

## DISPLACEMENT TRANSDUCERS

# T-NC



### FUNCTION

The T-NC transducers detect the displacement of a target facing to the probe. The different dimensions of the probe allow its application for the detection of different measuring ranges. They are powered at 24 Vdc and provide a 0÷10 Vdc or 4÷20 mA signal proportional to the displacement. The transducer is used for no-contact measurement of displacement and expansion of rotating machines. The probe structural features allow its installation in a particularly heavy environment, with the presence of steam, oil and aggressive agents (typically on steam turbines, gas turbines, compressors, etc.).

### GENERAL DESCRIPTION

These transducers are composed of a ST-NC/16, ST-NC/20 or ST-NC/30 probe and a CT-NC converter contained in a die-cast aluminium housing, complete with a connector (according to MIL standards) for the connection of the transducer to the acquisition system.

The principle of operation is based on the generation of an electromagnetic high frequency field, radiated by the probe, which induces an eddy current in the target. The intensity of this eddy current depends directly on the distance between probe and target and it is converted into an electrical signal processed by the converter.

The probe consists of an AISI 304 stainless steel body and it is supplied with a coaxial teflon cable. The converter is manufactured with microprocessor technology to ensure measurement linearity and precision. The generated electrical signal, depending on the distance between probe and target is opportunely linearized during the transducer calibration phase.

It is supplied calibrated foreseeing the AISI 4140 target (calibration with different targets are available on request).

### TECHNICAL FEATURES

Composition T-NC	<ul style="list-style-type: none"> <li>• AISI 304 stainless steel ST-NC probe</li> <li>• CT-NC converter</li> </ul>
Power supply	<ul style="list-style-type: none"> <li>• 24 Vdc (20 to 30 Vdc)</li> </ul>
External connections	<ul style="list-style-type: none"> <li>• MIL C5015 5-pin connector (max conductors section 2,5 mm<sup>2</sup>)</li> </ul>
Environmental application field	<ul style="list-style-type: none"> <li>• Probe -50°C to +175°C</li> <li>• Converter -20°C to +70°C</li> </ul>
Measuring field	<ul style="list-style-type: none"> <li>• Model 16      4 mm from 0,5 to 4,5 mm      sensitivity 2,5V/mm</li> <li>• Model 20      8 mm from 0,5 to 8,5 mm      sensitivity 1,25V/mm</li> <li>• Model 30      13 mm from 0,5 to 13,5 mm      sensitivity 0,77V/mm</li> </ul>
Linearity	<ul style="list-style-type: none"> <li>• ± 2% for the entire measuring field and within the indicated operating temperatures</li> </ul>
Insulation	<ul style="list-style-type: none"> <li>• ≥10<sup>8</sup> Ω between signal and body/housing</li> </ul>
Electrical connections	<ul style="list-style-type: none"> <li>• Three-polar shielded cable, typical conductors section 3x1 mm<sup>2</sup></li> </ul>
Possible predispositions to the order	<p><b>PROBE:</b></p> <ul style="list-style-type: none"> <li>• Measuring field</li> <li>• Cable length</li> <li>• Cable armour</li> <li>• Body length</li> </ul> <p><b>CONVERTER:</b></p> <ul style="list-style-type: none"> <li>• Measuring field</li> <li>• Cable length</li> <li>• 0÷10V or 4÷20 mA output</li> </ul>

# T-NC

## ORDER INFORMATION: PROBE

A B C D  
ST-NC/  /  /  /  \*

### A: MEASURING FIELD

16	4 mm
20	8 mm
30	13 mm

### B: CABLE LENGTH

(step 1 meter - min. 1 meter / max. 10 meters)

5	5 meters (standard)
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### C: CABLE ARMOUR

0	no
1	yes

### D: BODY LENGTH

into mm (step 20 mm, starting from 25 mm)

45	45 mm (standard)
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## CONVERTER

A B C  
CT-NC/  /  /  \*

### A: MEASURING FIELD

16	4 mm
20	8 mm
30	13 mm

### B: CABLE LENGTH

(step 1 meter - min. 1 meter / max. 10 meters)

5	5 meters (standard)
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### C: OUTPUT SIGNAL

0	0 ÷ 10 Vdc
1	4 ÷ 20 mA

\* In the old coding, number zero "0" could be present before the code number.

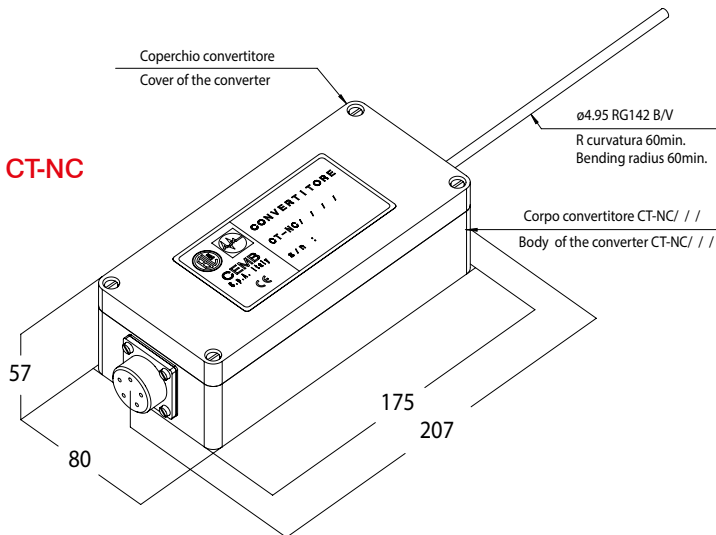
Example:

ST-NC/16/05/0/045 (old code)

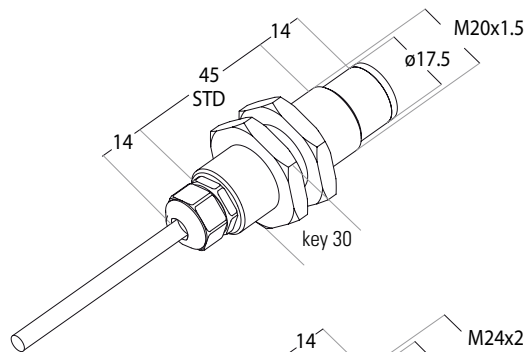
Equivalent to:

ST-NC/16/5/0/45 (new code)

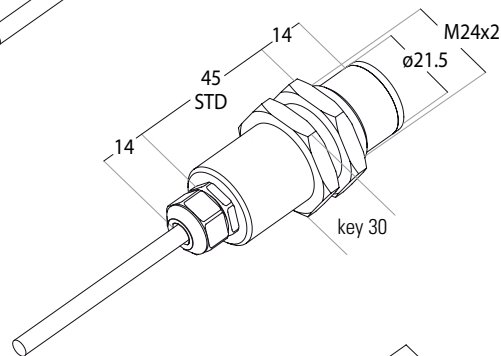
## CONVERTER CT-NC



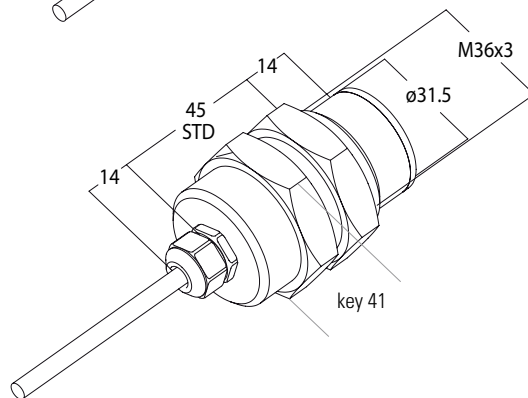
## ST-NC/16/ / /




## ST-NC/20/ / /



## ST-NC/30/ / /



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