



-power in control



DATA SHEET



AC voltage single function transducer TAV-311DG/TAV-321DG

- Compact design, 55 x 75 mm
- Easily accessible terminals
- Accuracy class 0.5
- 35 mm DIN rail or base mounting



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1. Data sheet

1.1 Contents

1.1.1 Application

The voltage transducers type TAV-311DG or TAV-321DG are transducers for measurement of a sinusoidal AC voltage converted into a DC current or DC voltage signal proportional to the measured value on a single phase or 3-phase network.

PLCs, PCs, microprocessor control, indicators, alarm units etc. can be operated by the output signal.

1.1.2 Measuring principle

Average measurement.

The transducer consists of a transformer, which gives galvanic insulation between input and output.

The signal is rectified, smoothed and amplified into a V_{dc} or an A_{dc} output.

The TAV-311DG with zero adjustment needs a constant auxiliary supply voltage, which is also insulated from output by a transformer.

1.1.3 Available transducers

TAV-311DG, aux. supply 24 V_{dc}

Input, std.	Input, adjustable span	4-20 mA_{dc}	
0-120 V_{ac}	0-105/145 V		
0-120 V_{ac}	0-100/150 V		1207010004
0-132 V_{ac}	0-110/165 V		1207010019
0-230 V_{ac}	0-192/288 V		1207010005
0-440 V_{ac}	0-370/550 V		1207010006

TAV-311DG, aux. supply 18-110 V_{dc}

Input, std.	Input, adjustable span	0-20 mA_{dc}	4-20 mA_{dc}
0-120 V_{ac}	0-105/145 V		
0-120 V_{ac}	0-110/133 V		
0-132 V_{ac}	0-100/165 V		
0-132 V_{ac}	0-110/165 V	1207010024	1207010020
0-500 V_{ac}	0-420/580 V		1207010022

TAV-311DG, aux. supply 110/230 V_{ac}

Input, std.	Input, adjustable span	4-20 mA _{dc}
0-120 V _{ac}	0-100/150 V	1207010001
0-230 V _{ac}	0-192/285 V	1207010002
0-300 V _{ac}	0-250/375 V	1207010025
0-440 V _{ac}	0-370/550 V	1207010003
0-500 V _{ac}	0-420/580 V	1207010028
88-132 V _{ac}	88-125/143 V	1207010008

TAV-311DG, aux. supply 88-220 V_{dc}

Input, std.	Input, adjustable span	4-20 mA _{dc}
0-132 V _{ac}	0-110/165 V	1207010021
0-500 V _{ac}	0-420/580 V	1207010029

TAV-321DG, without aux. supply

Input, std.	Input, adjustable span	0-20 mA _{dc}
0-120 V _{ac}	0-110/150 V	1207010103
0-440 V _{ac}	0-400/550 V	1207010105

1.1.4 Technical specifications

Measuring voltage (U_{nom})	
TAV-311DG	100...500 V _{ac} (≤ 0.3 VA)
TAV-321DG	100...440 V _{ac} (≤ 2.8 VA)
Overload	1.2 x U_{nom} continuously 2 x U_{nom} for 10 s
Frequency range	45...65 Hz
Range	
Input TAV-321DG	0...30...120 % 0...30 % U_n output not linear
Output TAV-311DG (20...100 %)	4...20 mA _{dc} Span adjustment ± 20 % of FS Zero adjustment ± 20 % of 4 mA Output limit < 22.0 mA _{dc}
Output TAV-311DG (0...100 %)	0...5 mA, 0...10 mA, 0...20 mA _{dc} , 0...10 V _{dc} Span adjustment ± 20 % of FS output Zero adjustment for all span adjustments
Output TAV-321DG (0...100 %)	0...10mA, 0...20 mA _{dc} , 0...10 V _{dc} Span adjustment +10/-20 % of FS output
Output load current	Max. 12 V TAV-311DG Max. 8 V TAV-321DG
Output load voltage	Max. 1 mA
Accuracy	Class 0.5 (-10...15...30...55°C) according to IEC688 Class 1.0 at $U_n \leq 25$ %
For output 0...10 V _{dc}	Class 0.5 (-10...15...30...55°C) at load ≥ 100 k Ω Class 1.0 (-10...15...30...55°C) at 10 k $\Omega \leq$ load < 100 k Ω
Response time/ripple	<300 ms/0.5 % pp
Temp. coefficient	Max. 0.1 % of full scale per 10°C
TAV-311DG $\Delta_{out}/\Delta U_{aux}/\Delta f_{aux}/\Delta R_{load}$	Max. 0.1 %/ $\Delta 10$ % U_{aux} /0.1 % (45...65 Hz)/0.1 % R_{load} max.
TAV-321DG $\Delta_{out}/\Delta R_{load}$	0.5 % R_{load} max.
Ambient temperature	-10...+55°C (normal) -25...+70°C (operating) -40...+70°C (storage)
Galvanic separation	Between inputs, outputs and aux. voltage: 2200 V - 50 Hz - 1 min.
Aux. supply voltage (U_n) only TAV-311DG	110/230/440V AC ± 20 % (max. 2.5 VA) 35...45 Hz max. 1 minute 45...65 Hz continuously

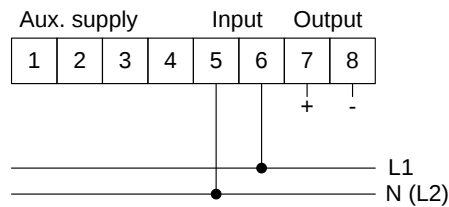
Connections	Max. 4.0 mm ² (single-stranded) Max. 2.5 mm ² (multi-stranded)
Materials	All plastic parts are self-extinguishing to UL94 (V1)
Protection	Case: IP40. Terminals: IP20, to IEC529 and EN60529
EMC	EN50081-1/2, EN50082-1/2

1.1.5 Connections - TAV-311DG

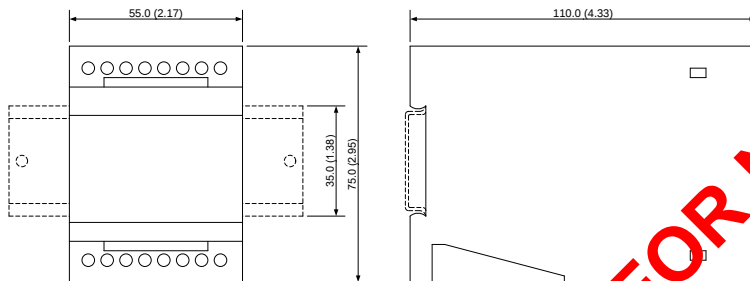
Recommended fuse 2 A on aux. supply.

Aux. supply Input Output <table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr></table> 110V AC N L1 N (L2)	1	2	3	4	5	6	7	8	For aux. supply 110 V_{ac} (Please note that transducers with 110 V_{ac} supply can also be connected to 230 V_{ac}).
1	2	3	4	5	6	7	8		
Aux. supply Input Output <table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr></table> 220V AC N L1 N (L2)	1	2	3	4	5	6	7	8	For aux. supply 230 V_{ac} (Please note that transducers with 230 V_{ac} supply can also be connected to 110 V_{ac}).
1	2	3	4	5	6	7	8		
Aux. supply Input Output <table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr></table> L1 L2 440V AC L1 N (L2)	1	2	3	4	5	6	7	8	For aux. supply 440 V_{ac}
1	2	3	4	5	6	7	8		
Aux. supply Input Output <table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr></table> + GND L1 N (L2)	1	2	3	4	5	6	7	8	For aux. supply V_{dc}
1	2	3	4	5	6	7	8		

1.1.6 Connection - TAV-321DG



1.1.7 Mechanical drawing/dimensions in mm (inches)



Weight:

TAV-311DG: approx. 0.4 kg

TAV-321DG: approx. 0.3 kg

1.1.8 Order specifications

To order a transducer with a standard input, only quote the type and order no.:

Type - order no.

Example:

TAV-311DG - 1207010022 (see the tables in section "Available transducers").

To order a TAV-311DG transducer with a customised input:

Type - Measuring voltage - Output - Supply

Example:

TAV-311DG - 0...450 V - 4...20 mA - 48...110 V_{dc}

To order a TAV-321DG transducer with a customised input:

Type - Measuring current - Output

Example:

TAV-321DG - 0...220 V - 0...10 V

Please note that some combinations of input, output and aux. supply are not available as standard.

1.1.9 Disclaimer

DEIF A/S reserves the right to change any of the contents of this document without prior notice.