

APPLICATION NOTES

Measurement of Contactor Coil Resistance - Rish Con TPT



Introduction:

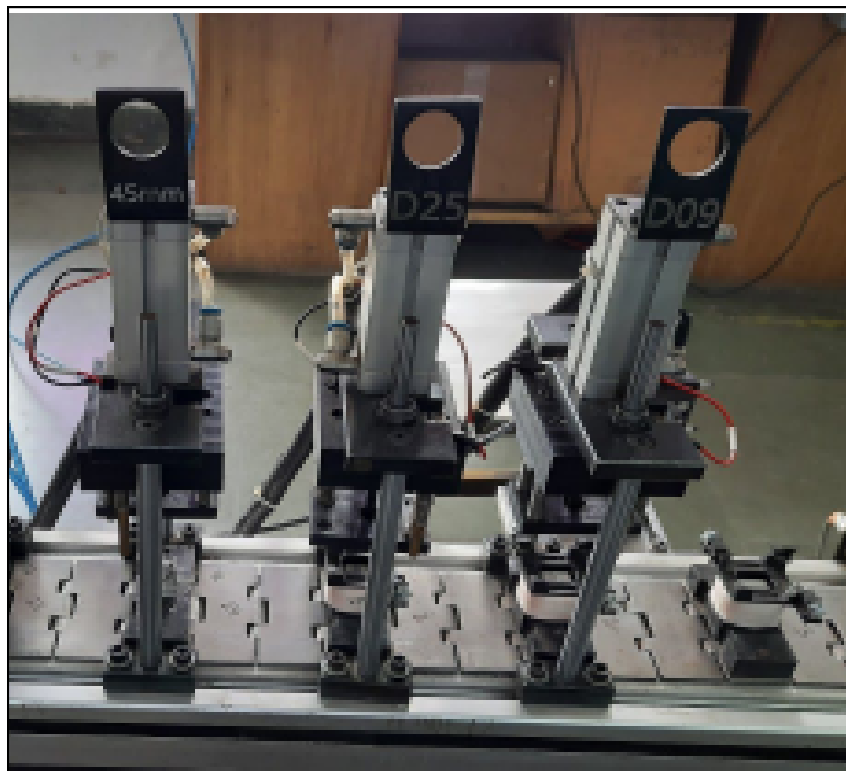
In electrical systems and various industrial applications, contactors are used to remotely switch electrical power. The coil-actuated switch operates exactly like a relay, but a contactor typically handles higher amperes in the switch mechanism itself. The contactor coils are designed to be able to cope with continuous duty. Typically the contacts, two each to a switch, are identified as the line and terminal. The line, or L, is the voltage feed, and the terminal, or T, is connected to the electrical device being controlled. The operation of the contactor takes place due to energizing and de-energizing of the contactor coil. Thus, it is crucial to measure the resistance of the contactor coil at the time of manufacturing of the contactor.

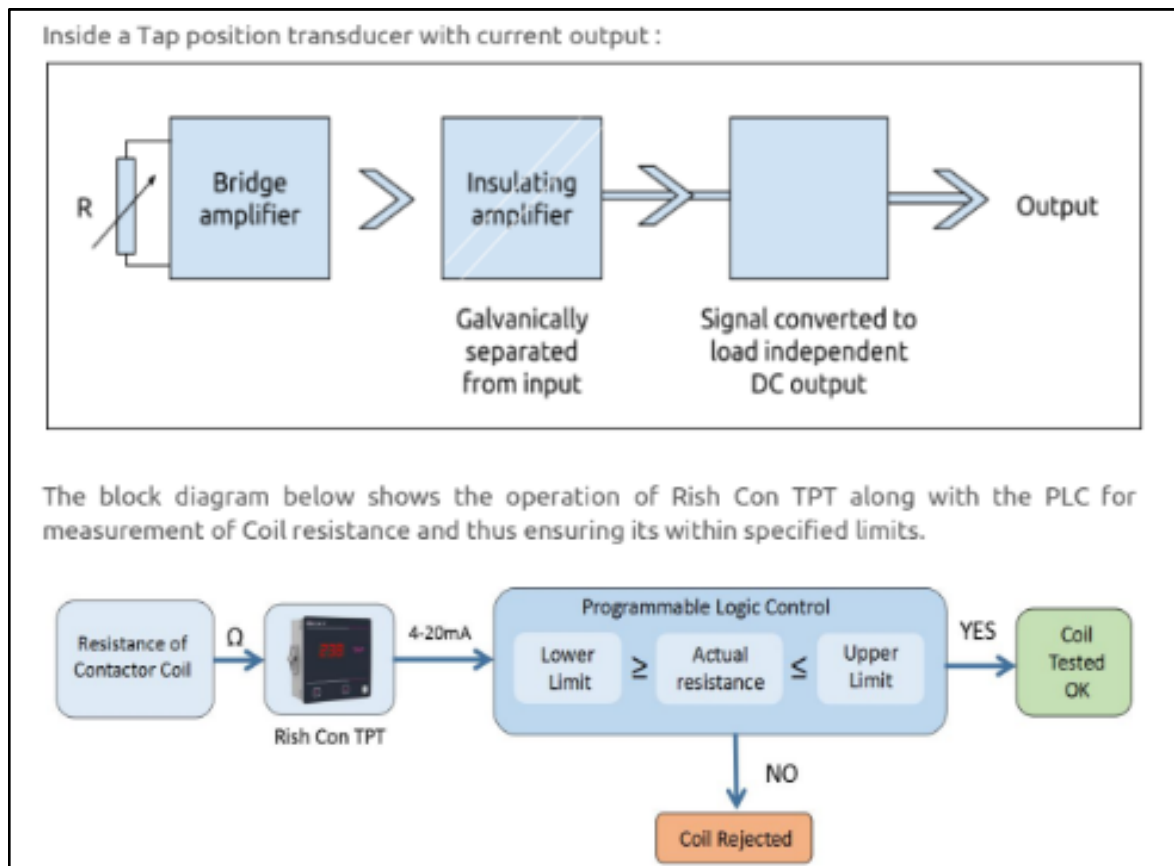
The Problem:

Contactors are normally energised for very long periods, sometimes weeks or months continuously. Therefore it is very important to ensure that ambient temperatures inside their enclosures are maintained within specified levels. Hence, measurement of resistance of the contactor coil and ensuring its value to be within specified limits becomes essential during manufacturing of contactor.

Our Solution:

Tap position transducer Rish Con TPT converts resistance to proportional analogue output signal. The contactor coil is placed on the conveyor, mounted with Hydraulic Jigs as shown in the picture below. The resistance of the coil is measured from its terminals through the Hydraulic Jigs. This measured resistance is provided to the input terminal of Rish Con TPT. The range of Rish TPT taken as 0-500 Ω & 0-25 K Ω . The output from Rish Con TPT is taken out as 4-20 mA DC. Outputs can be given as input to either RTU or indicator or recording instrument. In this case, the output is supplied to Rockwell PLC. The actual resistance value of the coil is measured with the reference value already fed in PLC. If this actual value is between lower and upper limits of reference resistance value, the contactor coil is considered ok. Otherwise, rejected by command received from PLC. Thus the coil is rejected and taken out with the help of hydraulic arrangement. While monitoring the resistance of the coil, it is mandatory that the real-time or time synchronized values are communicated by the Programmable Logic Control.





The Benefits:

- Real-time measuring quantity can be displayed through PLC
- Electrically isolated analog outputs prevent interference voltage and current.
- Solves grounding problems in meshed signal networks
- High electric isolation between input and output – 2.3 kV, and power supply versus all other circuits – 3.7 kV.
- Cost-effective solution

Contact:

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PROVEN BY PERFORMANCE.”**

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