

ITX-RMS-MSTB Isolating Current to RMS Transmitter Module

The ITX-RMS-MSTB module measures the RMS of its input waveform and outputs a corresponding DC value. The input is intended to connect to a 50 mA current shunt as its input. The input signal is amplified to produce a 0-10 (or optionally, 0-5) Volt signal and converted to RMS. Both the inputs and outputs of the module are electrically isolated from each other and from the 24V supply.

The Module is housed in a DIN Rail mountable Phoenix UEGM-MSTB housing. Two indicator LEDs show that the internal isolating power supplies are operational.

Connections to the module are via removable terminal blocks provided with the module.

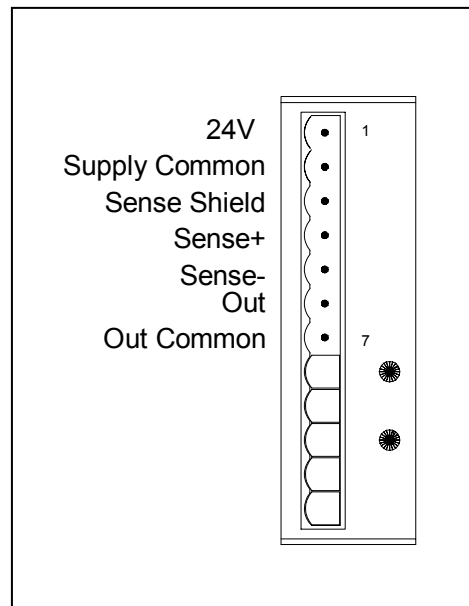


Figure 1: Block Diagram of ITX-RMS-MSTB

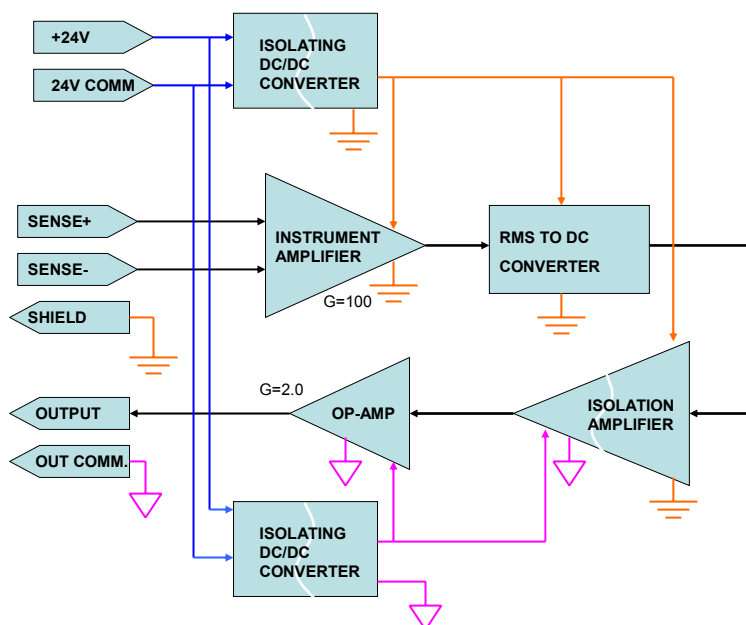


Table 1: Connections to the Module

PIN	NAME	DESCRIPTION
1	24V	24V power supply for module.
2	Supply Common	Return for 24V power supply.
3	Sense Shield	Connect to Shield of wire connected to sense. DO NOT CONNECT THE OTHER END OF THE SHIELD TO ANYTHING!!
4	Sense+	Connect to the positive side of the current shunt. NOTE: Electrically isolated from power supply and analog output.
5	Sense-	Connect to the negative side of the current shunt. NOTE: Electrically isolated from power supply and analog output.
6	Out	Output of the module is DC representation of RMS input. Full-scale output (10/5 Volts) corresponds to 50 mV full-scale RMS input. Full scale must be specified as 10V or 5V when ordering. Note this output is electrically isolated from power supply and from sense input terminals.
7	Out Common	Return for analog output. Note this is electrically isolated from power supply and from sense input terminals.



ITX-RMS-MSTB MODULE SPECIFICATIONS		
POWER SUPPLY		
Supply Voltage	24 Volts DC	
Supply Current	65 mA (typical) 300 mA (power-on inrush)	
Power supply for module is electrically isolated from both input and output ports.		
INPUT		
Type	differential	
Signal Level	+/- 50	mV full scale (differential)
Impedance	200	Kilo Ohms
Input Frequency	DC to 10KHz PWM	
NOTE: Accuracy decreases for RMS measurement of PWM as frequency increases above 10 KHz, with smaller duty cycle and higher frequency.		
OUTPUT		
Type	Single-ended, Isolated from input and power supply.	
Signal Level	0-FS Volts DC	FS = 5.0 or 10.0 Volts out for 50mV in.
Minimum load impedance	1 Kilo Ohm	
DC gain	100/200	
Settling Time	1500 mS	1% accuracy

Ordering Information

The ITX-RMS-MSTB is factory configurable for various output gain scaling. Default output full scale values are 5.0 and 10.0 Volts. Contact factory for custom gain scaling.

ITX-RMS-MSTB-5.0	- Output scaled to 5.0V DC for 50mV RMS input
ITX-RMS-MSTB-10.0	- Output scaled to 10.0V DC for 50mV RMS input