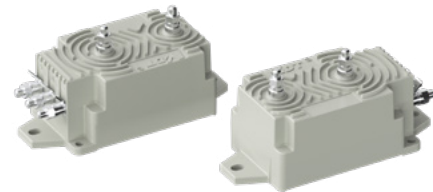


TMR7901-B

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

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1. Specifications

$T_A = +25\text{ }^\circ\text{C}$, $V_{CC} = \pm 24\text{ V}$, $R_M = 120\text{ }\Omega$, 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	$V_P = 0\text{ to } \pm V_{PN}$	TMR7901-0500B	998	1000	1002	$\mu\text{A/V}$
			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}	$\pm 5\%$	± 12	-	± 24	V	
Quincent Current	I_C	$V_{CC} = \pm 24\text{V}$, $I_P = 0$	-	20	-	mA	
Secondary Nominal Output	I_{OUT}	-	-	50	-	mA	
Secondary Maximum Output	I_{OUTMAX}	-	-	-	75	mA	
Measuring Resistance	R_M	$V_{CC} = \pm 12\text{V}$	0	-	47	Ω	
		$V_{CC} = \pm 24\text{V}$	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	$V_P = 0 \text{ to } \pm V_{PN}$	-	± 0.5	-	% V_{PN}
Sensitivity Error	ϵ_S	$T_A = -40 \text{ }^\circ\text{C to } +85 \text{ }^\circ\text{C}, V_P = 0 \text{ to } \pm V_{PN}$	-	± 0.4	-	% V_{PN}
Linearity	ϵ_L	$V_P = 0 \text{ to } \pm V_{PN}$	-	± 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

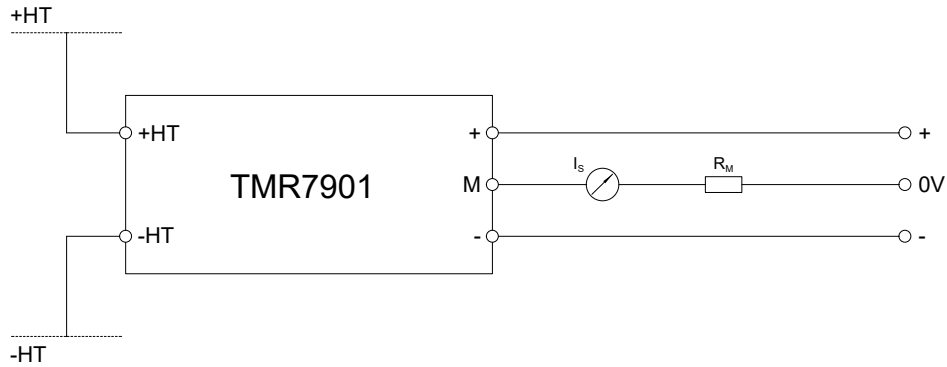


Figure 1. Electrical Connection

Mounting Recommendation

1. Mounting method: $2 \times \Phi 6.5$ mm slotted holes
 $2 \times$ M6 copper or SS304 screws (Recommended torque 2.5 N·m)
2. Primary connection dimensions: $2 \times$ M5 thread post
3. Secondary connection: $3 \times$ M5 thread post or 6.3 mm \times 0.8 mm terminal

3. Dimensions

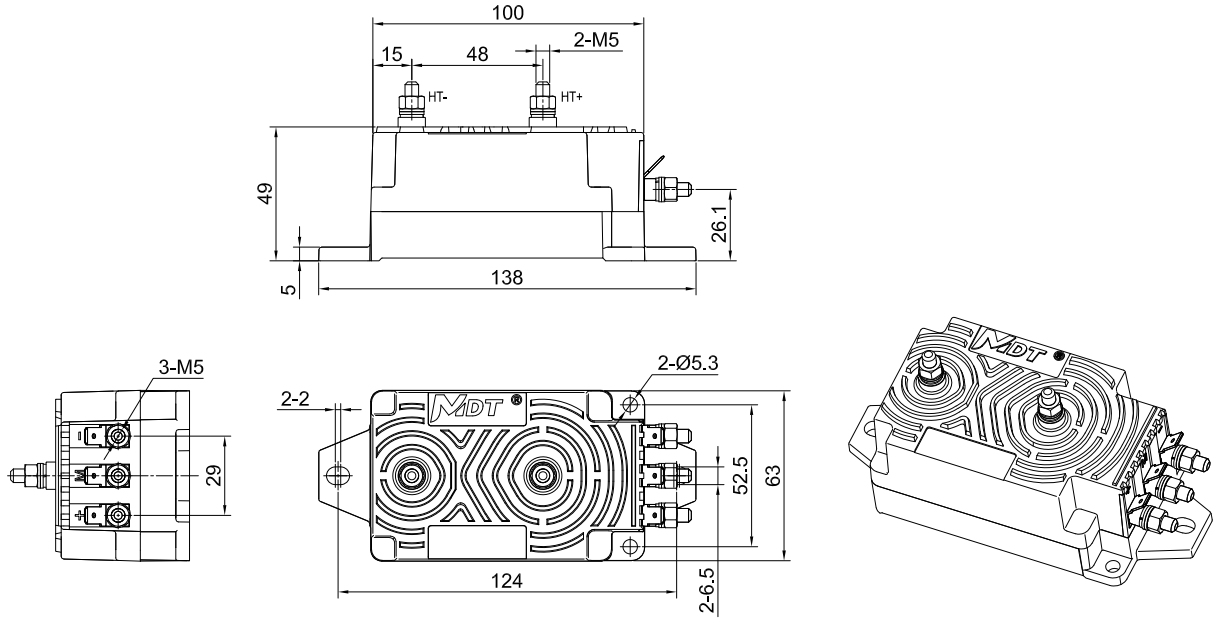


Figure 2. Dimension (unit: mm, tolerances for unmarked scales ± 1 mm)

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