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Data Sheet

RISH CON-TPT

Programmable Tap position transducer with dual output, display and modbus

RoHS CE

Measure Control Record Analyze Optimize

Application

The purpose of theTap position transducer is to convert tap position of transformers to equivalent analogue output. Outputs can be given as input to either RTU or indicator or recording instrument.

Input variable and measuring range are programmed with the aid of a PC and the configuration software.

The device has one input channel and two independent outputs and Modbus (RS 485) interface . Input variables and measuring range are also programmable through keys and Modbus .

Features / Benefits

1. Input measuring range can be programmed using PC (config soft) / Simplifies project planning and engineering (the final range can be determined during commissioning).
2. Input measuring range can be programmed through modbus and keys.
3. Tap number is programmable from 0 to 101 using software.
4. Tap position is displayed on front LED display and on Modbus.
5. Analogue output signal also programmed using the PC (config-software) , Modbus and keys. (impressed current or superimposed voltage for all ranges between–20 and + 20 mADC resp.–12 and + 15 V DC)
6. Galvanic and optical isolation between Power supply, Input and outputs
7. 3,4 wire measurement to compensate lead resistance automatically.
8. 2 wire measurement with lead resistance compensation through software.
9. Tap counter (number of tap changed) can be viewed on Modbus.

Function

Tap position transducers receives resistance input, which corresponds to tap position of transformer. Output is proportional to tap position. Tap number is shown on display and modbus. Tap counter increments by one count on tap change (shown on modbus.)

Electric Isolation

Electrically isolated analog outputs prevent interference voltage and current. Solves grounding problem in meshed signal networks. High electric isolation between input and output–2.3 kV, and power supply versus all other circuits–3.7 kV.

Standards

Electromagnetic compatibility	Acc. to IEC 61326-1 IEC 61000-4-3, Level 3 IEC 61000-4-4, Level 3
Protection (acc. to IEC 60529 resp EN 60 529)	For Front enclosure : IP50 For terminals side: IP20 as per IEC60529.
Electrical standards	Acc. to IEC 1010 resp. EN 61010
Over voltage category	Acc. to IEC 664: III for power supply. II for measuring input and measuring output.
Double Insulation	- Power supply versus all other circuit. - Measuring input versus measuring output.
Test Voltage	Power supply versus: -All 3.7 kV, 50 Hz 1 min Measuring inputs versus : -Measuring output 2.3 KV ,50 Hz 1min Measuring output1 versus -Measuring output2 500 V,50 Hz 1min
Common mode voltage	100V
Pollution degree	2

Technical Data

Measuring Input

Measured Variable	Measuring ranges		
	Limits	Min. span	Max. span
Low Resistance Range	0...3700Ω	500Ω	3700Ω
High Resistance Range	0...25000Ω	500Ω	25000Ω

Measuring current : = 0.081 mAfor measuring range 0...3700Ω.
or
= 0.012 mAfor measuring range 0...25000Ω.

Output Signals: Output1 and Output 2

DC current:	Standard ranges: 0-20 mAor 4–20 mA
Non-standard ranges:	-20 to +20 mA Min. Span 5 mA Max Span 40 mA
Burden voltage:	Negative > -19 V Positive < 22 V
External Resistance	-12V / IAN (mA) Rext max. [kÙ] = 15V/IAN (mA) OR IAN (mA) =Full scale current
DC Voltages	Standard ranges: 0-5V, 1-5V, 0-10 V, 2–10 V
External Resistance	Rext min. [kÙ] = UA(V)/2 mA UA(V)= 15V or -12V
Residual ripple in Output current	< 0.5% p.p.
Response time	< 4 s
Power supply:	60 ... 230...300 VAC/VDC, (45…66 Hz) 20 .. 24 ..40 VAC, 20..48..60VDC (45…66 Hz)
Power consumption:	<3W or <4.7 VA
Mounting:	Panel Mounting.
Mounting Position:	Any

Accuracy Data (Acc to IEC 60688)

BasicAccuracy:	± 0.2% of range
Reference Conditions	Ambient temperature: 23 ºC ± 2K
Nominal value ofAux supply voltage:	230V 50Hz or 60 Hz AC/DC 24V 50Hz or 60 Hz AC and 48VDC
Output burden for Curr. OP:	0.5 * Rext max.
Output burden for Volt. OP:	2 * Rext min.

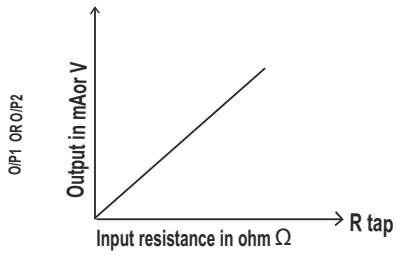
Influence factors:

Temperature:	± 0.15% per 10 K
Burden influence:	< ±0.1 % for current output < ±0.1 % for voltage output
Magnetic field:	< ±0.2 % (400A/T)

Regulations

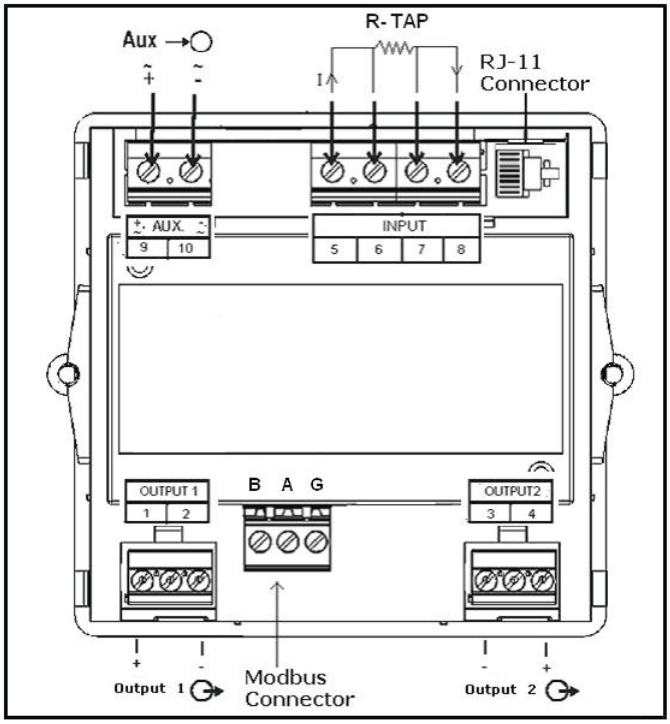
Electromagnetic Compatibility	Acc. to IEC 61326-1 IEC 61000-4-3, Level 3 IEC 61000-4-4, Level 3
Shock Resistance	IEC 60068-2-27,Min. Severity 50 G
Vibration Strength	IEC 60068-2-6, 10-150-10 Hz, 0.15mm,2G
Electrical standards	Acc. to IEC 1010 resp. EN 61 010
Operating voltages	<300 V between all Insulated circuits
Climatic rating	Climate case 3Z acc. to VDI / VDE 3540
Nominal range of use:	0 ...23...45 ºC (Usage Group II)
Operating temperature:	-20 to 65 ºC
Storage temperature:	-40 to 70 ºC
Annual mean relative humidity	< 75% standard Climatic rating.

Output characteristics



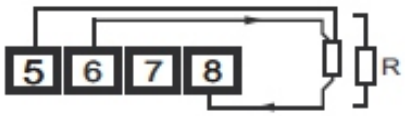
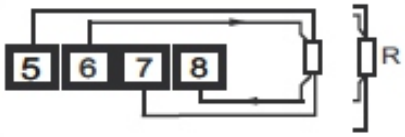
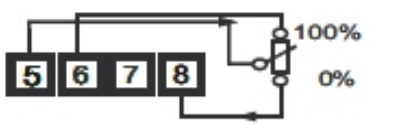
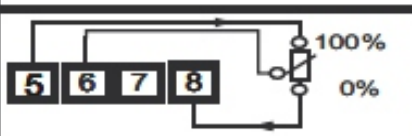
Connection Diagram

Fig A shows Input and output connections,
Auxiliary power supply and modbus Connections.



FigA

Table:Alternative connection types

Measurement	Measuring range limits	Measuring span	No.	Wiring diagram
two-wire connection	0... 3700Ω / 0...25000 Ω	500... 3700Ω / 500...25000Ω	1	
Resistance Measurement three-wire connection	0... 3700 Ω/ 0...25000 Ω	500...3700Ω / 500...25000Ω	2	
Resistance Measurement four-wire connection	0... 3700 Ω/ 0...25000 Ω	500...3700Ω / 500...25000Ω	3	
Resistance Transmitter WF	0... 3700 Ω/ 0...25000 Ω	500...3700Ω / 500...25000Ω	4	
Resistance Transmitter WF DIN	0... 3700 Ω/ 0...25000 Ω	500...3700Ω / 500...25000Ω	5	

Ordering Information

PRODUCTNAME- INPUTRANGE CODE-MODBUS-OUTPUT1 RANGE CODE- OUTPUT2 RANGE CODEAUXILLARYSUPPLY

1) Product Name :-TPT96X96

2) Standard input range codes:-

Input resistance (KΩ)	Ordering Code
0…..25	1
0....20	2
0…..18	3
0…..17	4

3) Tap Position Indicator

Modbus Ordering	Code
With Modbus	1
Without Modbus	2

4) Standard output1 range codes:-

Current (mA)	Ordering Code	Voltage (V)	Ordering Code
0…..20	1	0…..10	3
4…..20	2	2…..10	4

5) Standard output2 range codes :-

Current (mA)	Ordering Code	Voltage (V)	Ordering Code
0…..20	1	0…..10	3
4…..20	2	2…..10	4

6) Auxiliary supply voltage

Auxiliary supply	Ordering Code
60…300VAC/DC	H
20..40VAC/20..60VDC	L

Example:-
To order model of 0 to 25 KÙ input , with Modbus, output1 0 to 10V , output2 4 to 20 mAand auxiliary supply 60 to 300 VAC DC, ordering information will be as follow :-
TPT96X96-1-1 -3-2-H

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All specifications are subject to change without notice

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