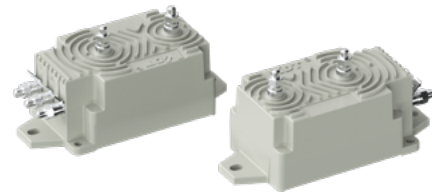


# TMR7901-B

## 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	33.27	33.33	33.4	
Supply Voltage	$V_{CC}$	$\pm 5\%$	$\pm 12$	-	$\pm 24$	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	$\Omega$	
		$V_{CC} = \pm 24\text{V}$	0	-	200		
Power-On Time	$T_{ON}$	-	-	190	250	ms	
Output Noise	$I_{NOISE}$	1kHz ~ 100kHz	-	10	-	$\mu\text{A}$	
Primary Power	P	$V_P = V_{PN}$	-	0.2	-	W	

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Static Performance Data						
Accuracy	$X_G$	$V_P = 0 \text{ to } \pm V_{PN}$	-	$\pm 0.7$	-	% $V_{PN}$
Sensitivity Error	$\epsilon_S$	$T_A = -40 \text{ }^\circ\text{C to } +85 \text{ }^\circ\text{C}, V_P = 0 \text{ to } \pm V_{PN}$	-	$\pm 0.5$	-	% $V_{PN}$
Linearity	$\epsilon_L$	$V_P = 0 \text{ to } \pm V_{PN}$	-	0.5	-	%
Dynamic Performance Data						
Response Time	$t_R$	10% to 90% of $V_{PN}$	-	30	-	$\mu\text{s}$
Bandwidth	BW	-3 dB	-	14	-	kHz
		-1 dB	-	8	-	
		-0.1 dB	-	2	-	
Following Accuracy	di/dt	-	100	-	-	A/ $\mu\text{s}$

## 2. Application Information

### Electrical Connection

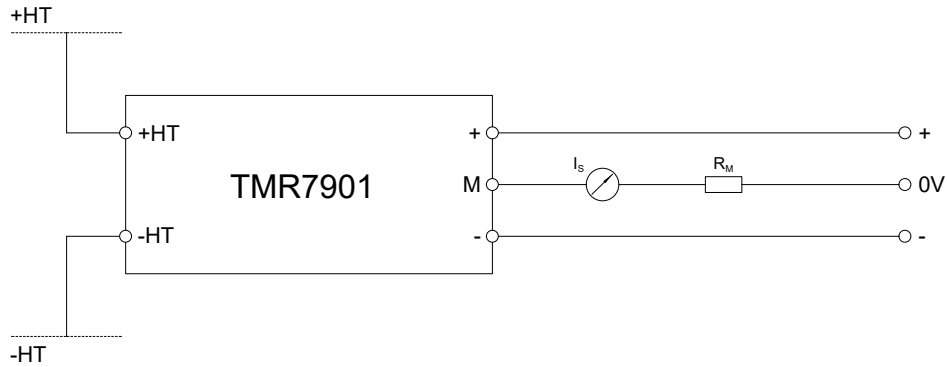


Figure 1. Electrical Connection

### 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

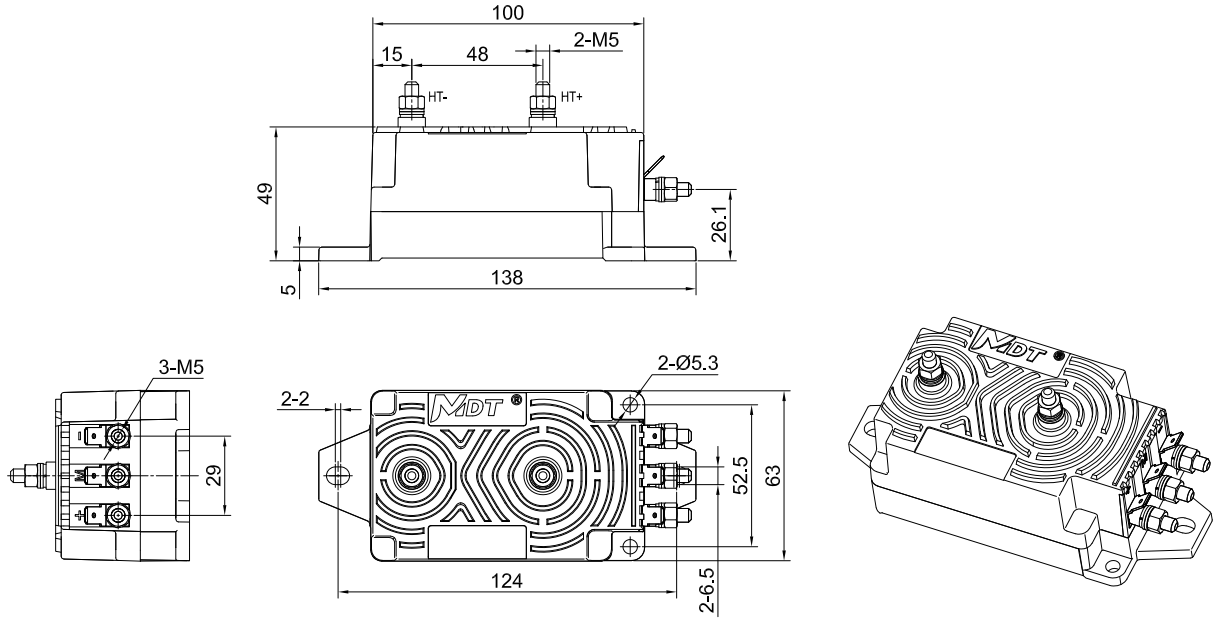


Figure 2. Dimension (unit: mm, tolerances for unmarked scales  $\pm 1$  mm)

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