

Production specifications of RO cables for the Atlas BIL, BIM and BIR chambers

1. Production

1342 cables

2. Length

2,0 ± 0.05 meters, all cables

3. Specifications

See below

4. Ground connection

On one side only, as described in the cable specifications

5. Connector crimping positions

As shown in Fig. 1

6. Labeling

Hand-written or printed labels, placed on the opposite side of the ground connection, one each cable (see Fig. 1). Each label must report a consecutive number (serial number) starting from “1000”, and a “position” number, as described below:

“1” on 122 cables

“2” on 122 cables

“3” on 122 cables

“4” on 122 cables

“5” on 122 cables

“6” on 122 cables

“7” on 122 cables

“8” on 122 cables

“9” on 116 cables

“10” on 116 cables

“11” on 67 cables

“12” on 67 cables

7. Packaging

Cables must be packed in 24 separated boxes, two boxes for each group of cables carrying the same “position” number. In case one box for 60 cables is not practical, they must be packed in 4 boxes, each one with 30 cables.

8. Delivery terms

In order to check that cables conform the specifications, a production pre-series is required. 2 sets must be delivered as soon as they are assembled. Set is defined to be composed of 12 cables, with “position” labels from 1 to 12. Place and way of delivery will be agreed on.

Final production should be delivered within 12 weeks from order.

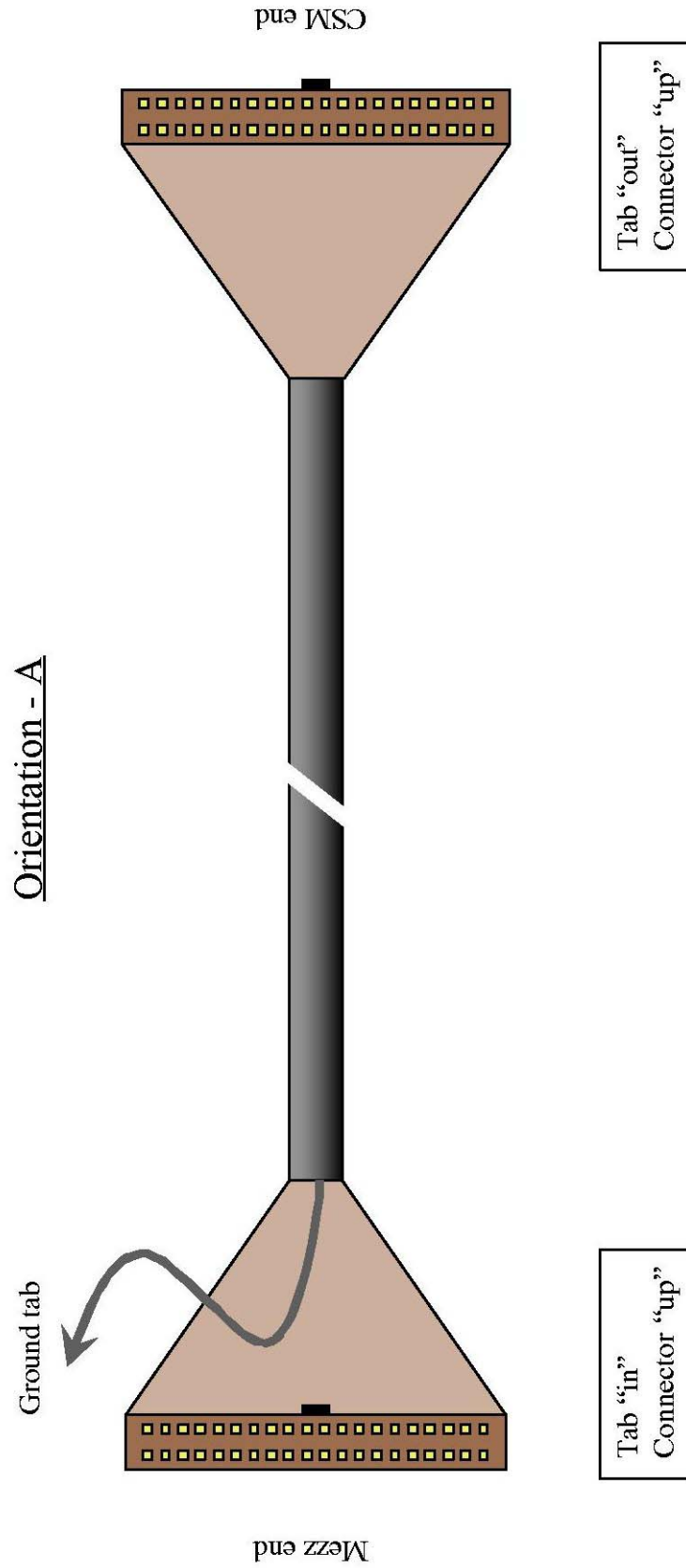


Fig. 1 – Connector crimping positions

Connector and cable technical specifications

1. Connector

Amp System50 type, receptacle, 40 positions, 0.025" pitch, part number 111196-9

2. Cable

Twisted, round screened, 20 pairs, 0.025" pitch.

2.1 Physical specifications:

- conductors 30 AWG (7 x 0.038"), tinned copper
- insulation Halogen-free Polyolefin (PO)
- drain wires 2 x 28 AWG tinned copper
- shield 0.001" Aluminum/Polyester foil or equivalent
- braid tinned copper, 85% minimum coverage
- jacket Halogen-free Polyolefin (PO)
- strain relief 5 cm heat shrink on both ends

2.2 Electrical specifications:

- impedance $100 \Omega \pm 20\%$ balanced
- capacitance $< 70 \text{ pF/m}$ balanced
- insulation $> 10^9 \Omega/3 \text{ m}$

2.3 Ground connection

- Wire 18 – 24 AWG connected to the drain wires with M3 terminal lug on one end only, 10 cm long

2.4 Safety and approvals

- CERN IS23 rules, including IEC 332-1 (flame and fire propagation), IEC1034-1-2 (smoke density), IEC 554-2-4 (radiation resistance)

06/11/2003 A. L.