



# Data Sheet

## Rish CON TPT

Programmable Tap position transducer



Measure



Control



Record



Analyze

## Application

The purpose of the Tap 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.

## Features / Benefits

1. Input measuring range can be programmed using PC / Simplifies project planning and engineering (the final range can be determined during commissioning).
2. Electrically isolated Dual outputs.
3. Tap number is programmable from 1 to 100 using software.
4. Tap position is displayed on front LED display.
5. Analogue output signal also programmed using the PC (impressed current or superimposed voltage for all ranges between - 20 and + 20 mA DC 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.

## Function

Tap position transducers receives resistance input, which corresponds to tap position of transformer. Output is proportional to tap position.

## 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 Housing : IP40 For terminals: 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...3700 $\square$	500 $\square$	3700 $\square$
High Resistance Range	0...25000 $\square$	500 $\square$	25000 $\square$

Measuring current : = 0.081 mA for measuring range 0...3700  $\square$ .  
or  
= 0.012 mA for measuring range 0...25000  $\square$ .

### Output Signals: Output1 and Output 2

DC current: Standard ranges: 0-20 mA or 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 Rext max. [k $\Omega$ ] = 15V/IAN (mA) OR -12V / IAN (mA)

DC Voltages IAN (mA) = Full scale current  
Standard ranges: 0-5V, 1-5V, 0-10 V, 2-10 V

External Resistance Rext min. [k $\Omega$ ] = UA (V)/20 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) OR 24...48...60 V VAC/VDC (45...66 Hz)

Power consumption: <3W or <4.7 VA

Mounting: DIN Rail mounting or wall mounting.

Mounting Position: Any

### Accuracy Data (Acc to IEC 60688)

Basic Accuracy:  $\pm 0.2\%$  of range  
Reference Conditions Ambient temperature: 23  $^{\circ}$ C  $\pm 2$ K

Nominal value of Aux supply voltage: 230V 50Hz or 60 Hz AC/DC 48V 50Hz or 60 Hz AC/DC

Output burden: 0.5 \* Rext max.

### Influence factors:

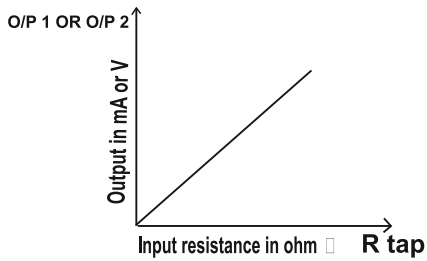
Temperature:  $\pm 0.15\%$  per 10 K  
Burden influence: <  $\pm 0.1\%$  for current output  
<  $\pm 0.1\%$  for voltage output

Magnetic field: <  $\pm 0.2\%$  (400 A/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 °C to 45 °C (Usage Group II)
Operating temperature:	-20 to 65 °C
Storage temperature:	-40 to 70 °C
Annual mean relative humidity	< 75% standard Climatic rating.

## Output characteristics



## Connection Diagram

Fig A shows Input and output connections. Where as Fig B shows Auxiliary power supply to beConnections.

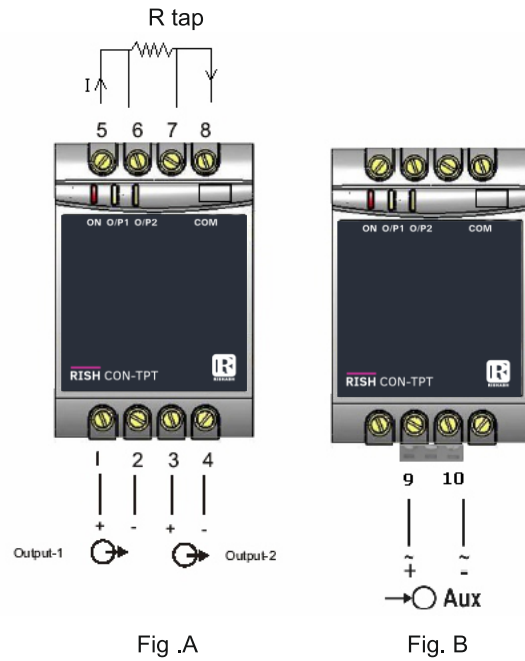


Table: Alternative connection types

Measurement	Measuring range limits	Measuring span	No.	Wiring diagram
two-wire connection	0... 3700Ω / 0...25000 Ω	100... 3700Ω / 500...25000Ω	1	
Resistance Measurement three-wire connection	0... 3700Ω / 0...25000 Ω	100...3700Ω / 500...25000Ω	2	
Resistance Measurement four-wire connection	0... 3700Ω / 0...25000 Ω	100...3700Ω / 500...25000Ω	3	
Resistance Transmitter WF	0... 3700Ω / 0...25000 Ω	100...3700Ω / 500...25000Ω	4	
Resistance Transmitter WF DIN	0... 3700Ω / 0...25000 Ω	100...3700Ω / 500...25000Ω	5	

## Ordering Information

PRODUCT NAME- INPUT RANGE CODE-DISPLAY-OUTPUT1 RANGE CODE- OUTPUT2 RANGE CODE AUXILLARY SUPPLY

1) Product Kmat :- CT25-

2) Standard input range codes:-

Input resistance (K $\Omega$ )	Ordering Code
0.....25	R4
0....20	R3
0.....18	R2
0.....17	R1

3) Tap Position Indicator Display

Display Ordering	Code
With Display	D
Without Display	Z

4) Standard output1 range codes:-

Current (mA)	Ordering Code	Voltage (V)	Ordering Code
0.....20	32	0.....10	5H
4.....20	55	2.....10	3C

5) Standard output2 range codes :-

Current (mA)	Ordering Code	Voltage (V)	Ordering Code
0.....20	32	0.....10	5H
4.....20	55	2.....10	3C

6) Auxiliary supply voltage

Auxiliary supply	Ordering Code
60...300V AC/DC	H
24...60V AC/DC	F

Example:-

To order model of 0 to 25 K $\Omega$  input , with Tap Position indicator Display, output1 0 to 10V , output2 4 to 20 mA and auxiliary supply 24 to 60 V AC DC, ordering information will be as follow :-  
CT25-R1-D-5H-55-F



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All specifications are subject to change without notice



Measure



Control



Record



Analyze

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