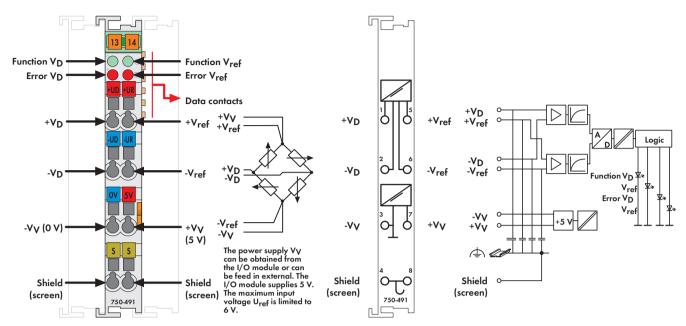
1-Channel Analog Input Module for Resistor Bridges (Strain Gauge)



Delivered without miniature WSB markers

The I/O module enables the direct connection of a resistor measurement bridge. The bridge voltage VD and supply voltage Vref of the bridge are digitized with a resolution of 16 bits.

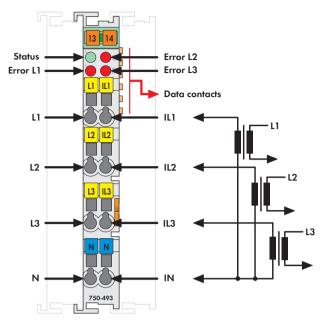
The two input channels for the resistor bridge are available as two 16 bit values for further processing. The result of measurement can be calculated by the formula: Measured value = $V_{\rm D}$ / $V_{\rm ref}$.

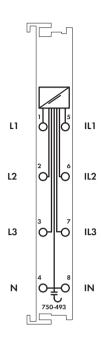
 $\label{thm:problem} \mbox{Field and system levels are electrically isolated}.$

Description			Item No.	Pack. Unit
1AI for Resistor Bridges			750-491	1
1AI for Resistor Bridges/ 125ms			750-491/000-001	1
Conversion time 12	5 ms, Filter 200 Hz			
Accessories			Item No.	Pack. Unit
Miniature WSB G	uick marking syster	n		
Communication	plain		248-501	5
SHOULD SHOULD	with marking		see pages 352 353	
Approvals				
Conformity marking	1	C€		

Technical Data	
Number of inputs	2, for one resistor bridge
Power supply	via system voltage DC/DC
Current consumption typ. (internal)	65 mA
Signal voltage V _D	-15mV +15mV
Signal voltage V _{ref}	+2V +6V
Internal resistance	$> 200 \text{ k}\Omega \text{ (V}_{\text{ref}}\text{),} > 1 \text{ M}\Omega \text{ (V}_{\text{D}}\text{)}$
Voltage supply Vv	5 V DC, 20 mA
Resolution	16 bits
Conversion time	500ms
Measuring error	V_D : \pm 30 μ V; V_{ref} : \pm 10 mV
Filter	50 Hz
Isolation	500 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	$0.08~\text{mm}^2 \dots 2.5~\text{mm}^2$ / AWG 28 14
Stripped lengths	8 9 mm / 0.33 in
Width	12 mm
Weight	53 g
EMC: C € - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: C€ - emission of interference	acc. to EN 61000-6-4 (2007)

3-Phase Power Measurement Module





Delivered without miniature WSB markers

The 3-phase power measurement module measures the electrical data in a three-phase supply network.

The voltage is measured via network connection to L1, L2, L3 and N. The current of the three phases is fed to IL1, IL2, IL3 and IN via current transformers.

The 3-phase power measurement module transmits the root mean square values into the process image without requiring high computing power from the controller. For each phase, the effective power (P) and the energy consumption (W) are calculated by the 3-phase power measurement module using the root mean square values for all measured voltages (V) and currents (I). For example, both the apparent power (S) and phase shift angle (ϕ) can be easily derived from these values.

Therefore, the 3-phase power measurement module provides comprehensive network analysis via fieldbus. By means of values such as voltage, current, effective and apparent power consumption or load condition, the operator is able to optimally regulate the supply to a drive or machine and protect the installation from damage and failure.

Description		Item No.	Pack. Unit
3-Phase Power Measurement Modu		750-493	1
3-Phase Power Mea	surement Module (5 A	750-493/000-001	1
A		i. M	Pack.
Accessories		Item No.	Unit
Miniature WSB Qu	ick marking system		
Communical States	plain	248-501	5
MANUAL PROPERTY AND ADDRESS OF THE PARTY AND A	with marking	see pages 352 35	3
Approvals Also see "Approvals Overview" in Section		Section 1	
Conformity marking	CE		
.®∞ UL 508			

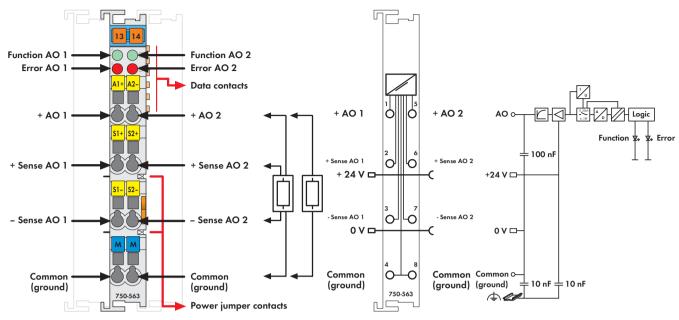
Technical Data	
Number of inputs	6 (3 voltage inputs, 3 current inputs)
Measuring voltage (max.)	500 VAC 3~
Input resistance voltage path (typ.)	500 kΩ
Measuring current (max.)	1 A (750-493)
	5 A (750-493/000-001)
Input resistance current path (typ.)	33 mΩ (750-493)
	6.8 mΩ (750-493/000-001)
Resolution	16 bits
Frequency range with activated DC filter	10 - 500Hz
Frequency range with deactivated DC	0 - 500Hz
Max. operating frequency	approx. 2 kHz
Signal form	any (in consideration of the frequency
	range and max. operating frequency)
Measuring error for current and voltage	0.5 % (of the upper range value)
Measuring procedure	True RMS with 64,000 samples/s
Measuring cycle time	configurable, preset at 50 ms per
	measured value
Measured values	Effective power, energy, power
	factor (cos φ)
Power supply	via system voltage internal bus (5 V)
Current consumption (internal)	115 mA
Isolation	1500 V system/supply
Bit width	2 x 48 bits data
	2 x 24 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	$0.08~\text{mm}^2 \dots 2.5~\text{mm}^2$ / AWG 28 14
Stripped lengths	8 9 mm / 0.33 in
Width	12 mm
Weight	48.5 g
EMC: C € - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: C € - emission of interference	acc. to EN 61000-6-3 (2007)



1.6

2-Channel Analog Output Module, 0/4 ... 20 mA / 6 ... 18 V DC

16 bits, configurable



Delivered without miniature WSB markers

The analog output module generates output currents ranging from 0/4 to 20mA or output voltages in the range from 6 to 18V for the field. Output ranges can be configured via WAGO-I/O-CHECK or GSD files. The module has two short circuit-proof output channels and enables direct connection of two 2-line actuators on the connections AO 1 and ground or AO2 and ground. Signals are output via AO 1 or AO 2. In addition, the sense lines from 4-line actuators can be connected to the connections Sense AO1 and +Sense AO1 or Sense AO2 and +Sense AO2.

Both output channels have a common ground potential.

The output signal is electrically isolated and transmitted with a resolution of

Both the internal system and the field side supply power the module.

Description		Item No.	Pack. Unit
2 AO 0/4-20mA	/ 6-18V DC 16 I	3it 750-563	1
Accessories		Item No.	Pack. Unit
Miniature WSB G	Quick marking s		
G.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	plain	248-501	5
Lanconsons	with marking	see pages 352 353	
visital alata			
Approvals		Also see "Approvals Overview" in Sec	ction 1
Conformity marking		CE	
®= UL 508	,		
•®= ANSI/ISA 12.12.01		pending	
®≈ ANSI/ISA 12.	12.01	ponung	
•		pending	
® ≖ ANSI/ISA 12.			
EN 60079-0, -1			

Technical Data		
No. of outputs	2	
Current consumption (internal)	80 - 110mA	
Voltage via power jumper contacts	24 V DC (-15 % +20 %)	
Output voltage	6 V 18 V (switchable)	
Output current	0/4 mA 20 mA (switchable)	
Load impedance	> 1.8 k Ω (voltage output)	
	< 500 Ω (current output)	
Resolution	16 bits	
Conversion time (typ.)	5 ms	
Recovery time (typ.)	< 300 µs	
Measuring error (25°C)	$< \pm 0.05$ % of the scale end value	
Temperature coefficient	< ± 100ppm	
Isolation	500 V system/supply	
Bit width	2 x 16 bits data	
	2 x 8 bits control/status (option)	
Wire connection	CAGE CLAMP®	
Cross sections	$0.08~\text{mm}^2 \dots 2.5~\text{mm}^2 \ / \ AWG \ 28 \dots 14$	
Stripped lengths	8 9 mm / 0.33 in	
Width	12 mm	
Weight	53.5 g	
EMC: C € - immunity to interference	acc. to EN 61131-2 (2003)	
EMC: C € - emission of interference	acc. to EN 61131-2 (2003)	

