 600 Ω load, and 20 mA output current.
In typical applications, the devices are not running at worst-case conditions, specifically when many devices are located together. For engineering purposes, 70% (P70%) of maximum required power is often used.

3000 power rail
The number of 3000 devices that can be powered from different power sources is listed in the table below:

	Using a PR converter device as power feed-in	3405 power feed-in	9410 power feed-in
P70%	Up to 25 devices	Up to 160 devices	Up to 250 devices
P100%	Up to 18 devices	Up to 115 devices	Up to 184 devices

The devices can be stacked vertically or horizontally.



9000 power rail
The number of 9000 devices that can be powered from the 9400 power sources is listed in the table below:

	9410 power feed-in
P70%	Up to 150 devices
P100%	Up to 120 devices



ENVIRONMENTAL SPECIFICATIONS

	PR 2200 series	PR 3000 series	PR 4000 series	PR 5000 series	PR 5300 series
Specifications range	-20°C to +60°C	-25°C to +70°C (3105: 0°C to +70°C)	-20°C to +60°C	-20°C to +60°C	-40°C to +85°C
Relative humidity	< 95% RH (non-cond.)	< 95% RH (non-cond.)	< 95% RH (non-cond.)	< 95% RH (non-cond.)	< 95% RH (non-cond.)
Protection degree	IP50	IP20	IP20	IP20	IP68 / IP00

	PR 5400 series	PR 5500 / 5700 series	PR 6300 series	PR 7500 series	PR 9000 series
Specifications range	-50°C to +85°C	-20°C to +60°C	-40°C to +85°C	-20 / -40°C to +85°C	-20°C to +60°C
Relative humidity	< 99% RH (non-cond.)	< 95% RH (non-cond.)	< 95% RH (non-cond.)	0...100% RH (cond.)	< 95% RH (non-cond.)
Protection degree	IP68 / IP00	IP65 from front (5500) IP65 / Type 4X, UL50E	IP20	IP54 / IP66 / IP68 / type 4X	IP20

ENCLOSURE SPECIFICATIONS

Dimensions (mm)	Height	Width	Depth	Panel cut-out	Material
PR 2200 series	80.5	35.5	84.5+socket		Cycoloy/Noryl
PR 3000 series	113	6.1	115		Cycoloy
PR 4000 / 6000 / 9000 series	109	23.5	104		Cycoloy
PR 5000 series	109	23.5	130		Cycoloy
PR 5300 series	20.2	Ø44			Cycoloy
PR 5400 series	20.2	Ø44			Cycoloy
PR 5500 /5700 series	48	96	120	44.5 x 91.5	Noryl
PR 7500 series	109	145	125.5		Aluminum

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PERFORMANCE MADE SMARTER

PR electronics is the leading technology company specialized in making industrial process control safer, more reliable and more efficient. Since 1974, we have been dedicated to perfecting our core competence of innovating high precision technology with low power consumption. This dedication continues to set new standards for products communicating, monitoring and connecting our customers' process measurement points to their process control systems.

Our innovative, patented technologies are derived from our expansive R&D facilities and from having a great understanding of our customers' needs and processes. We are guided by principles of simplicity, focus, courage and excellence, enabling some of the world's greatest companies to achieve PERFORMANCE MADE SMARTER.

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