Isolated Voltage Sensor COSY-125

Features :

- Low Power
- High accuracy
- Fast response Time
- High accuracy low drift
- High immunity to external interference
- Current Output
- RoHS & REACH compliant

COSY series are voltage sensor for accurate measurement of DC, AC, Pulse, and arbitrary voltage signal with galvanic isolation between the primary and secondary circuits.

Code	Part Number	Connector
20003333101263	COSY-125	M5 Studs

Application Domaine:

- Railway
- Industrial

Applications :

- Battery supplie applications.
- Uninterruptible Power Supplies (UPS).
- Static Converter for Motor drives.
- Inverter and variable frequency drives.
- Power supplies for welding application.
- Switching power suppliers
- Renewable Energy (solar & Wind)
- High Power Drives.
- Auxiliary converters.
- Propulsion converters.
- Three phase or single inverters.
- Substations.

Part Number	Primary Nominal Voltage	Pimary Voltage Measuring Range
COSY-125	**125V**	**±180 V**

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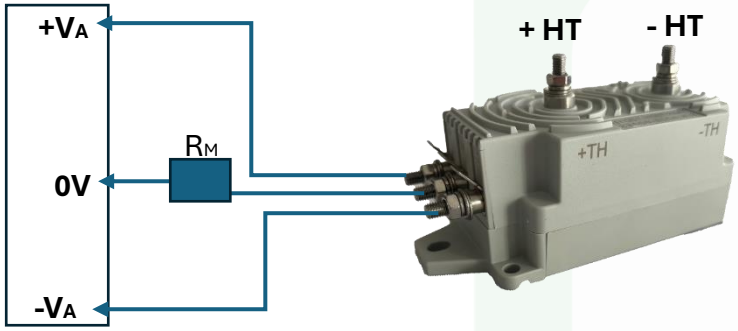
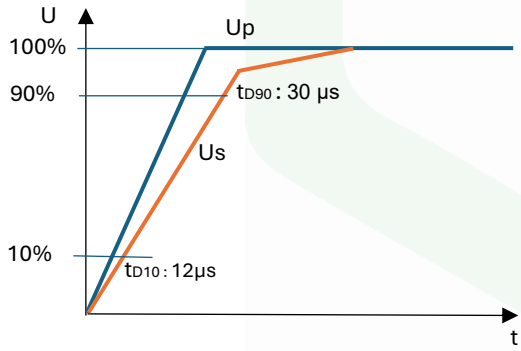
Bi-directional power supply

The primary voltage to be measured is applied directly to the +HT and -HT terminals of the sensor. This voltage passes through an isolating amplifier and is then converted into a secondary output current Is. This secondary current Is is electrically isolated from the primary voltage, to which it is exactly proportional. The voltage sensor measures instantaneous values.



The secondary current Is can then flow through a measuring resistor R_M . The measurement voltage V_M across this measurement resistor R_M is therefore also exactly proportional to the primary voltage. The sensor power supply is also isolated from the primary voltage.

The delay time tD10 and the delay time tD90 are sown in the figure beside, both depend on the primary voltage dv/dt



Insulation and Environmental Characteristics

Parameters	Symbol	Typ.	Unit
Dielectric Strength	V_D	8.5	KV (50 Hz,1min)
Insulation Resistance	R_{IS}	1000	MΩ
Creepage Distance	d_{CP}	60	mm
Clearance	d_{CL}	43	mm
Ambient Operating Temperature	T_A	-40 To 85	°C
Ambient Storage Temperature	T_{STG}	-45 To 90	°C
Mass	m	320	g
Note	Insulated plastic case recognized according to UL 94-V0		

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Specifications:

T_A = +25°C , V_{CC} = ± 24V , R_M = 120 Ω , unless otherwise noted

Parameter	Symbol	Condition	Min	Typ	Max	Unit
ELECTRICAL DATA						
Primary nominal r.m.s Voltage	V_{PN}		-	125	-	V
Primary Voltage measuring range	V_{PM}		-180	-	180	V
Secondary nominal r.m.s. current	I_{SN}		-	50	-	mA
Secondary Maximam Output	I_{out}		-	-	75	mA
Measuring resistance	R_M	±12V	0	-	47	Ω
		±24V	0	-	200	Ω
Supply Voltage	V_{CC}	±5%	±12	-	±24	V
Quincent Current	I_C	V_{CC} = ± 24V, I_P=0	-	20	-	mA
Sensitivity	S	Vp=0 To ± V_{PN}	399.2	400	400.8	µA/A
Power-On Time	T_{ON}	-	-	190	250	ms
Output Noise	I_{NOISE}	1KHz – 100 KHz	-	10	-	µA
Primary Power	P	V_p = V_{PN}	-	0.2	-	W
STATIC PERFORMANCE DATA						
Linearity Error	ε_L	Vp=0 To ± V_{PN}	-	0.5	-	%
Accuracy	X	Vp=0 To ± V_{PN}	-	±0.7		%V_{PN}
Sensitivity Error	ε_S	T_A= -40°C To +85°C Vp=0 To ± V_{PN}	-	±0.5		%V_{PN}
di/dt accurately followed	di/dt	-	100	-	-	A/µs
Frequency Bandwidth	Bw	-3 dB	-	14	-	kHz
		-1 dB	-	8	-	
		-0.1 dB	-	2	-	
Response Time	Tr	10% to 90% of V_{PN}	-	30	-	µs

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DIMENSIONS

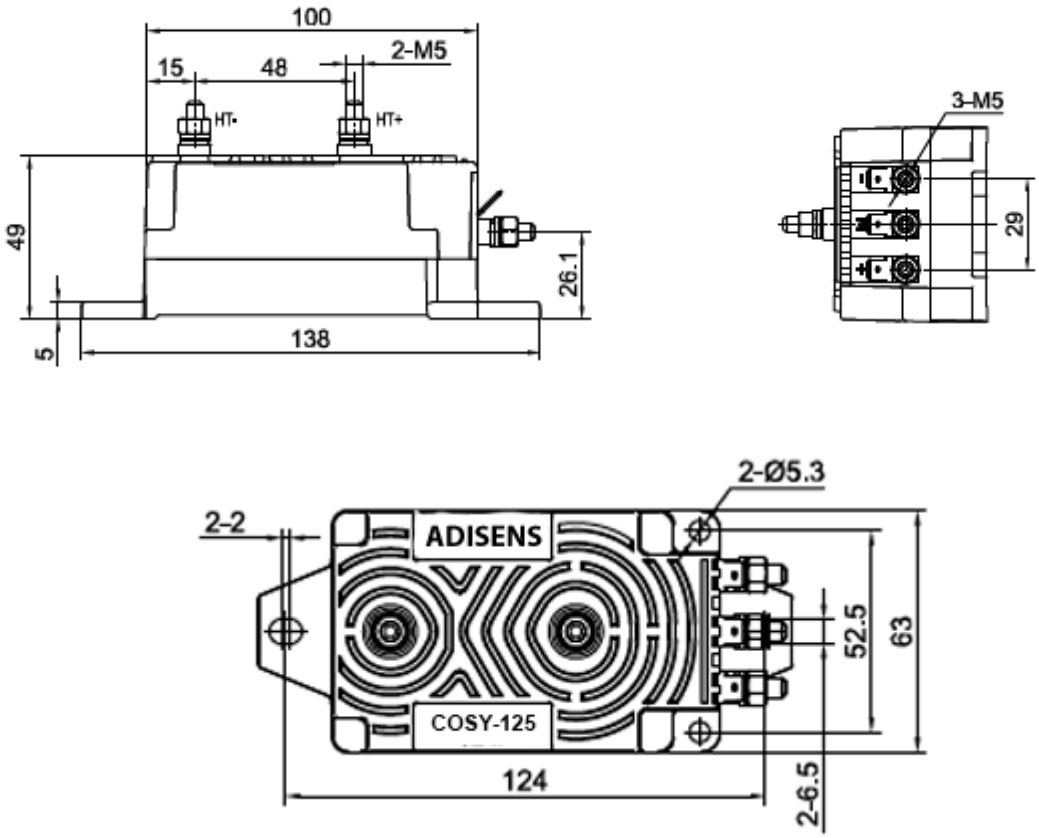
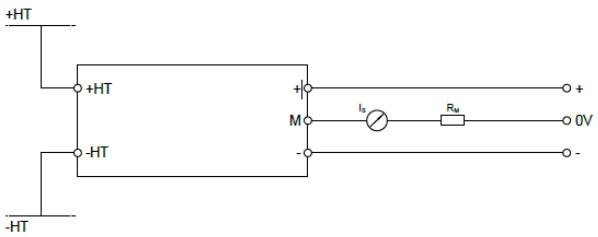


Figure : Dimension (unit: mm, tolerances for unmarked scales ±1 mm)



Mounting Recommendation

1. Mounting method: 2 × Φ 6.5 mm slotted holes

2 × M6 copper or SS304 screws (Recommended torque 2.5 N·m)

2. Primary connection dimensions: 2 × M5 thread post

3. Secondary connection: 3 × M5 thread post or 6.3 mm × 0.8 mm terminal

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