

# Electronics

## Analogue Signal Conditioning

Catalogue

## Electronics – Analogue Signal Conditioning

Product overview – Analogue Signal Conditioning

Intrinsically safe signal conditioners for hazardous area applications

Signal converters and monitoring components

Trip amplifier for monitoring AC/DC circuits

Signal converters and monitoring components in 6 mm width

Process monitoring

Indicators and configurable displays

Interface converter, AD/DA converter

Analogue Signal Conditioning Accessories

Fieldbus distributor

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## Appendix

Weidmüller Service

Technical appendix/Glossary

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# Electronics – Analogue Signal Conditioning

## Intrinsically safe signal converters – ACT20X Page B.4



- Analogue and binary signal interfaces to Ex Zone 0 / Division 1
- FDT/DTM software configurable
- 2 channel modules in 22.5 mm housing

## Signal converters and monitoring components – ACT20P Page C.4



- Strain gauge transmitter for reading from load cells
- High levels of galvanic isolation and accuracy
- On-site calibration and TARE adjustment

## Signal converters and monitoring components – WAVE TTA Page C.10



- Signal converter and trip amplifier in a single device
- Flexible software configuration
- AC and DC wide-range power supply

## Signal converters and monitoring components – WAVE Page C.14



- A large selection of standard signal- and measurement isolators
- Simple to install and mounting on DIN-rails
- High level of galvanic isolation

## Trip amplifiers for monitoring – WAVE Page D.2



- Monitoring DC and AC currents and voltages
- Current/voltage ranges and switching points can be set manually.
- Pluggable units for monitoring current – on DIN rail base

## Signal converters and monitoring components, 6 mm – MICRO Page E.4



- Signal converters with galvanic isolation in slim design
- All-purpose 3-way isolator, supply isolator and temperature-measurement converter
- Easy to wire with MICROINTERFACE

## Signal converter and monitoring components, 6 mm – MCZ Page E.18



- Signal converter in terminal format
- Passive isolator, temperature/frequency converter and threshold monitoring
- Simple wiring with pluggable cross-connection channels

## Process monitoring – with display function Page F.4



- Monitoring for a variety of sensor types
- Two alarm channels with status displays
- Universally scalable, four-character LED display

## Process monitoring – with no display function Page F.24



- Monitoring for a variety of sensor types
- Two alarm channels with LED status displays
- Front-side setpoint adjustments

**LED displays with extended functionality**

Page G.4



- Large four-character LED display
- 1/8"-DIN-standard front-panel with IP65 protection
- Integrated signal converter and trip amplifier

**LCD displays**

Page G.20



- Large 3.5-character LCD display
- 1/8"-DIN-standard front-panel with IP65 protection
- Power supply via 4 – 20 mA current loop

**Interface converters**

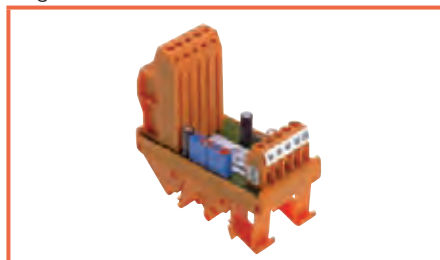
Page H.4



- RS232/ RS485/ TTY interface converter in WAVE housing
- RS-232 connection with SUB-D connector
- Bi-direction communication enabled

**AD/DA converter**

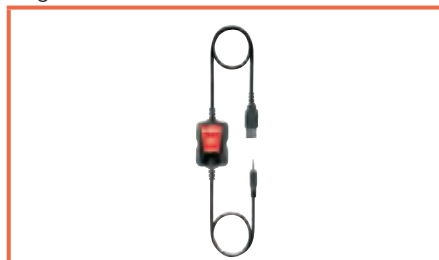
Page H.6



- 8-bit AD and DA converter
- Hold function for saving the current bit combination
- Mounting on DIN-rail

**Configuration adapter**

Page I.4



- USB interface adapter for configuring signal converters
- Compatible with ACT20X, WAVE TTA and ITX+ modules
- Simple installation with plug-in connector

**Calibration device**

Page I.6



- Measures and simulates voltage and current signals
- Adjustable continuous level and ramping functions
- Easy to adjust with buttons on front

**Markers and cross-connectors**

Page I.11



- Suitable MultiCard markers for all modules
- Pluggable cross-connectors for WAVE, MCZ and MICROSERIES

**Fieldbus distributor for the non-EX zone**

Page J.6



- Distributor for PROFIBUS-DP/-PA
- Optional surge protection and current limiting
- Versions with 1, 2, 4 and 8 connection for field devices

**Fieldbus distributor for the EX zone**

Page J.26



- Distributor for PROFIBUS-PA
- Versions with 1, 2, 4 and 8 connection for field devices
- External terminating resistor



# Product overview – Analogue Signal Conditioning

<b>Product overview – Analogue Signal Conditioning</b>	Introduction	A.2
	Quick select – Analogue Signal Conditioning	A.4

# Analogue Signal Conditioning questionnaire

## A

## Where...are analogue conditioners used?

In all types of electronic industrial and marine measurement and control systems – for example in processes such as power plants, steelworks, water and waste plant, oil and gas production and chemical processing. In fact, wherever temperature, pressure, level, flow, weight, speed etc is measured and controlled as part of a continuous or batch production process. Such measurement parameters – after being accurately produced – must not be degraded on their way from the field to the control room, despite external influences from the atmosphere and installation. Conversion or changes to these signals requires electronics of the highest quality, which can also withstand wide ambient temperature changes, electro-magnet interference, a vibrating environment, corrosive or hazardous atmospheres.

## What...functions do analogue conditioners provide?

One or more of the following:

- 1) Isolation of high level DC measurement and control signals. (Why do we need isolation? – see the notes that follow later in this brochure.)
- 2) Conversion of high level signals, such as 0...5 V input to 4...20 mA output
- 3) Amplify, linearise and transmit low level sensor inputs, such as millivolts from thermocouples, into high level DC outputs to enable transmission over distances 100 m or more.
- 4) Initiate status indications and alarms by creating relay contact closure outputs from analogue inputs.



**Why...do we need separate analogue module nowadays?  
Surely the control system (PLC or DCS) can perform the  
same functions?**

- 1) Sometimes this is true, but look at where the cabling from the field devices (transmitters, sensors, valves and actuators) needs to go. It will usually go not just straight to the control system. Many signals are also passed to local indicators and alarms, and each will need isolating from the others.
- 2) Often sensors - like thermocouples for temperature – need isolating, converting and linearising locally to a standardised high level signal (e.g. 4...20 mA) for long distance transmission – instead of running expensive compensation cable to the control system.
- 3) Where the control system has no isolated analogue inputs, a separate isolator will often be needed.
- 4) Where the control system cannot provide power for the sensor / transmitter and it is convenient to do this from an isolating module.
- 5) Where a high integrity, dedicated display is required, separate from the control system display, and the input needs splitting.
- 6) Where local linearisation is needed for a plant operator – for example where a liquid volume indicator is needed for filling a bulk storage tank, but the measurement is level (level to volume conversion depends on the shape of the tank).
- 7) Where the control system only takes 4...20 mA analogue inputs and the sensors provide other less common ranges, such as 0...20 mV, 2...10 V, 0...10 k $\Omega$ , 0...1mA, 4...12 kHz, 0...5 A AC etc
- 8) Where the control system needs to be protected from electrical noise pulses on its analogue inputs
- 9) Where expansion of the analogue inputs would mean an expensive new I/O board for the control system

**How...can I select the right product for my application?**

- 1) Weidmüller has a formidable range of analogue conditioners, covering most application requirements, and our range is expanding. We also have some useful tools for selection and configuration.
- 2) If you cannot find a suitable product for your application, it doesn't mean we don't have one! Tell us your requirement, and if we can't provide a solution from our current range of products, there may be a customized version that we could create for you.



# Quick select – Analogue Signal Conditioning

**A**
**Selection table**

Order No.	Product	Input									Miscellaneous	Sensor feed	Width
		Amount	0...20 mA	4...20 mA	0...10 V	0...5 V	TC	RTD	Frequency				
<b>Standard-signal isolator</b>													
8540180000	WAS5 CCC 0-20/0-20mA	1	X										17.5 mm
8540190000	WAZ5 CCC 0-20/0-20mA	1	X										17.5 mm
8540270000	WAS5 CVC 0-20mA/0-10V	1	X										17.5 mm
8540200000	WAS5 CCC 4-20/0-20MA	1		X									17.5 mm
8540250000	WAS5 CCC 0-20/4-20mA	1	X										17.5 mm
8540230000	WAS5 CVC 4-20mA/0-10V	1		X									17.5 mm
8447160000	WAS5 CCC HF 0-20/0-20MA	1	X										17.5 mm
8447170000	WAZ5 CCC HF 0-20/0-20MA	1	X										17.5 mm
8447250000	WAS5 CCC HF 4-20/0-20MA	1		X									17.5 mm
8447220000	WAS5 CVC HF 0-20/0-10V	1	X										17.5 mm
8447280000	WAS5 CVC HF 4-20/0-10V	1		X									17.5 mm
8444980000	WAS4 CCC DC 4-20/4-20MA	1		X									12.5 mm
8444990000	WAZ4 CCC DC 4-20/4-20MA	1		X									12.5 mm
8445010000	WAS4 CCC DC 4-20/0-20MA	1		X									12.5 mm
8445040000	WAS4 CVC DC 4-20/0-10V	1		X									12.5 mm
8445050000	WAZ4 CVC DC 4-20/0-10V	1		X									12.5 mm
8721150000	MAS RPS	1		X								X	6.1 mm
8721170000	MAS RPSH	1		X								X	6.1 mm
8540310000	WAS5 VCC 0-10V/0-20MA	1			X								17.5 mm
8540320000	WAZ5 VCC 0-10V/0-20MA	1			X								17.5 mm
8540290000	WAS5 VCC 0-10V/4-20MA	1			X								17.5 mm
8540300000	WAZ5 VCC 0-10V/4-20MA	1			X								17.5 mm
8540330000	WAS5 VVC 0-10V/0-10V	1			X								17.5 mm
8540340000	WAZ5 VVC 0-10V/0-10V	1			X								17.5 mm
8561610000	WAS5 VVC HF +/-10V/+10V	1									-10...+10 V		17.5 mm
8447310000	WAS5 VCC HF 0-10/0-20MA	1			X								17.5 mm
8447340000	WAS5 VCC HF 0-10/4-20MA	1			X								17.5 mm
8447370000	WAS5 VVC HF 0-10/0-10V	1			X								17.5 mm
8447380000	WAZ5 VVC HF 0-10/0-10V	1			X								17.5 mm
8411190000	MCZ CCC 0-20mA/0-20mA	1	X										6 mm
8444950000	WAS5 CCC LP 0-20/0-20mA	1	X										17.5 mm
8444960000	WAZ5 CCC LP 0-20/0-20mA	1	X										17.5 mm
8463580000	WAS5 CCC LP 0-20/0-20mA	2	X										17.5 mm
8463590000	WAZ5 CCC LP 0-20/0-20mA	2	X										17.5 mm
8543720000	WAS5 OLP	1	X	X	X	X							17.5 mm
8543730000	WAZ5 OLP	1	X	X	X	X							17.5 mm
7940024139	WAVEPak DC/DC	1	X		X							X	12.5 mm
8594810000	MAS DC/DC select	1	X	X	X								6.1 mm
8594840000	MAZ DC/DC select	1	X	X	X								6.1 mm
8757530000	MAS DC/DC select HI	1	X	X	X								6.1 mm
<b>Universal isolator</b>													
8560750000	WAZ4 PRO DC/DC	1	X	X	X						User adjustable: +/-20 mV...+/-200 V +/-0.1 mA...+/-200 mA		12.5 mm
8560740000	WAS4 PRO DC/DC	1	X	X	X								12.5 mm
7940010489	CLCAR	2									User adjustable: -24...24 mA -12...12 V		46 mm
7940010195	UCVAR	2									User adjustable: -55...55 mA -55...55 V		46 mm
<b>Standard-signal duplicator</b>													
8581160000	WAS5 CCC 2OLP	1		X									17.5 mm
8581170000	WAZ5 CCC 2OLP	1		X									17.5 mm

Amount	Output				Miscellaneous	Configuration	Auxiliary power	Rated voltage	Isolation	Connection system	Special characteristics	Page
	0...20 mA	4...20 mA	0...10 V	Relay								
1	X						24 V DC	300 V	3-way	S		C.22
1	X						24 V DC	300 V	3-way	Z		C.22
1			X				24 V DC	300 V	3-way	S		C.23
1	X						24 V DC	300 V	3-way	S		C.24
1		X					24 V DC	300 V	3-way	S		C.22
1			X				24 V DC	300 V	3-way	S		C.24
1	X						24 V DC	300 V	3-way	S	Limiting frequency > 15 kHz	C.18
1	X						24 V DC	300 V	3-way	Z	Limiting frequency > 15 kHz	C.18
1	X						24 V DC	300 V	3-way	S	Limiting frequency > 15 kHz	C.19
1			X				24 V DC	300 V	3-way	S	Limiting frequency > 15 kHz	C.18
1			X				24 V DC	300 V	3-way	S	Limiting frequency > 15 kHz	C.19
1		X					24 V DC	300 V	2-way	S	Output-side power supply	C.28
1		X					24 V DC	300 V	2-way	Z	Output-side power supply	C.28
1	X						24 V DC	300 V	2-way	S	Output-side power supply	C.28
1			X				24 V DC	300 V	2-way	S	Dual-side power supply	C.29
1			X				24 V DC	300 V	2-way	Z	Dual-side power supply	C.29
1		X					24 V DC	300 V	3-way	S		E.9
1		X					24 V DC	600 V	3-way	S	HART® transparent	E.8
1	X						24 V DC	300 V	3-way	S		C.25
1	X						24 V DC	300 V	3-way	Z		C.25
1		X					24 V DC	300 V	3-way	S		C.25
1		X					24 V DC	300 V	3-way	Z		C.25
1			X				24 V DC	300 V	3-way	S		C.26
1			X				24 V DC	300 V	3-way	Z		C.26
1					-10...+10 V		24 V DC	300 V	3-way	S	Limiting frequency > 15 kHz	C.21
1	X						24 V DC	300 V	3-way	S	Limiting frequency > 15 kHz	C.20
1		X					24 V DC	300 V	3-way	S	Limiting frequency > 15 kHz	C.20
1			X				24 V DC	300 V	3-way	S	Limiting frequency > 15 kHz	C.21
1			X				24 V DC	300 V	3-way	S	Limiting frequency > 15 kHz	C.21
1	X							100 V	2-way	Z	Passive isolator ILP	E.20
1	X							300 V	2-way	S	Passive isolator ILP	C.33
1	X							300 V	2-way	Z	Passive isolator ILP	C.33
2	X							300 V	2-way	S	Passive isolator ILP	C.33
2	X							300 V	2-way	Z	Passive isolator ILP	C.33
1		X				DIP switch		300 V	2-way	S	Passive isolator OLP	C.32
1		X				DIP switch		300 V	2-way	Z	Passive isolator OLP	C.32
1	X		X			Pluggable bridge	24 V DC	300 V	3-way	S		C.17
1	X	X	X			DIP switch	24 V DC	50 V	3-way	S		E.7
1	X	X	X			DIP switch	24 V DC	50 V	3-way	Z		E.7
1	X	X	X			DIP switch	24 V DC	300 V	3-way	S		E.6

1	X	X	X		Adjustable: 0/2...+/-10 V	DIP switch	22...230 V AC/DC	600 V	3-way	Z		C.16
1	X	X	X		0/1...+/-5 V 0...+/-20 mA	DIP switch	22...230 V AC/DC	600 V	3-way	S		C.16
3	X		X	X	With display	Button	24 V DC	300 V	3-way	S	With alarm output	F.10
3	X		X	X	With display	Button	24 V DC	300 V	3-way	S	With alarm output	F.6

2		X						300 V	2-way	S	Passive isolator OLP	C.30
2		X						300 V	2-way	Z	Passive isolator OLP	C.30

Connection system: S = screw / Z = tension clamp, ILP = Input Loop Powered, OLP = Output Loop Powered

# Quick select – Analogue Signal Conditioning

**A**
**Selection table**

Order No.	Product	Input									Miscellaneous	Sensor feed	Width
		Amount	0...20 mA	4...20 mA	0...10 V	0...5 V	TC	RTD	Frequency				
<b>Universal measuring transducer</b>													
8939670000	WAS6 TTA	1	X	X	X	X	X	X	X	X	User adjustable: -200...500 mV -20...50 V 2 Hz...100 kHz RTD, TC, Resistance, potentiometer	X	45 mm
8939680000	WAZ6 TTA	1	X	X	X	X	X	X	X	X		X	45 mm
8964310000	WAS6 TTA EX	1	X	X	X	X	X	X	X	X		X	45 mm
8964320000	WAZ6 TTA EX	1	X	X	X	X	X	X	X	X		X	45 mm
7940016563	ITX+ 4-20mA/4-20mA	1	X	X	X	X					User adjustable: -5...+10 V -100...+200 mV -10...+20 mA		12.5 mm
<b>Frequency measuring transducer</b>													
8581180000	WAS4 PRO Freq	1								X	2-, 3-wire PNP/NPN, Namur initiator, push-pull step		12.5 mm
8581190000	WAZ4 PRO Freq	1								X			12.5 mm
8461480000	MCZ CFC 0-20MA	1	X										6 mm
8461470000	MCZ VFC 0-10V	1			X								6 mm
7940015988	UPIP	2									User adjustable: -55...55 mA -55...55 V		46 mm
7940010908	UPIR	2									User adjustable: -55...55 mA -55...55 V		46 mm
<b>Strain gauge transmitter</b>													
1067250000	ACT20P-BRIDGE-S	1									Adjustable: +/-10 mV...+/- 50 mV		22.5 mm
<b>AC/DC measuring transducer</b>													
8581220000	WAS2 VMA V ac	1									Adjustable: 0...450 V AC		22.5 mm
8581230000	WAZ2 VMA V ac	1											22.5 mm
8528650000	WAS1 CMA LP 1/5/10A ac	1									Adjustable: 0...10 A AC		22.5 mm
8528660000	WAZ1 CMA LP 1/5/10A ac	1											22.5 mm
8523400000	WAS1 CMA 1/5/10A ac	1									Adjustable: 0...10 A AC		22.5 mm
8523410000	WAZ1 CMA 1/5/10A ac	1											22.5 mm
8526610000	WAS2 CMA 5/10A uc	1									Adjustable: 0...10 A AC/DC		22.5 mm
8526620000	WAZ2 CMA 5/10A uc	1											22.5 mm
8545830000	WAS2 CMA 20/25/30A uc	1									Adjustable: 0...30 A AC/DC		22.5 mm
8545840000	WAZ2 CMA 20/25/30A uc	1											22.5 mm
8513330000	WAS2 CMA 40/50/60A uc	1									Adjustable: 0...60 A AC/DC		22.5 mm
8526590000	WAZ2 CMA 40/50/60A uc	1											22.5 mm
7940010232	CNDAR	2									User adjustable: 0...20 mS 0...200 °C		46 mm
7940010184	UHZAR	1								X	User adjustable: 0...10 kHz 50 mV...250 V AC/DC		46 mm
<b>Temperature measuring transducer</b>													
8560720000	WAS5 PRO Thermo	1						X					17.5 mm
8560730000	WAZ5 PRO Thermo	1						X					17.5 mm
8432300000	WTS4 THERMO	1						X					12.5 mm
8432310000	WTZ4 THERMO	1						X					12.5 mm
8615240000	MAZ Thermo-J 0...700°C Output select	1						X					6.1 mm
8594830000	MAS Thermo-K 0...1000°C Output select	1						X					6.1 mm
8615210000	MAS Thermo-J 0...700°C Output select	1						X					6.1 mm
8594860000	MAZ Thermo-K 0...1000°C Output select	1						X					6.1 mm
8594820000	MAS PT100 0...100C	1							X				6.1 mm
8594850000	MAZ PT100 0...100C	1							X				6.1 mm
8560700000	WAS5 PRO RTD	1							X				17.5 mm
8560710000	WAZ5 PRO RTD	1							X				17.5 mm
8679490000	WAS5 PRO RTD 1000	1							X				17.5 mm

Amount	Output					Miscellaneous	Configuration	Auxiliary power	Rated voltage	Isolation	Connection system	Special characteristics	Page
	0...20 mA	4...20 mA	0...10 V	Relay									
3	X	X	X	X	X	1 analogue output, 2 relay outputs	Software	18...264 V AC/DC	300 V	3-way	S		C.12
3	X	X	X	X	300 V				3-way	Z		C.12	
3	X	X	X	X	300 V				3-way	S	With ATEX approval	C.13	
3	X	X	X	X	300 V				3-way	Z	With ATEX approval	C.13	
1		X				Software		300 V	2-way	S	Passive isolator OLP	C.15	
1	X	X	X			0...5 V	DIP switch	24 V DC	300 V	3-way	S		C.43
1	X	X	X			0...5 V	DIP switch	24 V DC	300 V	3-way	Z		C.43
1						Frequency: 0...1/ 4/ 8/ 16 kHz		24 V DC	100 V	2-way	Z	Frequency output	E.22
1						Frequency: 0...1/ 4/ 8/ 16 kHz		24 V DC	100 V	2-way	Z	Frequency output	E.22
1						Frequency-controlled relay output up to 25 Hz	Button	24 V DC	300 V	3-way	S		F.15
1						Frequency-controlled transistor output up to 999.9 Hz	Button	24 V DC	300 V	3-way	S	With alarm output	F.14
1	X			X				10...60 V DC	300 V	3-way	S		C.7
1	X	X					DIP switch	24 V DC	300 V	3-way	S		C.50
1	X	X					DIP switch	24 V DC	300 V	3-way	Z		C.50
1		X					DIP switch		300 V	2-way	S	Passive converter OLP	C.46
1		X					DIP switch		300 V	2-way	Z	Passive converter OLP	C.46
1	X	X					DIP switch	24 V DC	300 V	2-way	S	Output-side power supply	C.46
1	X	X					DIP switch	24 V DC	300 V	2-way	Z		C.46
1	X	X	X				DIP switch	24 V DC	300 V	2-way	S	Input-side power supply	C.44
1	X	X	X				DIP switch	24 V DC	300 V	2-way	Z		C.44
1	X	X	X				DIP switch	24 V DC	300 V	2-way	S	Input-side power supply	C.44
1	X	X	X				DIP switch	24 V DC	300 V	2-way	Z		C.44
1	X	X	X				DIP switch	24 V DC	300 V	2-way	S	Input-side power supply	C.45
1	X	X	X				DIP switch	24 V DC	300 V	2-way	Z		C.45
3	X			X	X	With display	Button	24 V DC	300 V	3-way	S	Conductivity measurement with alarm output	F.9
3	X			X	X	With display	Button	24 V DC	300 V	3-way	S	Frequency measurement with alarm output	F.11
1		X					DIP switch	24 V DC	300 V	3-way	S		C.40
1		X					DIP switch	24 V DC	300 V	3-way	Z		C.40
1	X	X	X				DIP switch	24 V DC			S		C.41
1	X	X	X				DIP switch	24 V DC			Z		C.41
1	X	X	X			0...5 V	DIP switch	24 V DC	100 V	2-way	Z		E.14
1	X	X	X			0...5 V	DIP switch	24 V DC	100 V	2-way	S		E.12
1	X	X	X			0...5 V	DIP switch	24 V DC	100 V	2-way	S		E.14
1	X	X	X			0...5 V	DIP switch	24 V DC	100 V	2-way	Z		E.12
1	X	X	X			0...5 V	DIP switch	24 V DC	100 V	2-way	S		E.10
1	X	X	X			0...5 V	DIP switch	24 V DC	100 V	2-way	Z		E.10
1	X	X	X				DIP switch	24 V DC	300 V	3-way	S		C.34
1	X	X	X				DIP switch	24 V DC	300 V	3-way	Z		C.34
1	X	X	X				DIP switch	24 V DC	300 V	3-way	S		C.34

Connection system: S = screw / Z = tension clamp, ILP = Input Loop Powered, OLP = Output Loop Powered

# Quick select – Analogue Signal Conditioning

**A**
**Selection table**

Order No.	Product	Input									Miscellaneous	Sensor feed	Width
		Amount	0...20 mA	4...20 mA	0...10 V	0...5 V	TC	RTD	Frequency				
<b>Temperature measuring transducer</b>													
8638950000	WAS5 PRO RTD Cu	1						X				17.5 mm	
8432210000	WTS4 PT100/2 C 0/4-20mA	1						X				12.5 mm	
8432220000	WTZ4 PT100/2 C 0/4-20mA	1						X				12.5 mm	
8432150000	WTS4 PT100/3 C 0/4-20mA	1						X				12.5 mm	
8432160000	WTZ4 PT100/3 C 0/4-20mA	1						X				12.5 mm	
8432270000	WTS4 PT100/4 C 0/4-20mA	1						X				12.5 mm	
8432280000	WTZ4 PT100/4 C 0/4-20mA	1						X				12.5 mm	
8432219999	WTS4 PT100/2 C 0/4-20mA variabel	1						X				12.5 mm	
8432229999	WTZ4 PT100/2 C 0/4-20mA variabel	1						X				12.5 mm	
8432159999	WTS4 PT100/3 C 0/4-20mA variabel	1						X				12.5 mm	
8432169999	WTZ4 PT100/3 C 0/4-20mA variabel	1						X				12.5 mm	
8432279999	WTS4 PT100/4 C 0/4-20mA variabel	1						X				12.5 mm	
8432289999	WTZ4 PT100/4 C 0/4-20mA variabel	1						X				12.5 mm	
8432270011	WTS4 PT100/4 C 4-20mA 0...100C	1						X				12.5 mm	
8432210011	WTS4 PT100/2 C 4-20mA 0...100C	1						X				12.5 mm	
8432240000	WTS4 PT100/4 V 0-10V	1						X				12.5 mm	
8432180000	WTS4 PT100/2 V 0-10V	1						X				12.5 mm	
8432090000	WTS4 PT100/3 V 0-10V	1						X				12.5 mm	
8432250000	WTZ4 PT100/4 V 0-10V	1						X				12.5 mm	
8432190000	WTZ4 PT100/2 V 0-10V	1						X				12.5 mm	
8432130000	WTZ4 PT100/3 V 0-10V	1						X				12.5 mm	
8432249999	WTS4 PT100/4 V 0-10V variabel	1						X				12.5 mm	
8432189999	WTS4 PT100/2 V 0-10V variabel	1						X				12.5 mm	
8432099999	WTS4 PT100/3 V 0-10V variabel	1						X				12.5 mm	
8432259999	WTZ4 PT100/4 V 0-10V variabel	1						X				12.5 mm	
8432199999	WTZ4 PT100/2 V 0-10V variabel	1						X				12.5 mm	
8432139999	WTZ4 PT100/3 V 0-10V variabel	1						X				12.5 mm	
8432180001	WTS4 PT100/2 V 0-10V 0...100C	1						X				12.5 mm	
8432090001	WTS4 PT100/3 V 0-10V 0...100C	1						X				12.5 mm	
8432240001	WTS4 PT100/4 V 0-10V 0...100C	1						X				12.5 mm	
8425720000	MCZ PT100/3 CLP 0...100C	1						X				6 mm	
8483680000	MCZ PT100/3 CLP 0...120C	1						X				6 mm	
8604420000	MCZ PT100/3 CLP 0...150C	1						X				6 mm	
8473010000	MCZ PT100/3 CLP 0...200C	1						X				6 mm	
8473020000	MCZ PT100/3 CLP 0...300C	1						X				6 mm	
8473000000	MCZ PT100/3 CLP -50C...+150C	1						X				6 mm	
8604430000	MCZ PT100/3 CLP -40C...100C	1						X				6 mm	
7940012190	UTCAR	1					X					46 mm	
7940010250	URTAR	1						X				46 mm	
<b>Monitoring modules</b>													
8260280000	MCZ SC 0-10V	1			X							6 mm	
8227350000	MCZ SC 0-20MA	1	X									6 mm	
8543820000	WAS5 DC/Alarm	1	X	X	X							17.5 mm	
8543880000	WAZ5 DC/Alarm	1	X	X	X							17.5 mm	
8705640000	WAS5 VMR 1ph	1								Adjustable: 24...260 V AC/DC 1-phase reset input		17.5 mm	
8705630000	WAS2 VMR 3ph	1								Adjustable: 80...250 V AC/DC 3-phase 200...400 V AC/DC 1-phase		22.5 mm	
8516560000	WAS2 CMR 1/5/10A ac	1								0...10 A AC		22.5 mm	
8516570000	WAZ2 CMR 1/5/10A ac	1								0...10 A AC		22.5 mm	
8513340000	WAS2 CMR 20/40/60A ac	1								0...60 A AC		22.5 mm	
8526600000	WAZ2 CMR 20/40/60A ac	1								0...60 A AC		22.5 mm	

Amount	Output					Miscellaneous	Configuration	Auxiliary power	Rated voltage	Isolation	Connection system	Special characteristics	Page
	0...20 mA	4...20 mA	0...10 V	Relay									
1	X	X	X				DIP switch	24 V DC	300 V	3-way	S		C.36
1	X	X					Potentiometer	24 V DC			S		C.39
1	X	X					Potentiometer	24 V DC			Z		C.39
1	X	X					Potentiometer	24 V DC			S		C.38
1	X	X					Potentiometer	24 V DC			Z		C.38
1	X	X					Potentiometer	24 V DC			S		C.37
1	X	X					Potentiometer	24 V DC			Z		C.37
1	X	X					Potentiometer	24 V DC			S		C.39
1	X	X					Potentiometer	24 V DC			Z		C.39
1	X	X						24 V DC			S	Special adjustment	C.38
1	X	X						24 V DC			Z	Special adjustment	C.38
1	X	X						24 V DC			S	Special adjustment	C.37
1	X	X						24 V DC			Z	Special adjustment	C.37
1	X	X						24 V DC			S	Calibrated to 0...100 °C	C.37
1	X	X						24 V DC			S	Calibrated to 0...100 °C	C.39
1			X				Potentiometer	24 V DC			S		C.37
1			X				Potentiometer	24 V DC			S		C.39
1			X				Potentiometer	24 V DC			S		C.38
1			X				Potentiometer	24 V DC			Z		C.37
1			X				Potentiometer	24 V DC			Z		C.39
1			X				Potentiometer	24 V DC			Z		C.38
1			X					24 V DC			S	Special adjustment	C.37
1			X					24 V DC			S	Special adjustment	C.39
1			X					24 V DC			S	Special adjustment	C.38
1			X					24 V DC			Z	Special adjustment	C.37
1			X					24 V DC			Z	Special adjustment	C.37
1			X					24 V DC			Z	Special adjustment	C.39
1			X					24 V DC			Z	Special adjustment	C.38
1			X					24 V DC			S	Calibrated to 0...100 °C	C.39
1			X					24 V DC			S	Calibrated to 0...100 °C	C.38
1			X					24 V DC			S	Calibrated to 0...100 °C	C.37
1		X									Z	Passive converter OLP	E.21
1		X									Z	Passive converter OLP	E.21
1		X									Z	Passive converter OLP	E.21
1		X									Z	Passive converter OLP	E.21
1		X									Z	Passive converter OLP	E.21
1		X									Z	Passive converter OLP	E.21
3	X		X	X		With display	Button	24 V DC	300 V	3-way	S	Temperature measurement with alarm output	F.7
3	X		X	X		With display	Button	24 V DC	300 V	3-way	S	Temperature measurement with alarm output	F.8
2				X				24 V DC			Z		E.23
2				X				24 V DC			Z		E.23
2				X			DIP switch	24 V DC	300 V	3-way	S	Adjustable switching thresholds	D.4
2				X			DIP switch	24 V DC	300 V	3-way	Z	Adjustable switching thresholds	D.4
1				X		CO contact	DIP switch		300 V	3-way	S	Adjustable switching thresholds. Versorgung aus dem Messkreis	D.6
1				X		Monitoring of low and surge voltages	DIP switch		600 V	2-way	S	Adjustable switching thresholds, supply from the measurement circuit	D.7
1				X			DIP switch	24 V DC	300 V	2-way	S	Adjustable switching thresholds	D.5
1				X			DIP switch	24 V DC	300 V	2-way	Z	Adjustable switching thresholds	D.5
1				X			DIP switch	24 V DC	300 V	2-way	S	Adjustable switching thresholds	D.5
1				X			DIP switch	24 V DC	300 V	2-way	Z	Adjustable switching thresholds	D.5

Connection system: S = screw / Z = tension clamp, ILP = Input Loop Powered, OLP = Output Loop Powered

# Quick select – Analogue Signal Conditioning

**A**
**Selection table**

Order No.	Product	Input									Miscellaneous	Sensor feed	Width
		Amount	0...20 mA	4...20 mA	0...10 V	0...5 V	TC	RTD	Frequency				
<b>Monitoring modules</b>													
7940017848	DPADMV 0-10mV	1									0...10 mV		46 mm
7940017849	DPADMV 0-100mV	1									0...100 mV		46 mm
7940011718	DPADCV 0-10V	1			X								46 mm
7940012970	DPADCV 1-5V	1									1...5 V		46 mm
7940017847	DPAAVX 0-125Vac	1									0...250 V AC		46 mm
7940016144	DPAMAS 4-20mA	2		X									46 mm
7940011294	DPADMA 4-20mA	1		X									46 mm
7940017853	DPATCX K/0-1000C	1					X						46 mm
7940014212	DPARTD 0-50C	1						X					46 mm
7940014900	DPARTD 0-100C	1						X					46 mm
7940017852	DPARTD 0-200C	1						X					46 mm
7940017919	DPADRT 200Ohm20-400hm	2									Two resistors R1 and R2 in 2-wire configuration with R1 > R2		46 mm
7940017917	DPARES 0-1KOhm	1									2-wire resistance		46 mm
7940017850	DPAPOT 1KOhm/0-100%	1									3-wire partial-voltage meter or measuring wire		46 mm
7940017851	DPAPOT 10KOhm/0-100%	1									3-wire partial-voltage meter or measuring wire		46 mm
7940010174	UCVR	2									User adjustable: -55...55 mA -55...55 V		46 mm
7940014450	XFAR										User adjustable: -22...22 mA -11...11 V		46 mm
7760000017	UTCR	1					X						46 mm
7940011087	URTR	1						X					46 mm
7940015213	UHZR	1							X		User adjustable: 0...10 kHz 50 mV...250 V AC/DC		46 mm
7940017921	CNDR	2									Adjustable conductivity: 0...20 mS 0...200 °C		46 mm

Amount	Output				Miscellaneous	Configuration	Auxiliary power	Rated voltage	Isolation	Connection system	Special characteristics	Page
	0...20 mA	4...20 mA	0...10 V	Relay								
2				X	CO contact		24 V DC	300 V	3-way	S	Voltage monitoring	F.27
2				X	CO contact		24 V DC	300 V	3-way	S	Voltage monitoring	F.27
2				X	CO contact		24 V DC	300 V	3-way	S	Voltage monitoring	F.28
2				X	CO contact		24 V DC	300 V	3-way	S	Voltage monitoring	F.28
2				X	CO contact		24 V DC	300 V	3-way	S	Voltage monitoring	F.29
2				X	CO contact		24 V DC	300 V	3-way	S	Monitoring of residual current	F.34
2				X	CO contact		24 V DC	300 V	3-way	S	Current monitoring	F.26
2				X	CO contact		24 V DC	300 V	3-way	S	Temperature monitoring	F.31
2				X	CO contact		24 V DC	300 V	3-way	S	Temperature monitoring	F.30
2				X	CO contact		24 V DC	300 V	3-way	S	Temperature monitoring	F.30
2				X	CO contact		24 V DC	300 V	3-way	S	Temperature monitoring	F.30
2				X	CO contact		24 V DC	300 V	3-way	S	Resistance monitoring Residual current measuring	F.35
2				X	CO contact		24 V DC	300 V	3-way	S	Resistance monitoring	F.33
2				X	CO contact		24 V DC	300 V	3-way	S	Position monitoring	F.32
2				X	CO contact		24 V DC	300 V	3-way	S	Position monitoring	F.32
2				X	CO contact	Button	24 V DC	300 V	3-way	S		F.18
2				X	CO contact	Button	24 V DC	300 V	3-way	S		F.22
2				X	CO contact	Button	24 V DC	300 V	3-way	S		F.19
2				X	CO contact	Button	24 V DC	300 V	3-way	S		F.20
2				X	CO contact	Button	24 V DC	300 V	3-way	S		F.23
2	X		X	X	CO contact	Button	24 V DC	300 V	3-way	S		F.21

Connection system: **S** = screw / **Z** = tension clamp, **ILP** = Input Loop Powered, **OLP** = Output Loop Powered

