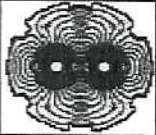




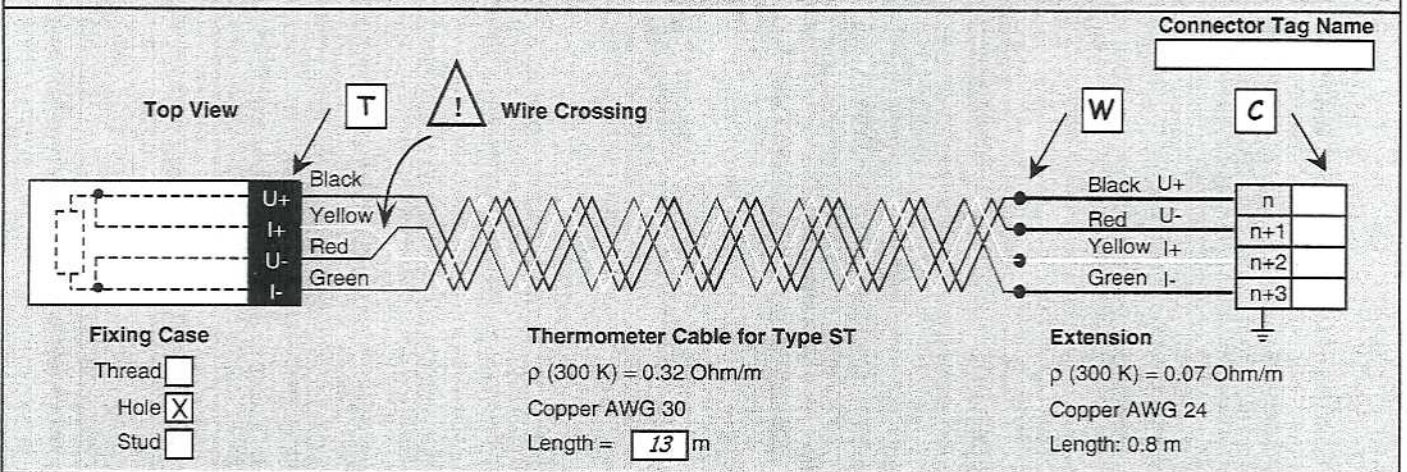
Cryogenic Thermometer Traveller TT821



DESCRIPTION

| | | | |
|----------------------|-----------------------|------------------------------|---------------------|
| Part description: | Cryogenic thermometer | Top Assembly Identification: | Magnet |
| Part Identification: | HCQITESCXT-CR013841 | Manufactured By: | ANSALDO ENERGIA Spa |
| Serial Number: | CX_LS_X11804 | | |

CABLING



CHECKS

| Intervention | Date/ DD-MMM-YYYY | Check Point | R(U+,U-,I+,I-) [Ohm] 4W | R(U-,I-) [Ohm] 2W | R(U+,I+) [Ohm] 2W | R(U+,GND) [Ohm] 2W | Temperature [K] | Firm/Laboratory | Checked by |
|--------------|----------------------|----------------|----------------------------|----------------------|----------------------|-----------------------|--------------------|-----------------|------------|
| Calibration | 05-Mar-2001 | T | 59 | 0.18 | 0.18 | OVL | 300 | IPN | Joly |
| Expedition | 11-Sep-2002 | W | 60.16 | 8.47 | 8.31 | OVL | 293 | CERN | Vauthier |
| Reception | | W | | | | | | Ansaldo | |
| Control 1 | | T W C | | | | | | Ansaldo | |
| Control 2 | | T W C | | | | | | Ansaldo | |
| Control 3 | | T W C | | | | | | Ansaldo | |
| Control 4 | | T W C | | | | | | Ansaldo | |
| Control 5 | | T W C | | | | | | Ansaldo | |
| Control 6 | | T W C | | | | | | Ansaldo | |
| Control 7 | | T W C | | | | | | Ansaldo | |
| Control 8 | | T W C | | | | | | Ansaldo | |
| Expedition | | T W C | | | | | | Ansaldo | |
| Reception | | T W C | | | | | | Ansaldo | |
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Magnet N°: 2022

Thermometer N°: CX-LS-X11804

1 THERMOMETER TT821 VERIFICATIONS

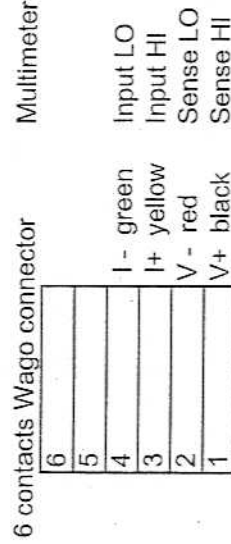
1 2 3 4

| Thermometer situation | Date | Cold mass Temperature °C | Resistance V+, V-, I+, I- Ω | Resistance V-, I- Ω | Resistance V+, I+ Ω | Resistance V+, V-, I+, I-/GND MΩ | Checked by | Remark |
|-------------------------------------|----------|--------------------------|-----------------------------|---------------------|---------------------|----------------------------------|------------|--------|
| Expected value | | 10 < T < 32 | Ref. Value (1) +/- 3Ω | Ref. Val.(1) +/- 1Ω | Ref. Val.(1) +/- 1Ω | R > 40 | | |
| Reference value given by CERN | 11-09-02 | 293 K | 60,16 | 8,47 | 8,31 | OVL | CERN | |
| At delivery | 11-04-03 | -16 °C | 60,13 | 8,49 | 8,47 | ✓ | PAVESE | |
| After mounting on the half-yoke | 06-05-03 | 22 °C | 60,20 | 8,55 | 8,52 | OVL | PAVESE | |
| After turning over of the half-yoke | 15-05-03 | 24 °C | 59,36 | 8,71 | 8,65 | OVL | PAVESE | |
| After pressing of the yoke | 20-05-03 | 24 °C | 59,09 | 8,62 | 8,57 | OVL | PAVESE | |
| After longitudinal welding | 21-05-03 | 24 °C | 59,18 | 8,67 | 8,64 | OVL | PAVESE | |
| After finishing of instrum. wiring | 05-06-03 | 25 °C | 58,68 | 8,55 | 8,52 | OVL | PAVESE | |
| After complete electrical test | 06-06-03 | 28 °C | 58,76 | 8,59 | 8,55 | OVL | PAVESE | |
| After welding of end covers | 10-06-03 | 24 °C | 58,83 | 8,50 | 8,48 | OVL | PAVESE | |
| After mounting of capillary (IFS) | 16-06-03 | 27 °C | 58,37 | 8,78 | 8,77 | OVL | PAVESE | |
| After pressure test | 18-06-03 | 26 °C | 58,49 | 8,80 | 8,80 | OVL | PAVESE | |
| After complete electrical test | 18-06-03 | 26 °C | 58,43 | 8,84 | 8,80 | OVL | PAVESE | |

Ω4W meth. Ω2W meth. Ω2W meth. Ω2W method

(1) The reference values are those written in the last row of the Thermometer Traveller supplied by CERN with the thermometer itself. For information the temperature sensitivity at ambient temperature is approximately -0.25 Ω / °C

Resistance measurements are performed with Keithley 2000 or Hewlett Packard 34401A multimeter.



Scheme for 4 wires resistance measurement method Ω4 function

