



# CT-R

## Single or dual channel seam detector



### Overview

CT-R is an instrument capable of detecting the passage of a magnet near an inductance, causing activation of the outputs. It has 2 working mode: 1 channel/rope or 2 independent channels/ropes. On dyeing machines, it is used for seam detection during tissue unload operation or for measuring the speed of the tissue inside the machine.

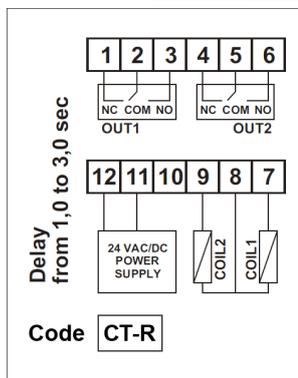
### Working mode

Seam detector works in CT-1 or CT-2 mode based on which green LED is lit on the front panel. To change working mode, within 10 seconds from power on, keep MODE button pressed for at least 5 seconds until green LED confirm mode has changed.

**Mode CT-1:** 1 or 2 inductance can be connected as input, considering that when the magnet is detected by one of the two coils, both output are activated (OR logic). This mode is preferred for replacing previous seam detector models (CP02 / BC01 / BC02) or in case 2 inductances are needed to detect magnet passage inside a very large pipe.

**Mode CT-2:** input inductances are independent and they are connected to their respective output (COIL1→OUT1, COIL2→OUT2). This mode allow to detect magnet passage in 2 channels/ropes using only one seam detector.

### Wiring



It is recommended to connect coils using a non-shielded bipolar cable with conductors section of at least 1mm<sup>2</sup>, trying to minimise the length of cables and keeping them separated from power cables.

In case shielded cable are installed, it is recommended to connect to ground (earth) only one side of the cable shield. Do not connect cable shield to the coil connector.

When working in CT-2 mode, coil linked to OUT1 have to be connected to pin (7) and (8), while coil linked to OUT2 to pin (8) (shared between coils) and (9).

### Warranty

The warranty is valid for 12 months from purchase, and expires if instrument is improperly used or not correctly installed on system.

### Technical data

Power supply:	<b>24VAC/DC</b>
Power consumption:	2,2VA / 2W max
Input:	2 AC/DC coil
Output:	2 SPDT relays
Contact rating:	6A @ 250Vac / 30Vdc (resistive load) 3A @ 250Vac / 30Vdc (inductive load)
Pulse length:	from 1 to 3 seconds (Delay trimmer)
Sensitivity adjustment:	Sens trimmer
Visual signaling:	Green LED → Power supply / Mode 1-2 Red LED → Magnet detection
Installation:	35 mm DIN rail
Electrical connection:	Removable terminal board 6+6 poles
Protection:	IP20
Storage temperature:	from -20 to +60°C
Working temperature:	from -10 to +60°C
Weight:	120 gr
Relative humidity:	from 0 to 85%, no condensate
Dimensions:	90(H) x 35(L) x 68(P) mm

### Electromagnetic compatibility (EMC)

- According to directive 2014/30/UE
- Immunity standard for industrial environments EN61000-6-2
- Emission standard for industrial environments EN61000-6-4

### Electrical safety

- According to directive 2014/35/UE
- Safety requirements for electrical equipment EN61010-1

### Operation and calibration

It is recommended to install the instrument on the board as far as possible from other instruments that may create electromagnetic field, such as inverter, and in every case keep the detector at least 2cm far from other instruments. It is possible to adjust the inductance sensitivity using the "SENS" trimmer.

When the magnet is detected by the coil, output is activated for 1 to 3 seconds, based on "DELAY" trimmer setting. After this time, detector pauses for the same time (1-3 seconds) in order to avoid a double detection of the same magnet and then return to wait for another magnet detection.

It is possible to connect 1 or 2 coils, detection from one coil does not influence the other coil.

The main factors that can influence the capability of the instrument to detect a magnet passage are:

#### - magnetic field generated by the used magnet

*it is recommended to use AlNiCo or Neodymium magnets and, in case of difficult detection, try magnets with different size and shape or try to change the inductance orientation.*

#### - the maximum distance between inductance and magnet

*if you need to increment the maximum detection distance, you can adjust on the sensibility trimmer, but note that with higher sensibility the instrument become more sensible to external noise. If you are using it with PTFE coated magnets Mod. IMA-01 and external probe GS-1, maximum recommended distance between inductance and magnet is 20-25cm with minimum amplification and 40-50cm with maximum amplification.*

#### - turns quantity in the used inductance

*the instrument is compatible with inductance from 50Ω to 5000Ω (e.g.. Inductance of solenoid valve with AC or DC power supply). 110/220V coils offer better sensitivity and longer distance.*

#### - strong electromagnetic field near the inductance

*it is recommended to place the inductance as far as possible from noise source as transformers, electric motors or pumps, and eventually to shield the exposed sides of the inductance with a metal grid.*



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