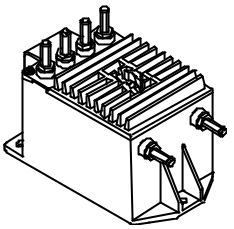
Voltage Transducer CV 3-500

V_{PN} = 350 V

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



Electrical data

V_{PN}	Primary nominal r.m.s. voltage	350	V
V_P	Primary voltage, measuring range	0 .. ± 500	V
V_S	Secondary analog voltage @ $V_{P\ max}$	10	V
K_N	Conversion ratio	500 V / 10 V	
R_L	Load resistance	³ 1	kΩ
C_L	Capacitive loading	£ 5	nF
V_C	Supply voltage (± 5 %)	± 15	V
I_C	Current consumption	32 + V_S / R_L	mA
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn	6	kV
V_e	R.m.s. voltage for partial discharge extinction @ 10 pC	2	kV

Accuracy - Dynamic performance data

			Typ	Max	
X_G	Overall accuracy @ $V_{P\ max}$	T_A = 25°C		± 0.2	%
		- 40°C .. + 85°C		± 0.6	%
V_O	Offset voltage @ V_P = 0	T_A = 25°C		± 5.0	mV
		- 40°C .. + 85°C		± 13.0	mV
t_r	Response time [1] @ 90 % of V_{PN}		0.3		µs
dv/dt	dv/dt accurately followed		500		V/µs
f	Frequency bandwidth (- 1 dB) @ V_{PN}		DC .. 300		kHz

General data

T_A	Ambient operating temperature	- 40 .. + 85	°C
T_S	Ambient storage temperature	- 45 .. + 90	°C
P	Total primary power loss	3.1	W
R_1	Primary resistance	40	kΩ
m	Mass	560	g
	Standards [2]	EN 50155	

Features

- Closed loop (compensated) voltage transducer
- Insulated plastic case recognized according to UL 94-V0
- Patent pending.

Advantages

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

Applications

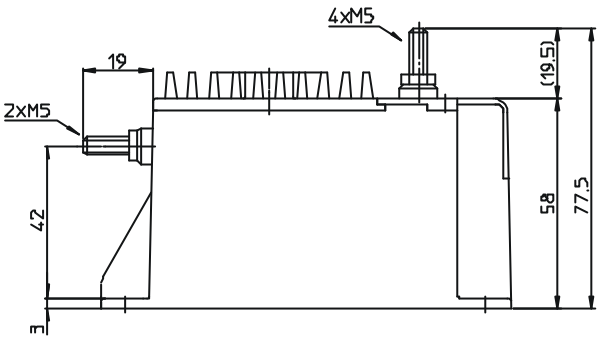
- AC variable speed drives and servo motor drives
- Static converters for DC motor drives
- Uninterruptible Power Supplies (UPS)
- Power supplies for welding applications.

Notes : [1] With a dv/dt of 500 V/µs
[2] A list of corresponding tests is available.

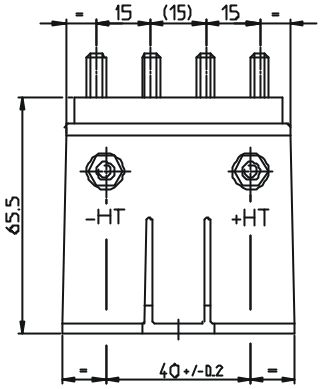
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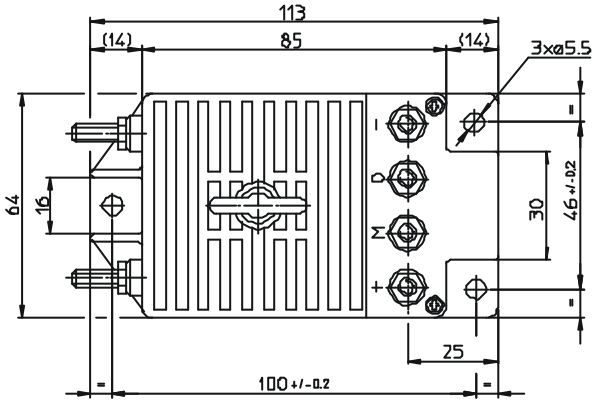
Dimensions CV 3-500 (in mm. 1 mm = 0.0394 inch)

Front view



Left view



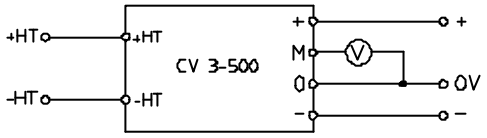


Top view

Secondary terminals

Terminal + : supply voltage + 15 V
Terminal M : measure
Terminal 0 : 0 V
Terminal - : supply voltage - 15 V

Connection



Mechanical characteristics

• General tolerance	± 0.3 mm
• Fastening	3 holes ∅ 5.5 mm
• Connection of primary	M5 threaded studs
• Connection of secondary	M5 threaded studs
• Fastening torque	2.2 Nm or 1.62 Lb. -Ft.

Remarks

- $\mathbf{V}_S$ is positive when $\mathbf{V}_P$ is applied on terminal +HT.
- CEM tested with a shielded secondary cable.
  Shield connected to 0 V at both ends, or disconnected.
- This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.

LEM reserves the right to carry out modifications on its transducers, in order to improve them, without previous notice.