

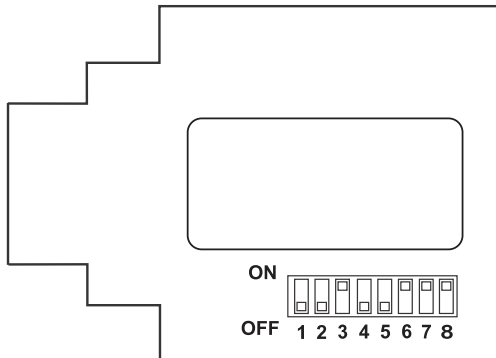
TRANCEL

3-Phase Power to Modbus Transmitter

Model TMP3100

Specifications

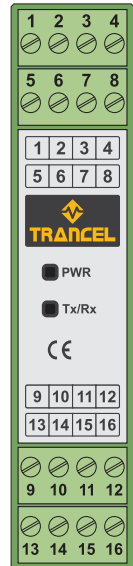
Operating Voltage	21.6~26.4vDC
Power Consumption	< 1W
Operating Temperature	-10 °C ~ 60 °C
Input Voltage max	350 VRMS
Input Current max	5 ARMS
A/D Sampling speed	8Khz
Update rate	1Hz
Baud Rates	9600 ~ 115200 bps
Isolated RS-485 port	Max 2500 VRMS
Size (mm)	115 x 100 x 23



Dipswitches figure

Pin Configuration

- 1- D+ (RS-485)
- 2- D- (RS-485)
- 3- Supply -24vDC
- 4- Supply +24vDC
- 5- Voltage CH 3
- 6- Null
- 7- CT CH 3 (B)
- 8- CT CH 3 (A)
- 9- CT CH 2 (A)
- 10- CT CH 2 (B)
- 11- Null
- 12- Voltage CH 2
- 13- CT CH 1 (A)
- 14- CT CH 1 (B)
- 15- Null
- 16- Voltage CH 1



1) Safety points

Since the system connections are connected to non-isolated high voltage, the following safety considerations are essential.

1. In wiring, maximum precision should be done. A small mistake will cause the device to damage.
2. As you know, usually the secondary wires of CTs are isolated. But due to the internal structure of the device, after being connected to transmitter they will no longer be isolated from the main power. Therefore, precaution must be taken to insulate and protect them.
3. Disconnect all power to this unit before removing any connection, opening the enclosure or servicing.
4. Pins 6, 11 and 15 (Null) are interconnected and they are for null connecting only.

No.	Register	Address	PLC Address	R/W	SIZE	Default
1	Serial Number	1	40002	R	D-Int	-
2	CH-A RMS current	10	40011	R	Int	-
3	CH-B RMS current	11	40012	R	Int	-
4	CH-C RMS current	12	40013	R	Int	-
5	CH-A RMS Voltage	13	40014	R	Int	-
6	CH-B RMS Voltage	14	40015	R	Int	-
7	CH-C RMS Voltage	15	40016	R	Int	-
8	Frequency (CH-A)	16	40017	R	Int	-
9	CH-A CT Primary	20	40021	R/W	Int	100
10	CH-B CT Primary	21	40022	R/W	Int	100
11	CH-C CT Primary	22	40023	R/W	Int	100
12	CT Secondary (1-5)	23	40024	R/W	Int	5

2) By reading address [1], the serial number of the device which is an 8 digit (32 bits) is received. The first four digits of this number is 3100 and writing on this address is impossible. Addressing format for the 32 bit registers is adjustable (section 12).

3) Excepting the device serial number, other registers, which are explained bellow, are 16-bit Integer (1 word). Reading consequent addresses with only one request message is not possible in this device. So, a 16 bit word request needs to be sent in order to read each channel.

4) The RMS of the input current is readable at the addresses [10] to [12]. These registers are in deciamperes (0.1A). For example, if you read the value 567 from these addresses, the RMS current through that phase is 56.7A.

5) The RMS value of the three-input voltage is readable at addresses [13] to [15]. These registers are rated at decivolts (0.1V). For example, if one reads 2315, its RMS voltage is 231.5V.

6) The address [16] is related to the frequency of the line that is read only from the voltage input of channel A. If this input is not connected, the value of this registry will be zero. This registry is in 0.1 of Hz.

7) Addresses [20] to [22] can be used to write the primary rate of current transformers (CTs). These registers can be modified from 50 to 1500. Obviously, if higher values are entered, the last digit (0.1A) will be useless.

8) An address (register) is defined for entering secondary rate of the three CTs and It is just accepts 1 and 5.

9) Adjusting the device address in the Modbus network (S1 to S5): To modify the device address in the Modbus network, switches S1 to S5 can be used and up to 32 devices can be addressed according to the table below.

St-No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
S1	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On
S2	Off	Off	On	On	Off	Off	On	On	Off	Off	On	On	Off	Off	On	On
S3	Off	Off	Off	Off	On	On	On	On	Off	Off	Off	Off	On	On	On	On
S4	Off	Off	Off	Off	Off	Off	Off	Off	On	On	On	On	On	On	On	On
S5	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
St-No	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
S1	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On
S2	Off	Off	On	On	Off	Off	On	On	Off	Off	On	On	Off	Off	On	On
S3	Off	Off	Off	Off	On	On	On	On	Off	Off	Off	Off	On	On	On	On
S4	Off	Off	Off	Off	Off	Off	Off	Off	On	On	On	On	On	On	On	On
S5	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On

10) Serial port settings (S6 & S7): Other RS485 port settings are fixed and they are as follows.

Baud Rate	9600	19200	38400	115200
S6	Off	On	Off	On
S7	Off	Off	On	On

11) Fixed serial port parameters:

Data Bits	Parity	Stop Bits
8	None	1

12) Double integer registers format (S8):

Modbus RTU High-Low: In two word registers, the data is stored to the registers in big-endian format. Least significant word is stored to the highest register address; and most significant word is stored to the lowest register address.

Modbus RTU Low-High: In two word registers, the data is stored to the registers in little-endian format. Least significant word is stored to the lowest register address; and most significant word is stored to the highest register address.

S8	ON (High-Low)	OFF (Low-High)
PLC or HMI	PLC SIEMENS S7-200	PLC FATEC
	PLC Co-Trust	PLC DELTA
	HMI Panel Master (PM)	

Important notice: All changes to the DIP switches mode will affect when the device's turn-on.