

Ziegler

Redefine Innovative Metering

Technical Datasheet

ZOT STAx | STWx | STDx

ELECTRICAL SIGNAL CONVERTER - STATIC (FIXED INPUT)

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ELECTRICAL SIGNAL CONVERTER - STATIC (FIXED INPUT)

ZOT STxx is a series of non programmable signal converters used to measure and convert AC electrical signal to DC Voltage or Current analog output for process control application

ZOT STAA (Current) / ZOT STAV (Voltage) – Average measurement

ZOT STDA (Current) / ZOT STDV (Voltage) – Average measurement (Dual Output)

ZOT STWA (Current) / ZOT STWV (Voltage) - True RMS measurement

Product Features

- Accuracy Class – 0.2% (As per IEC 60688)
- Wide auxiliary Power Supply
 - 40...300VAC/DC or 24...60VAC/DC (ZOT STAx & ZOT STWx)
 - 60...300VAC/DC or 20...40VAC/20...60VDC (ZOT STDx - Dual Output)
- Input : 0...63.5V to 0...500VAC or 1A or 5A
- Output - 0...20mA / 4...20mA or 0...10V
- Output Burden – 15V for Current output & 2mA for voltage output
- Output Response Time - <250ms
- LED indication for power on
- DIN Rail / Wall mounting



Symbols and their meanings:

X	Input AC Voltage / AC Current.	Y0	Start value of output DC	R _N	Rated value of output burden.
Y	Output DC Voltage / DC Current.	Y2	End value of output DC	U _N	Nominal input voltage.
X0	Start value of input AC	H/L	Power supply.	I _N	Nominal input current.
X2	End value of input AC	F _N	Nominal Frequency.		

Technical Specifications

Input Data – Voltage Converter	
Nominal Input Voltage	0-63.5 / 0-100 / 0-110 / 0-150 / 0-220 / 0-230 / 0-240 / 0-250 / 0-300 / 0-330 / 0-415 / 0-450 / 0-500V AC
Nominal Frequency	50 or 60 Hz
Nominal input Voltage burden	< 0.6 VA at U _N
Overload Capacity	1.2 x U _N continuously 2 x U _N for 1 second, repeated 10 times at 10 second intervals
Input Data – Current Converter	
Nominal Input Current	0-1 / 0-5 A AC
Nominal Frequency	50 or 60 Hz
Nominal input Voltage burden	< 0.2 VA at I _N
Overload Capacity	1.2 x I _N continuously 10 x I _N for 3 second, repeated 5 times at 5 minute intervals, 20 x I _N for 1 second, repeated 5 times at 5 minute intervals, 50 x I _N for 1 second.

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Output Data - Output type: Load independent DC Voltage/Current	
DC Current output	0-10mA / 0-20mA / 2-10mA / 4-20mA
Burden	15V
DC Voltage output	0-5V / 0-10V
Burden	2 mA
Current limit under overload R=0	$\leq 1.6 \times Y2$ with Current output. ≤ 25 mA with Voltage output ≤ 40 mA with Voltage output – in case of Dual output converter
Voltage limit under R= ∞	$\leq 1.6 \times Y2$ with Voltage output. ≤ 25 V with Current output.
Residual Ripple in Output signal	$\leq 1\%$ pk-pk
Response Time	< 250 ms

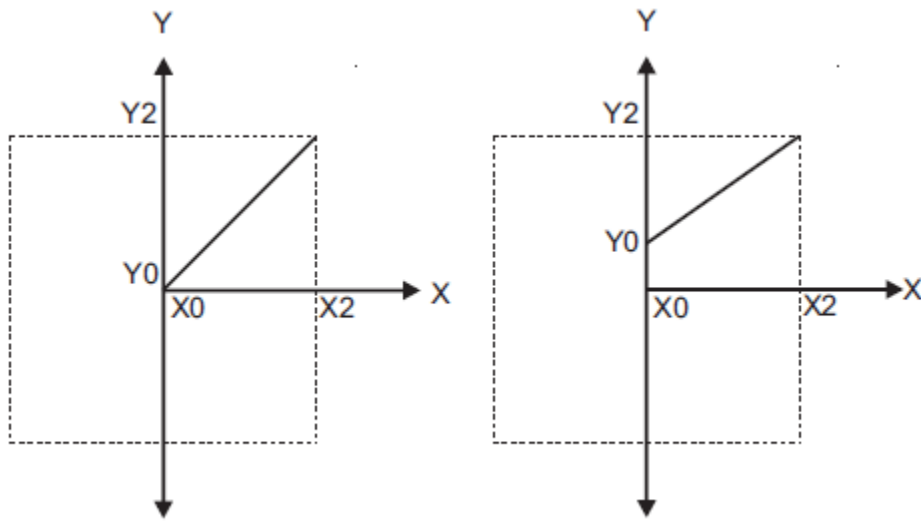
Power Supply	
Auxiliary Supply	40...300VAC/DC < 4 VA or 24...60VAC/DC < 3 VA (ZOT STAx & ZOT STWx) 60...300VAC/DC or 20...40VAC/20...60VDC < 5 VA (ZOT STDx - Dual Output) Frequency 45-65 Hz

Accuracy	
Reference Value	Output End Value Y2 (Voltage or Current)
Accuracy class	0.2
Reference conditions for Accuracy	
Ambient temperature	23°C +/- 1°C
Pre-conditioning	30 min acc. to IEC/EN 60 688
Input signal frequency	50...60Hz
Input Variable	Rated Voltage Range / Rated Current Range
Input waveform	Sinusoidal
Auxiliary supply voltage	Rated Value $\pm 1\%$
Auxiliary supply frequency	Rated Value $\pm 1\%$
Output Load	$R_N = 7.5 \text{ V} / Y2 \pm 1\%$ With DC Current output signal. $R_N = Y2 / 1 \text{ mA} \pm 1\%$ With DC Voltage output signal.
Additional Error	Temperature influence : $\pm 0.2\% / 10^\circ\text{C}$ Influence of Variations: As per IEC/EN 60 688 standard.
Miscellaneous	Acc. to IEC/EN 60 688

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Output characteristics



X0 = Start value of input

Y0 = Start value of output

X2 = End value of input=UN/IN

Y2 = End value of output

UN = Nominal input voltage

IN = Nominal input current

Safety	ZOT STAx STWx	ZOT STDx (Dual Output)
Protection Class	II (Protection Isolated, EN 61 010)	
Protection	IP 40, housing according to EN 60 529 IP 20 ,terminal according to EN 60 529	
Pollution degree	2	
Installation Category	III	
Insulation Voltage	50Hz,1min. (EN 61 010-1)	7770V DC, Input versus outer surface. 5230V DC, Input versus all other circuits. 5230V DC, Auxiliary supply versus input and output circuits. 690V DC, Output versus output versus each other versus outer surface.
	5500V, Input versus outer surface. 3700V, Input versus all other circuits. 3700V, Auxiliary supply versus input and output circuits.	

Installation Data	ZOT STAx STWx	ZOT STDx (Dual Output)
Mechanical Housing	Lexan 940 (polycarbonate) Flammability Class V-0 acc. To UL 94, self extinguishing, non dripping, free of halogen.	
Mounting position	Rail mounting / wall mounting.	
Weight	Approx 0.12kG	Approx 0.2kG

Connection Terminal	
Connection Element	Conventional Screw type terminal with indirect wire pressure
Permissible cross section of the connection lead	≤ 4.0 mm ² single wire or 2 x 2.5 mm ² fine wire

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Environmental	
Nominal range of use	0 °C...23 °C... 45 °C (usage Group II)
Storage temperature	-40 °C to 70 °C
Relative humidity of annual mean	≤ 75%
Altitude	up to 2000 m

Ambient tests	
IEC 60 068-2-6	Vibration Acceleration ± 2 g Frequency range 10....150...10Hz, Rate of frequency sweep 1 octave/minute Number of cycles 10, in each of the three axes
IEC 60 068-2-27	Shock Acceleration 3 x 50g 3 shocks in each in 6 directions
EN 60 068-2-1/-2/-3	Cold, Dry heat, Damp heat
IEC 61 000-4-2/-3/-4/-5/-6, EN 55 011	Electromagnetic compatibility

Electrical Connections - ZOT STAx STWx	
Connection	Terminal details
Measuring input	~ 3 ~ 4
Auxilliary Power supply	~, + 5 ~, - 6
Measuring output	+, 1 -, 2



ZOT STAx | STWx | STDx

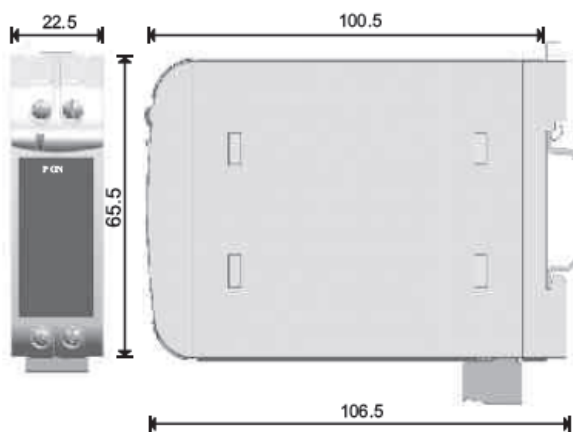
ELECTRICAL SIGNAL CONVERTER - STATIC (FIXED INPUT)

Electrical Connections - ZOT STDx	
Connection	Terminal details
Measuring input	~ 5 ~ 6
Auxilliary Power supply	~, + 7 ~, - 8
Measuring output 1	+, 1 -, 2
Measuring output 2	+, 3 -, 4

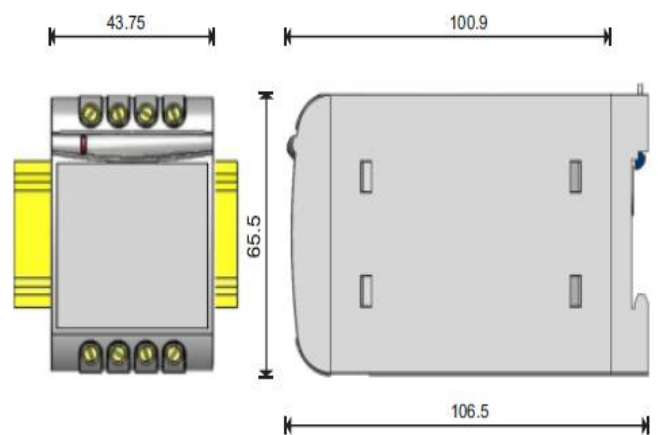


Dimensions
Note : All Dimensions are in mm.

ZOT STAx | STWx



ZOT STDx (Dual Output)



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Ordering Information	(√)	
ZOT STAV (Voltage) – Average measurement		
ZOT STDV (Voltage) – Average measurement (Dual Output)		
ZOT STWV (Voltage) - True RMS measurement		
0-63.5V		
0-100V		
0-110V		
0-150V		
0-220V		
0-230V		
0-240V		
0-250V		
0-300V		
0-330V		
0-415V		
0-450V		
0-500V		
ZOT STAA (Current)– Average measurement		
ZOT STDA (Current) – Average measurement (Dual Output)		
ZOT STWA (Current) - True RMS measurement		
0-1A		
0-5A		
Input Frequency 50 / 60Hz		
Output Signal	Output 1	Output 2 (ZOT STDx)
0...10V		
0...5V		
0...20mA		
2...10mA		
4...20mA		
0...10mA		
Power Supply		
40...300 V AC/DC (ZOT STAx STWx)		
24...60 V AC/DC (ZOT STAx STWx)		
60...300 V AC/DC (ZOT STDx)		
20...40 VAC / 20...60 VDC (ZOT STDx)		

Example - ZOT STAV (Voltage) – Average measurement, 0-110V, 4...20mA, 40...300 V AC/DC (ZOT STAx | STWx)

Ziegler

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Ziegler Instrumentation UK Ltd.

Central Buildings, Woodland close old woods Trading Estate, Torquay Devon, TQ2 7BB, United Kingdom
+441803 616 800 | info@ziegler-instrument.com | ziegler-instrument.com