

Data Sheet for Amplifier

Amplifier for inductive sensors (displacement sensors)

Series IMA2-LVDT



The IMA2-LVDT signal conditioner converts the output signal of a linear inductive sensor to a standardized output signal.

- For all LVDT transducers
- Temp. coefficient <0.02% F.S./°C
- Misc. output signals
- Galvanically isolated

Electrical Data

Supply voltage	24 VDC (18..36 VDC), optional 12 VDC (9..18 VDC)
Power consumption (no load)	max. 80 mA @ 24 VDC, max. 150 mA @ 12 VDC
Supply voltage sensor	1.2 V _{RMS} up to 5 V _{RMS}
Frequency-Supply voltage	2.5 (max. 20) kHz
LVDT-Sensitivity	500 mV _{RMS} / 1000 mV _{RMS} / 1900 mV _{RMS}
Setting range offset	< ±20%
Setting range amplification	< ±50%
Output signal	0..5 V / 0..10 V / ±5 V / ±10 V / 0..20 mA / 4..20 mA
Noise, residual ripple	< 20 mV _{eff}
Linearity deviation	< ±0.01%
Temperature coefficient sensitivity	< ±0.04% /° C
Temperature coefficient zero point	< ±0.015% /° C
Limit frequency / Output (3db)	1 kHz
Insulation resistance 1.)	1 GOhm @ 500 VDC
Insulation voltage1.)	500 VAC, 1 min
Overvoltage max.	40 V

Mechanical Data, Environmental Conditions, Miscellaneous

Housing	UEGM (PhoenixConact)
Mounting	DIN Rail
Operating temperature range	-25 °C up to +85 °C
Storage temperature range	-30 °C up to +85 °C
Mass	ca. 100 g

1.) According IEC 60393

2.) Determined by climatic conditions according to IEC 68-1, para. 5.3.1 without load collectives

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Definition LVDT Sensitivity Class	A	B	C	D
$U_{prim} [V_{RMS}]$ Supply Voltage Sensor @ 100 Ω Load	3.0	3.0	3.0	1.6
$U_{sec} [V_{eff}]$ Output Voltage Sensor @ Input Voltage Amplifier	500 \pm 50%	1000 \pm 50%	1900 \pm 50%	1900 \pm 50%
Excitation frequency	2.5 kHz or 5 kHz			

Sensitivity LVDT	MAC						
	2	5	10	20	50	100	200
Sensitivity class	A	A	B	B	C	D	D
$U_{prim} [V_{RMS}] / U_{sec} [V_{eff}]$	3.0 / 0.5	3.0 / 0.5	3.0 / 1.4	3.0 / 1.5	3.0 / 2.0	1.6 / 1.6	1.6 / 1.6

Sensitivity LVDT	RAC									
	25	50	100	150	200	300	400	500	750	940
Sensitivity class	C	C	D	D	D	D	D	D	D	D
$U_{prim} [V_{RMS}] / U_{sec} [V_{eff}]$	2.7 / 1.9	2.1 / 1.9	1.3 / 1.9	1.3 / 1.9	0.7 / 2.2	0.8 / 2.0	1.3 / 1.9	1.0 / 2.0	0.7 / 2.2	0.7 / 2.5

Sensitivity LVDT	EVT					
	1	2	5	7	10	13
Sensitivity class	A	B	B	C	C	C
$U_{prim} [V_{RMS}] / U_{sec} [V_{eff}]$	3.0 / 0.45	2.9 / 1.0	2.3 / 1.0	2.3 / 1.0	1.9 / 1.0	2.4 / 1.9

Order code						
Description	Selection: standard=black/bold , possible <i>options=grey/italic</i>					
Series:	IMA2-LVDT					
Excitation frequency:						
2,5 kHz			2,5			
5,0 kHz			5			
Sensitivity Class:						
$U_{prim} [V_{RMS}] / U_{sec} [V_{eff}]$ 3,0 / 500 \pm50%				A		
$U_{prim} [V_{RMS}] / U_{sec} [V_{eff}]$ 3,0 / 1000 \pm50%				B		
$U_{prim} [V_{RMS}] / U_{sec} [V_{eff}]$ 3,0 / 1900 \pm50%				C		
$U_{prim} [V_{RMS}] / U_{sec} [V_{eff}]$ 1,6 / 1900 \pm50%				D		
Supply voltage:						
24 V (18..36 VDC)					24 V	
<i>Option 12 V (9..18 VDC)</i>					<i>12 V</i>	
Output signal:						
0..5 V						05
0..10 V						10
\pm5 V						55
\pm10 V						11
<i>Option 0..20 mA</i>						<i>20</i>
<i>Option 4..20 mA</i>						<i>42</i>

For higher quantities or on-going demand, additional options are available on request

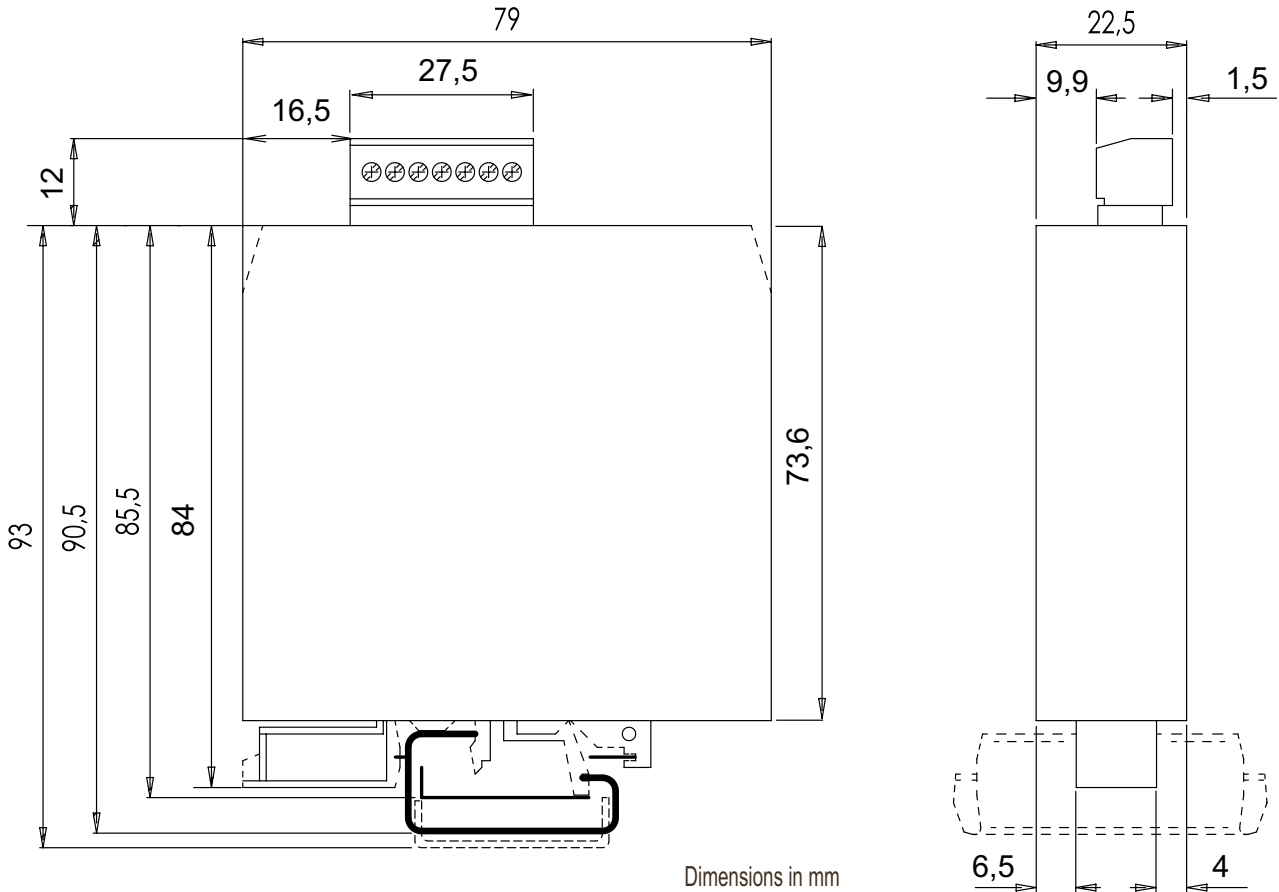
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Drawing



Connection

