Voltage Transducer AV 100 Series

V_{PN} = 50.. 2000 V

For the electronic measurement of voltages: DC, AC, pulsed..., with galvanic isolation between the primary circuit (high voltage) and the secondary circuit (electronic circuit).

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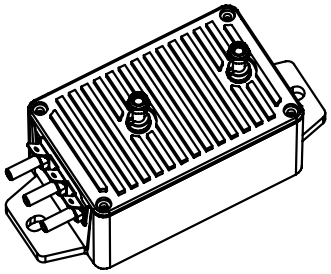

Electrical data

Type	Primary nominal voltage rms V_{PN} (V)	Primary Voltage, measuring range V_{PM} (V)	primary resistance R_P (Ω)
AV 100-50	50	± 75	6M
AV 100-125	125	± 187.5	6M
AV 100-150	150	± 225	6M
AV 100-250	250	± 375	6M
AV 100-500	500	± 750	6M
AV 100-750	750	± 1125	8.9M
AV 100-1000	1000	± 1500	11.9M
AV 100-1500	1500	± 2250	17.8M
AV 100-2000	2000	± 3000 [1]	17.8M

$\hat{V}_P$	Peak primary voltage [2]		2 x V_{PM} (1s/h)		V_{DC}
R_M	Measuring resistance		$R_{M\,min}$	$R_{M\,max}$	
		@ V_C= 11.4 V	0	47	Ω
		@ V_C= 22.8 V	0	184	Ω
I_{SN}	Secondary nominal current rms		50		mA
V_C	Supply voltage (± 5 %)		DC ± 12 .. 24		V
I_C	Static Current consumption		50 + I_S		mA

Accuracy - Dynamic performance data

X_G	Overall Accuracy @ V_{PN} , T_A = 25°C	± 0.7	%
X_G	Overall Accuracy @ V_{PN} , TA = - 25 .. + 70°C	± 1.5	%
X_G	Overall Accuracy @ V_{PN} , T_A = - 40 .. + 85°C	± 1.7	%
ε_L	Linearity error @ T_A = 25°C	< 0.1	%
I_O	Offset current @ V_P = 0, T_A = 25°C	± 0.15	mA
t_r	Response time	< 30	µs
BW	Frequency bandwidth (-3 dB)	DC..11	kHz

General data

T_A	Ambient operating temperature	- 40 .. + 85	°C
T_S	Ambient storage temperature	- 50 .. + 90	°C
m	Mass	375	g
	Standards	EN 50155 : (2001) EN 50124-1: (2001) NFF16101/2:(1988)	

Features

- Insulated plastic case recognized according to UL 94-V0
- Included primary resistor.

Advantages

- Low power
- Excellent accuracy
- Very good linearity
- Low thermal drift
- Low response time
- High bandwidth
- High immunity to external interference
- Low disturbance in common mode.

Applications

- Single or three phases inverter
- Propulsion and braking chopper
- Propulsion converter
- Auxiliary converter
- Battery charger.

Application Domain

- Traction.

Notes: [1] 500 ms every 60 minutes

[2] AV 100-2000 $\hat{V}_P$ = 4500 (1s/h).

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Isolation characteristics

V_d	Rms voltage for AC isolation test [1], 50 Hz, 1 min		
	AV 100-50 to AV 100-500	3.3	KV
	AV 100-750	4.3	KV
	AV 100-1000	5.5	KV
	AV 100-1500 and AV 100-2000	6.5	KV
	Max Common mode voltage	$U_{HT+} + U_{HT-} \leq 4.2$	kV DC
	and	$\lvert U_{HT+} - U_{HT-} \rvert \leq V_{PM}$	
V_e	Partial discharge extinction voltage rms @ 10 pc		
	AV100-50 to AV 100-750	1.1	KV
	AV100-1000 to AV100-2000	2.2	KV
		min	
dCp	Creepage distance	59	mm
dCl	Clearance distance	30	mm
CTI	Comparative tracking index (Group II)	600	

Note : [1] Between primary and secondary.

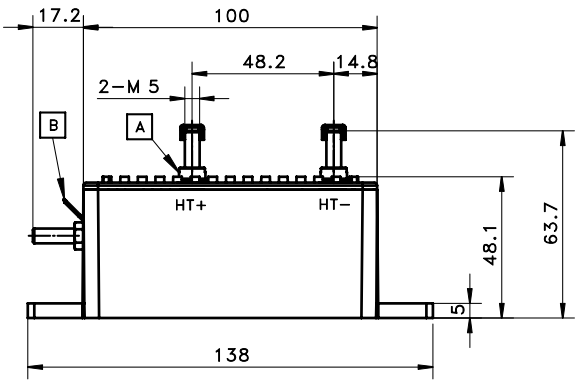
Safety

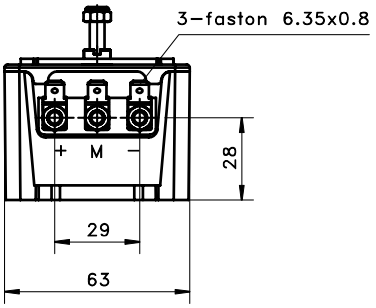
This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the manufacturer's operating instructions.

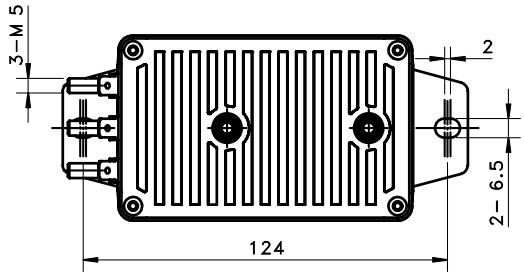
Caution, risk of electrical shock

When operating the transducer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply).
Ignoring this warning can lead to injury and/or cause serious damage.
This transducer is a build-in device, whose conducting parts must be inaccessible after installation.
A protective housing or additional shield could be used.
Main supply must be able to be disconnected.

Dimensions AV 100 Series (in mm)



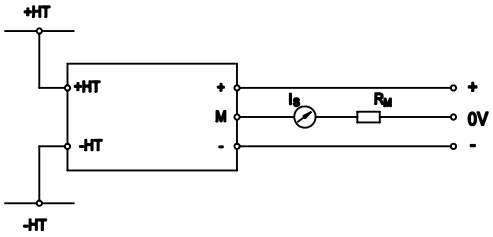




Secondary terminals

Terminal + : Supply voltage + 12 .. 24 V
Terminal M : Measure
Terminal - : Supply voltage - 12 .. 24 V

Connection



Mechanical characteristics

- General tolerance ± 1 mm
- Transducer fastening 2 holes ∅ 6.5 mm
  2 M6 screw
  Distance between holes 124 mm
  Recommended fastening torque 4 Nm
- Fastening & connection of primary 2 M5 threaded studs
  Recommended fastening torque 2.2 Nm
- Fastening & connection of secondary 3 M5 or 3 Faston
  6.35 x 0.8 mm
  Recommended fastening torque 2.2 Nm
  Output connections must be made with screened cables

Remarks

- $\mathbf{I}_S$ is positive when $\mathbf{V}_P$ is applied on terminal +HT.