



## TPT-20 Tap Position Transmitter

Masibus Model TPT-20 is a 4 wire Tap Position Transmitter that isolates & converts the resistance input corresponding to the tap position of transformer and the Output is Proportional to Tap position of Transformer thus providing Visual and Electrical Output of Tap Position. The analog output can be further connected to RTU, Logger, PLC, Control units etc.

Model TPT-20 accepts the input range of 0-2.5K $\Omega$  or 0-25K $\Omega$ . A built-in 4 digit Red LED display facilitates the user to monitor the tap position and helps in fast and easy configuration and calibration. Tap number is programmable upto 100 via keypad and tap change-over delay is 1-60 sec field programmable.

Model TPT-20 offers excellent accuracy and stability for reliable operation in hostile environments. TPT-20 has three port Isolation between Input, Output and Power supply

TPT-20 has optional two relays for alarm purpose along with optional isolated serial communication on RS485 over MODBUS RTU protocol for interfacing with SCADA/PLC, PC based data acquisition and reporting system. Additionally TPT-20 has upto two completely isolated retransmission outputs wherein 2<sup>nd</sup> output is optional.

### Features

- Microcontroller based
- Compact DIN rail mounting
- 4 digit Red Digital Display for Tap position
- Easy configuration using keys & display
- Programmable Tap number upto 100
- Dual Isolated Retransmission output
- Two Relay Output for Alarm (Optional)
- Modbus protocol on RS485 (Optional)
- Tap Change counter

### Applications

- Electrical or Energy Management Systems
- SCADA
- Central Monitoring Systems
- OLTC / Power Stations

# TECHNICAL SPECIFICATIONS

Input		Power Supply				
No. of Input	One	Standard	85-265VAC/ 100-300VDC			
Input Type	Tap Resistance, 3-Wire/4-Wire	Optional	18-36VDC			
Maximum Tap Resistance	Refer Table-1	Power consumption	<10 VA			
Per Tap Resistance	Programmable (Refer Table-1)	<b>Isolation (Withstanding voltage)</b>				
No. of Tap	Programmable upto 100	* Three port isolation i.e. between input/output/power supply (1500VAC for 1 minute)				
	(( High Tap Value- Low Tap Value) x Tap Resistance) ) must be less than Maximum Tap Resistance	<b>Insulation resistance:</b> 20MΩ or at 500 V DC between input, output and power supply.				
Tap Change Counter	Upto 9999. After 9999, Counter automatically reset to 0. User can manually reset to 0 at any time.	<b>Physical</b>				
Tap Delay	1 - 60 Seconds (Field Configurable)	Dimension	55(W) x 75(H) x 110(D) mm			
Temp-co	I/P to Display: <100 ppm Display to O/P: <150 ppm	Mounting	Din Rail			
		Terminal Cable Size	2.5mm <sup>2</sup>			
		Weight	< 250 gm			
		Ingress Protection	IP20			
Display & Keys		Environmental				
Display Size	0.3" 4 digit 7 segment Red LED	Operating temperature	0-55 °C			
Status Indication	Red LED's, 2 nos for Relays, 2 nos for Communication	Storage temperature	0-80 °C			
Keys	3 keys (ENT, SEL & ESC) for configuration, calibration and Operation	Humidity	20-95 %RH non-condensing			
Output		Table-1				
<b>Relay Output (Optional)</b>		Model	Measuring Ranges			
Relays	2 Nos.		Limits	Min. Span	Max. Span	Min. Tap Resistance
Type	Single Change over (C, NO, NC)	Option 1	0-2500Ω	100Ω	2500Ω	100Ω
Rating	2A @ 230VAC / 30VDC	Option 2	0-25000Ω	250Ω	25000Ω	250Ω
Relay Alarm Functions	Tap Position, Tap Counter, Open Sensor	#For Option 1, Current Source = 800uA and For Option 2, Current Source = 80uA				
<b>Retransmission Output</b>						
Number of output	upto 2 nos (2 <sup>nd</sup> o/p is Optional)					
Output Signal	4-20mA/ 0-20mA/1-5VDC/ 0-5VDC/0-10V DC					
Load resistance						
For Current o/p	< 750Ω					
For Voltage o/p	> 4KΩ					
Output accuracy	±0.25% of Full Scale					
<b>Communication (Optional)</b>						
Interface	RS485 (2 Wire)					
Protocol	Modbus-RTU					
Communication Method	2 wire half duplex					
Data Frame	N, 8, 1					
Baud rate	4800, 9600, 19200 bps					
Address Range	001 to 247					

## Ordering code

Model	Input Range	Power Supply	O/P type-1	O/P type-2	Relay O/P	Communication O/P
<b>TPT-20</b>	<b>X</b>	<b>XX</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
1	0 - 2.5KΩ	U1 85 -265VAC/ 100 -300VDC	1 4-20mA	0 None	N None	N None
2	0 - 25KΩ	U2 18 -36VDC	2 0-20mA	1 4-20mA	Y Yes	Y Yes
			3 1-5VDC	2 0-20mA		
			4 0-5VDC	3 1-5VDC		
			5 0-10VDC	4 0-5VDC		
			S Special	5 0-10VDC		
				S Special		