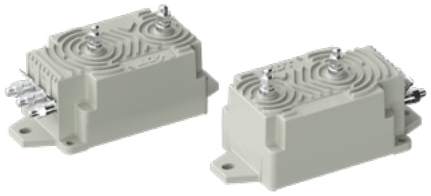
TMR7901-B

Isolated Voltage Sensor

Description

TMR7901-B series are voltage sensor for accurate measurement of DC, AC, Pulse, and arbitrary voltage signal with galvanic isolation between the primary and secondary circuits.



Features and Benefits

- Low power
- Compact design
- High accuracy low drift
- Fast response
- High immunity to external interference
- RoHS & REACH compliant

Applications

- Single or three phase inverters
- Breaking choppers
- Substation
- High power drive unit

Selection Guide

Part Number	Primary Nominal Voltage	Primary Measuring Range
TMR7901-0500B	50 V	±75 V
TMR7901-1250B	125 V	±180 V
TMR7901-1500B	150 V	±220 V
TMR7901-2500B	250 V	±350 V
TMR7901-5000B	500 V	±750 V
TMR7901-7500B	750 V	±1200 V
TMR7901-1001B	1000 V	±1500 V
TMR7901-1501B	1500 V	±2250 V
TMR7901-2001B	2000 V	±3000 V

Insulation and Environmental Characteristics

Parameters	Symbol	Typ.	Unit
Dielectric Strength	V_D	8.5	kV(50 Hz, 1 min)
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

Catalogue

1. Specifications

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

Parameter	Symbol	Condition		Min.	Typ.	Max.	Unit
General Electrical Data							
Primary Nominal Voltage	V_{PN}	TMR7901-0500B		-	50	-	V
		TMR7901-1250B		-	125	-	
		TMR7901-1500B		-	150	-	
		TMR7901-2500B		-	250	-	
		TMR7901-5000B		-	500	-	
		TMR7901-7500B		-	750	-	
		TMR7901-1001B		-	1000	-	
		TMR7901-1501B		-	1500	-	
		TMR7901-2001B		-	2000	-	
Primary Measuring Range	V_{PM}	TMR7901-0500B		-75	-	75	V
		TMR7901-1250B		-180	-	180	
		TMR7901-1500B		-220	-	220	
		TMR7901-2500B		-350	-	350	
		TMR7901-5000B		-750	-	750	
		TMR7901-7500B		-1200	-	1200	
		TMR7901-1001B		-1500	-	1500	
		TMR7901-1501B		-2250	-	2250	
		TMR7901-2001B		-3000	-	3000	
Sensitivity	S	V_P = 0 to ±V_{PN}	TMR7901-0500B	998	1000	1002	μA/V
			TMR7901-1250B	399.2	400	400.8	
			TMR7901-1500B	332.67	333.33	334	
			TMR7901-2500B	199.6	200	200.4	
			TMR7901-5000B	99.8	100	100.2	
			TMR7901-7500B	66.53	66.67	66.8	
			TMR7901-1001B	49.9	50	50.1	
			TMR7901-1501B	33.27	33.33	33.4	
			TMR7901-2001B	24.94	25	25.06	
Supply Voltage	V_{CC}	±5 %		±12	-	±24	V
Quincent Current	I_C	V_{CC} = ±24V, I_P = 0		-	20	-	mA
Secondary Nominal Output	I_{OUT}	-		-	50	-	mA
Secondary Maximum Output	I_{OUTMAX}	-		-	-	75	mA
Measuring Resistance	R_M	V_{CC} = ±12V		0	-	47	Ω
		V_{CC} = ±24V		0	-	200	
Power-On Time	T_{ON}	-		-	190	250	ms
Output Noise	I_{NOISE}	1kHz ~ 100kHz		-	10	-	μA
Primary Power	P	V_P = V_{PN}		-	0.2	-	W

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Static Performance Data						
Accuracy	X_G	V_P = 0 to ±V_{PN}	-	±0.5	-	% V_{PN}
Sensitivity Error	ε_S	T_A = -40 °C to +85 °C, V_P = 0 to ±V_{PN}	-	±0.4	-	% V_{PN}
Linearity	ε_L	V_P = 0 to ±V_{PN}	-	±0.1	-	%
Dynamic Performance Data						
Response Time	t_R	10% to 90% of V_{PN}	-	30	-	μs
Bandwidth	BW	-3 dB	-	14	-	kHz
		-1 dB	-	8	-	
		-0.1 dB	-	2	-	
Following Accuracy	di/dt	-	100	-	-	A/μs

2. Application Information

Electrical Connection

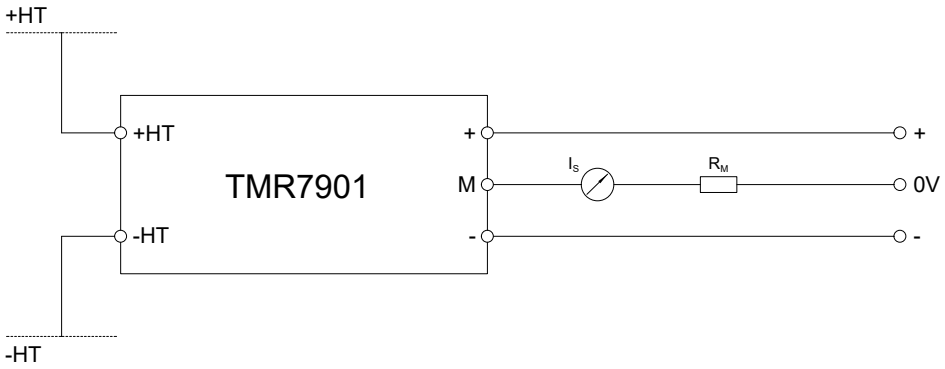


Figure 1. Electrical Connection

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

3. Dimensions

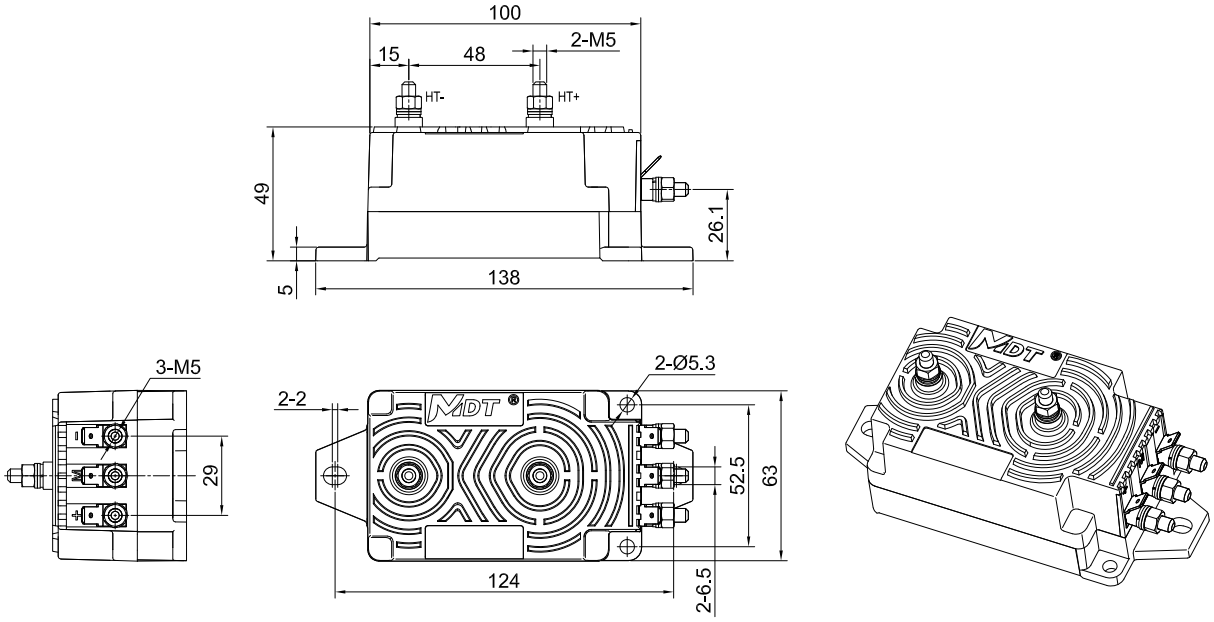


Figure 2. Dimension (unit: mm, tolerances for unmarked scales ±1 mm)

Recycling

The product(s) in this document need to be handed over to a qualified solid waste management services company for recycling in accordance with relevant regulations on waste classification after the end of the product(s) life.

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