Voltage Transducer CV 3-1500

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 = 1000 V
- $V_p$: Primary voltage, measuring range = 0 ± 1500 V
- $V_s$: Secondary analog voltage @ $V_p_{\text{max}}$ = 10 V
- $K_n$: Conversion ratio = 1500 V / 10 V
- $R_l$: Load resistance = 1 kΩ
- $C_l$: Capacitive loading = 5 nF
- $V_s$: Supply voltage (± 5 %) = ± 15 V
- $I_c$: Current consumption = 32 mA
- $V_r$: 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**

- $X_o$: Overall accuracy @ $V_p_{\text{max}}$
  - $T_s = 25^\circ\text{C}$
  - $-40^\circ\text{C} \ldots + 85^\circ\text{C}$
  - Typ: ± 0.2 %
  - Max: ± 0.6 %
- $V_o$: Offset voltage @ $V_p = 0$
  - $T_s = 25^\circ\text{C}$
  - $-40^\circ\text{C} \ldots + 85^\circ\text{C}$
  - Typ: ± 5.0 mV
  - Max: ± 13.0 mV
- $t_r$: Response time 1) @ 90 % of $V_p_{\text{max}}$ = 0.4 µs
- $dv/dt$: dv/dt accurately followed = 900 V/µs
- $f$: Frequency bandwidth (-1 dB) @ 33 % of $V_{PN}$ = DC .. 800 kHz

**General data**

- $T_o$: Ambient operating temperature = -40 .. + 85 °C
- $T_s$: Ambient storage temperature = -45 .. + 90 °C
- $P$: Total primary power loss = 2.8 W
- $R_l$: Primary resistance = 360 kΩ
- $m$: Mass = 560 g
- Standards = EN 50155

Note: 1) With a $dv/dt$ of 900 V/µs

**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
- Railway overhead line voltage measurement.

$V_{PN} = 1000$ V

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Dimensions CV 3-1500 (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
- Transducer fastening 3 holes Ø 5.5 mm 3 M5 steel screws
- Fastening torque max 4 Nm or 2.95 Lb. - Ft.
- Connection of primary M5 threaded studs
- Connection of secondary M5 threaded studs
- Fastening torque max 2.2 Nm or 1.62 Lb. - Ft.

**Remarks**
- $V_s$ is positive when $V_p$ 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.