TAS-321DG

4921220040L

Selectable AC transducer

Data sheet

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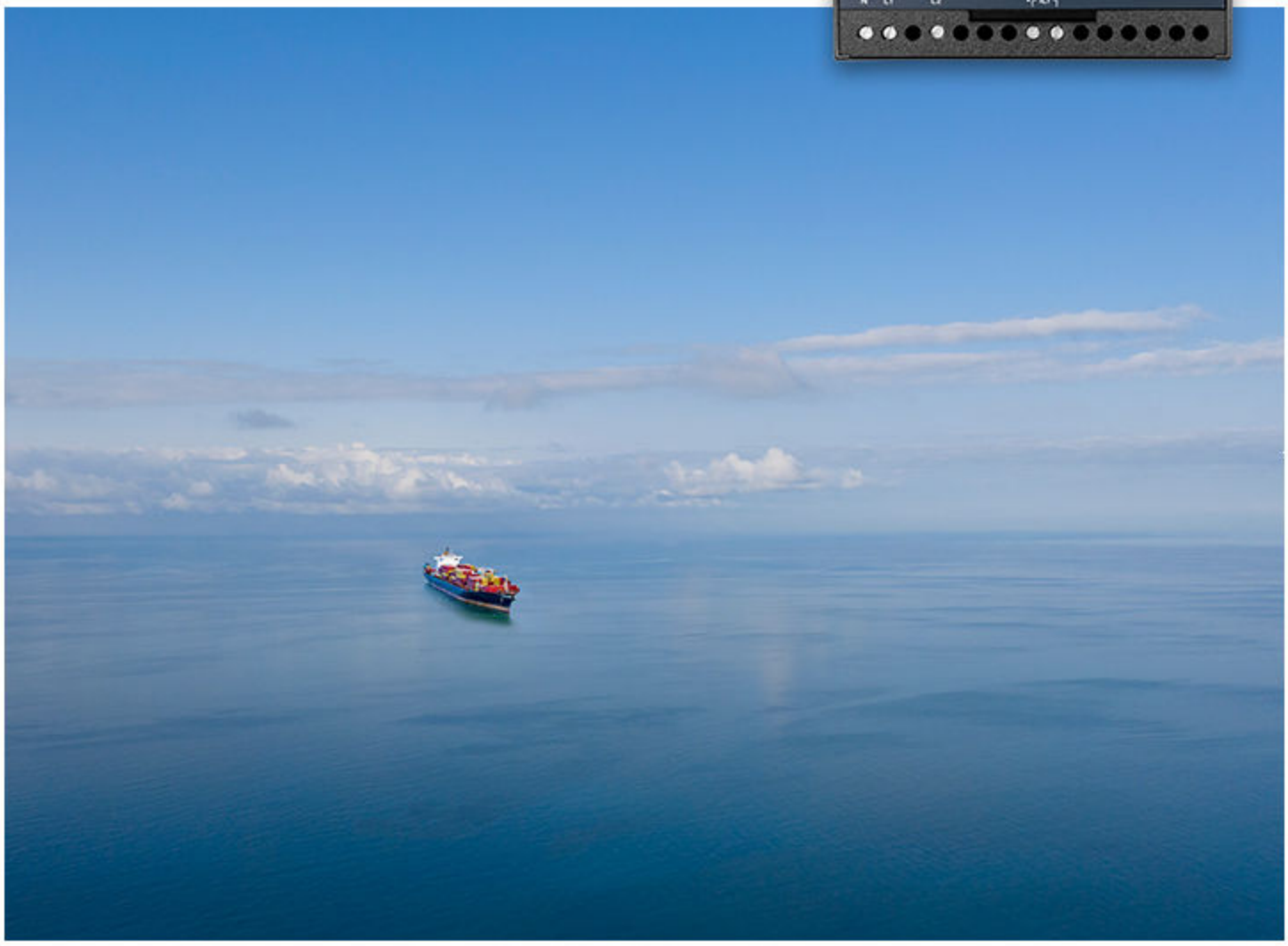


1. Data sheet

1. Data sheet

- Bi-directional current measurement on AC networks
- Power measurement using 2 phases on 3-phase networks
- Class 0.5 (IEC688) measurement
- Easy configuration via PC interface
- Non-linear output characteristics

1.1 Contents

1.1.1 Application

TAS-321DG is a micro-controller based AC transducer with 1 analogue output for measurement of bi-directional current.

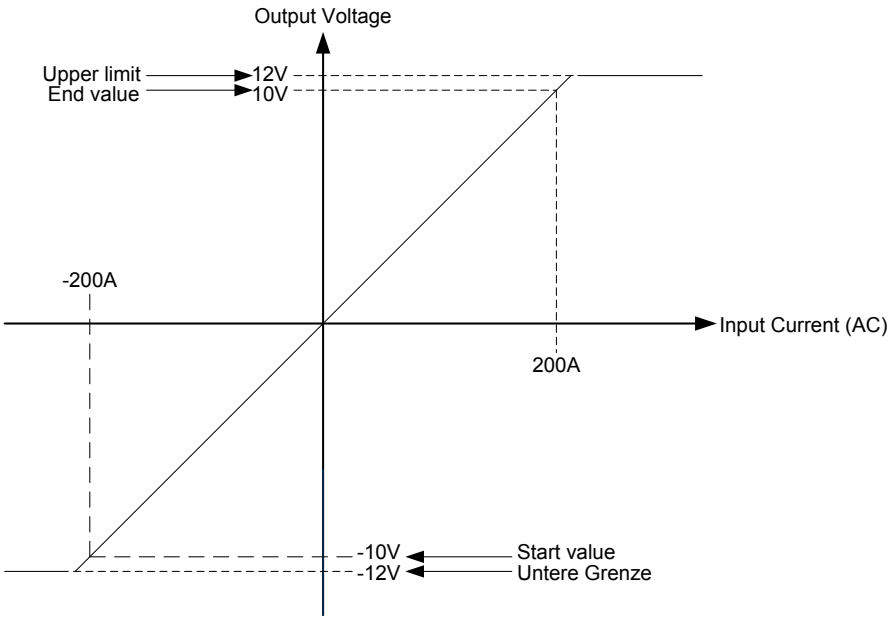
The sign for current direction is based on the measured power direction. Furthermore, the transducer can be used for measurement of active power or reactive power on a 3-phase network where only 2 phases are available for the measurement.

TAS-321DG can be delivered pre-configured or it can be delivered un-configured for customer configuration through the PC interface.

TAS-321DG can be configured as a normal linear transducer or with up to three slopes giving the possibility for a higher resolution in one or two ranges of the measurement. Upper and lower output limitations can also be configured.

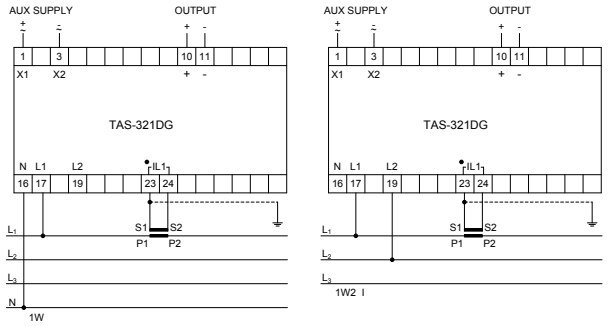
1.1.2 Example of single slope

For further examples, see data sheets for TAS-311DG/TAS-331DG

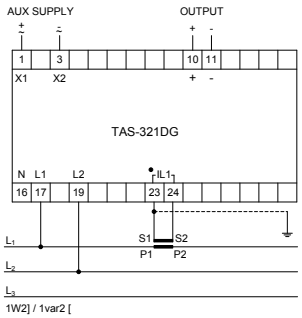


1.1.3 Connection diagram

CURRENT



POWER



Coupling	17	19	23/24
1W2 I/1var2 I	L1	L2	L1
1W2 II/1var2 II	L2	L3	L1
1W2 III/1var2 III	L3	L1	L1

DANGER!
With voltages above 480 V phase-phase! The secondary side of the current transformer MUST be connected to earth. Alternatively, a double insulated current transformer can be used.

1.1.4 General technical specifications

Accuracy	Current/power: Class 0.5 (-10...15...30...55°C) according to IEC 688
Influence, phase angle	≤ ±0.75°
Meas. current (I_n)	0.75/1.5/3.0/6.0 A Meas. range (In): 0...200 %
Overload, currents	20 A max., continuously 75 A max. for 10 s 240 A max. for 1 s
Load	Max. 0.5 VA
Meas. voltage (U_n)	73/140/254/400 V phase to neutral Meas. range (U_n): 30...120 % (57...400 V) 127/240/440/690 phase to phase Meas. range (U_n): 30...120 % (100...600 V)
Overload, voltages	1.2 x U_n max., continuously 2 x U_n max. for 10 s
Load	Min. 480 kΩ
Frequency range	30...45...65...80 Hz Note: For fundamental frequency (1. harmonic) outside 20 Hz...80 Hz, the input is fixed at 0
Indication	Red LED function: (The LED is located behind the front plate) Calibration error = flash frequency 5 Hz Configuration error = flash frequency 1 Hz
Output	1 analogue output
Standard range	Output (0...100 %): 0...1 mA, 0...5 mA, 0...10 mA, 0...20 mA, 0...1 V, 0...5 V, 0...10 V Output (10...100 %): 0.1...1 mA, 0.5...5 mA, 1...10 mA, 2...20 mA, 0.1...1 V, 0.5...5 V, 1...10 V Output (20...100 %): 0.2...1 mA, 1...5 mA, 2...10 mA, 4...20 mA, 0.2...1 V, 1...5 V, 2...10 V Output (-100...0...100 %): -1...0...1 mA, -5...0...5 mA, -10...0...10 mA, -20...0...20 mA, -1...0..1 V, -5...0...5 V, -10...0...10 V

	Other ranges possible
Limit	Max. ±120 % of nominal output
Output load	Burden if current output: Max. 10 V (max. 1 kΩ) Burden if voltage output: Max. 20 mA
Output cable	Max. length 30 m
Δout/ΔRload	10 V, 5 V, 1 V, 20 mA ranges according to IEC 688 10 mA, 5 mA, 1 mA ranges ±0.5%
Ambient temperature	-10...55°C (nominal) -25...70°C (operating) -40...70°C (storage)
Temperature coefficient	Max. ±0.2 % of full scale per 10°C
Response time	<150 ms, typically 125 ms
Ripple	Twice the class index (peak to peak measurement) according to IEC 688
Galvanic separation	AC aux. supply models: Between inputs, outputs and aux. supply: 3750 V-50 Hz-1 min. DC aux. supply models: Between inputs and outputs: 3750 V-50 Hz-1 min. Between inputs and supply: 3750 V-50 Hz-1 min. Between supply and outputs: 1500 V-50 Hz-1 min.
Aux. supply voltage	57.7-63.5-100-110-127-200-220-230-240-380-400-415-440-450-480-660-690 V AC ±20 % 24-48-110-220 V DC -25/+30 %
Consumption	(Aux. supply) 3.5 VA/2 W
Climate	HSE, to DIN 40040
EMC	According to EN 61000-6-1/2/3/4
Protection	Housing: IP40. Terminals: IP20 to IEC 529 and EN 60529
Connections	Max. 2.5 mm² multi-stranded Max. 4.0 mm² single-stranded
Materials	All plastic parts are self-extinguishing to UL94 (V1)

1.1.5 Specific technical specifications

Current	Measuring current	0.5...8 A
	Start value	-100...+67 % of end value
	End value	100 % of measuring current
Current/power	Connection	1W note only current: (IL1 and UL1-N) or (IL2 and UL2-N) or (IL3 and UL3-N): 57...400 V AC
		1W2 I: (IL1 and UL1-L2): 100...690 V AC
		1W2 II: (IL1 and UL2-L3): 100...690 V AC
		1W2 III: (IL1 and UL3-L1): 100...690 V AC

1.1.6 Available variants

Type	Variant no.	Description	Item no.	Note
TAS-321DG, bi-dir. current	01	TAS-321DG, customised - AC voltage aux. supply	2962010000.01	
TAS-321DG, bi-dir. current	02	TAS-321DG, customised - DC voltage aux. supply	2962010000.02	

Type	Variant no.	Description	Item no.	Note
TAS-321DG, power 1W2	03	TAS-321DG, customised - AC voltage aux. supply	2962010000.03	
TAS-321DG, power 1W2	04	TAS-321DG, customised - DC voltage aux. supply	2962010000.04	
TAS-321DG, power 1VAr2	05	TAS-321DG, customised - AC voltage aux. supply	2962010000.05	
TAS-321DG, power 1VAr2	06	TAS-321DG, customised - DC voltage aux. supply	2962010000.06	
TAS-321DG	07	TAS-321DG, unconfigured - AC voltage aux. supply	2962010000.07	
TAS-321DG	08	TAS-321DG, unconfigured - DC voltage aux. supply	2962010000.08	

1.1.7 Available accessories

Type	Description	Item no.	Note
Accessories for TAS	TAS configuration kit	2961860010.03	
Accessories for TAS	30 extra labels	2961860010.04	

1.1.8 Order specifications (examples)

The examples below are order specifications for pre-configured transducers. For un-configured transducers, only auxiliary voltage must be specified.

TAS-321DG		
Item no.	**2962010000.02**	**2962010000.03**
Type	Bi-directional current	Power
Variant no.	02	03
Measuring range	-120...0...120 A AC	0...20 MW
Coupling	1 W	1W2 II
VT ratio	-	10 kV/100 V
Input voltage	400 V AC	100 V AC
CT ratio	100/1 A	100/5
Input current	-1.2...0...1.2 A	NA
Transfer curve	Single slope	Single slope
Output start value	-10 V	4 mA
Threshold 1	-	-
Mid value	0	12 mA
Threshold 2	-	-
Output end value	10 V	20 mA
Output lower limit	-12 V	4 mA
Output upper limit	12 V	21.5 mA
Auxiliary voltage	110 V DC	400 V DC

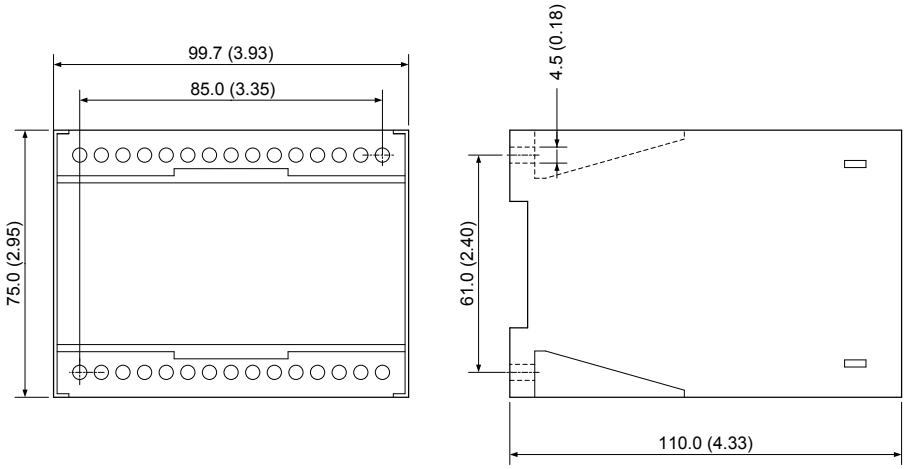
1.1.9 Accessories

Please order separately:

- PC configuration kit containing connection cable and software for customer configuration

- Extra labels

1.1.10 Dimensions in mm (inches)



1.1.11 Mounting instructions

The transducer is designed for panel mounting, being mounted in a 35 mm DIN rail, or by means of two 4 mm screws.

The design of the transducer makes mounting of it close to similar equipment possible, however make sure that there is min. 50 mm between the top and bottom of the transducer and other equipment. The DIN rail must always be placed horizontally when several transducers are mounted on the same rail.

1.1.12 Disclaimer

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