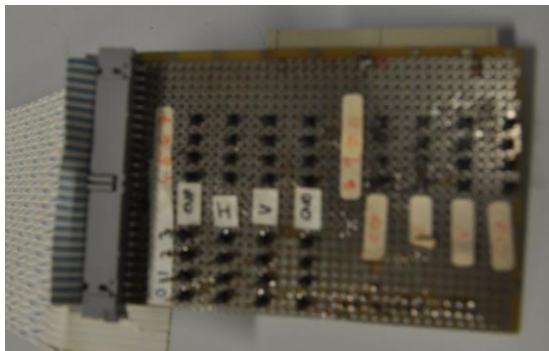


- 1) Maraton Power Supplies
- 2) Optical Fibres
- 3) 'Electronics Services' Installation

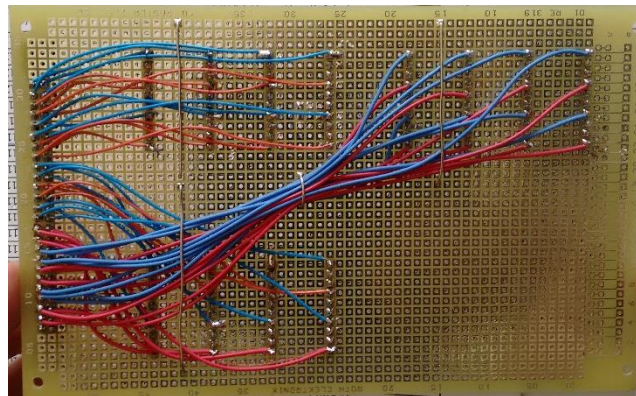
Laurent Roy - Electronics Meeting 03 Sept 2015

# 1) New Maraton TEST BENCH available at Point8

- ▶ In common Electronic lab 2<sup>nd</sup> floor  
AC/DC, RCM, water + electronics loads
- ▶ Settings can be read and adjusted  
Voltage set, Over Voltage Protection threshold, Current limit threshold  
2 New 'test' Boards in preparation (Thanks Tengiz)



Old board to read Maraton setting



New one

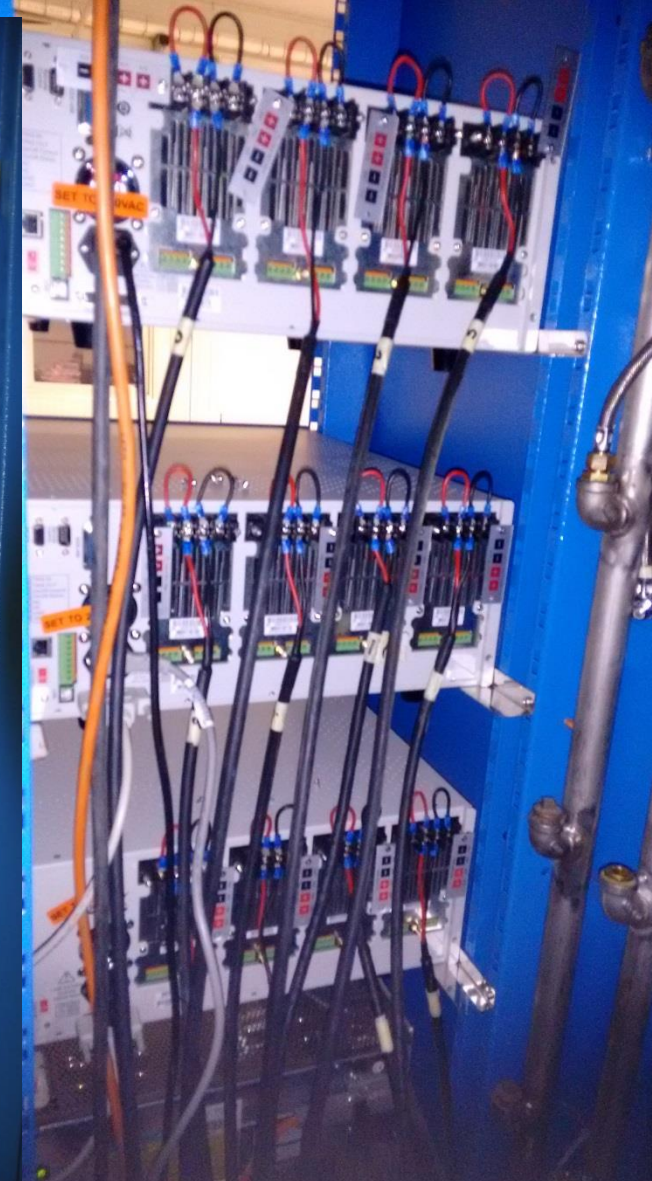


# Electronic Loads

Ref: B&K PRECISION with 12 Channels  
400W (max:80V, 60A) [web link](#)

Ordered by Ken

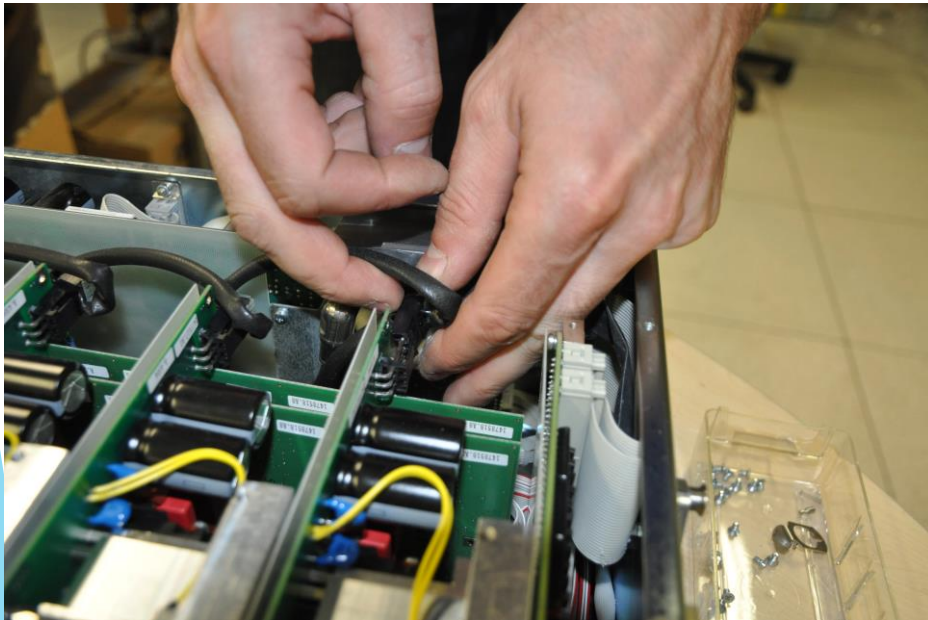
- ▶ test OVP and current limit
  - ▶ test 'suspicious' PS before send them to ESE  
could avoid sometime to pay for nothing...
  - ▶ Already used for 'Water connector' exchange
  - ▶ Available also for sub-detectors
- > please contact me for the first using



# Maraton: Water connectors exchange status

## ► Procedure [edms 1531465](#)

( RP checks, transport in Lab 2nd floor, electrical tests, connector exchange, pressure test, electrical tests again)



Electrical connector disconnection



Screw new connector with the right torque  
(dynamometric Key)

# Quantity status

- ▶ 8 spare units already modified (24 in the DB)

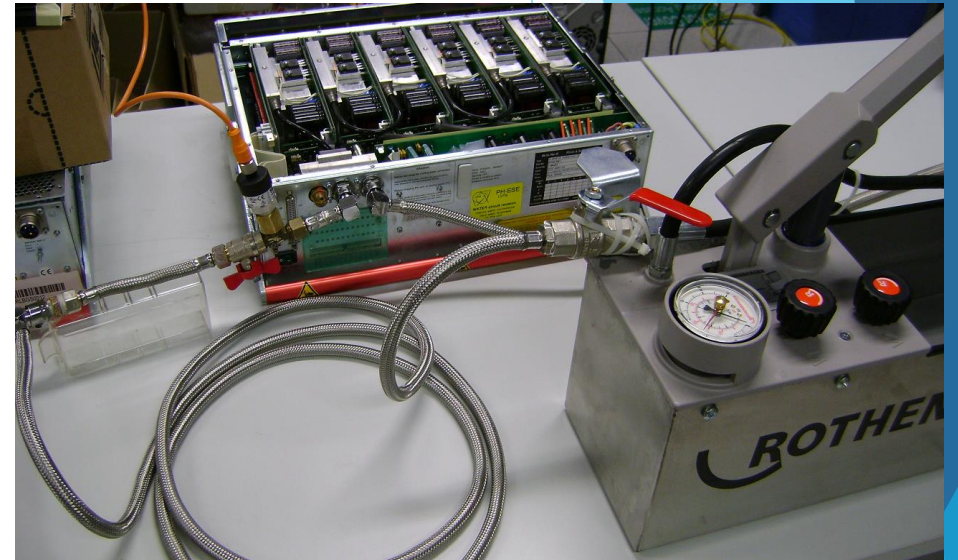
→ **Please bring your other spare in the lab (2<sup>nd</sup> floor)**

even if not used in UX85 for RUN2, could be installed for LS2 Upgrade.

- ▶ 7 RICH from UX done this week (Tengiz)

→ other 68 UX units will be modified during YETS (Dec2015-Feb2016)

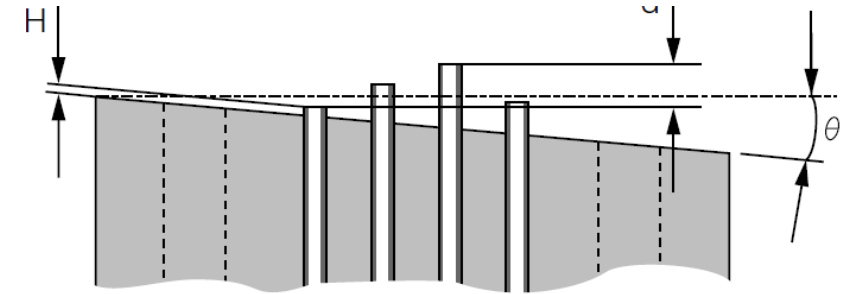
Pressure test



## 2) Upgrade : Optical links

### ► Need Patch-cord or fan-out for tests ? Specifications Reminder:

- Fiber type : **OM3**
- Connectors : one fibre-> **LC** or 12 fibres -> **MPO12** quality recommended: 'Low loss', 'Elite', 'Ceramic ferrules', **MTP** connector (=a good quality MPO connector) **<0.35dB** (standard quality~<0.60dB)
- Gender: -> next slide
- If installed in the cavern -> Cern Safety rules compliant: **IS23**



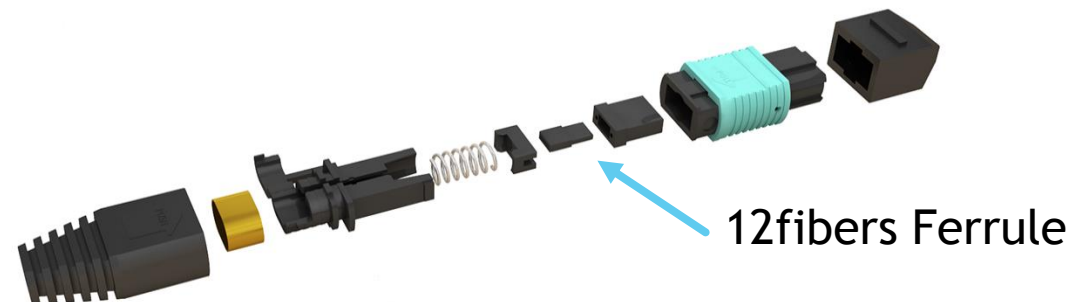
H : Lack of fiber protrusion  
d : Difference in fiber protrusion  
 $\theta$  : End-face angle error

### ► New EN/EL contract in place for the next years

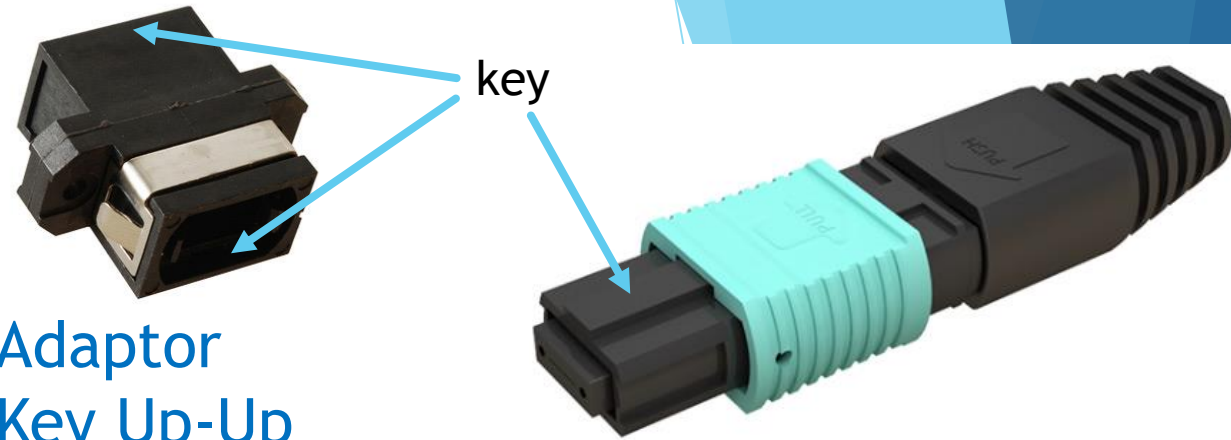
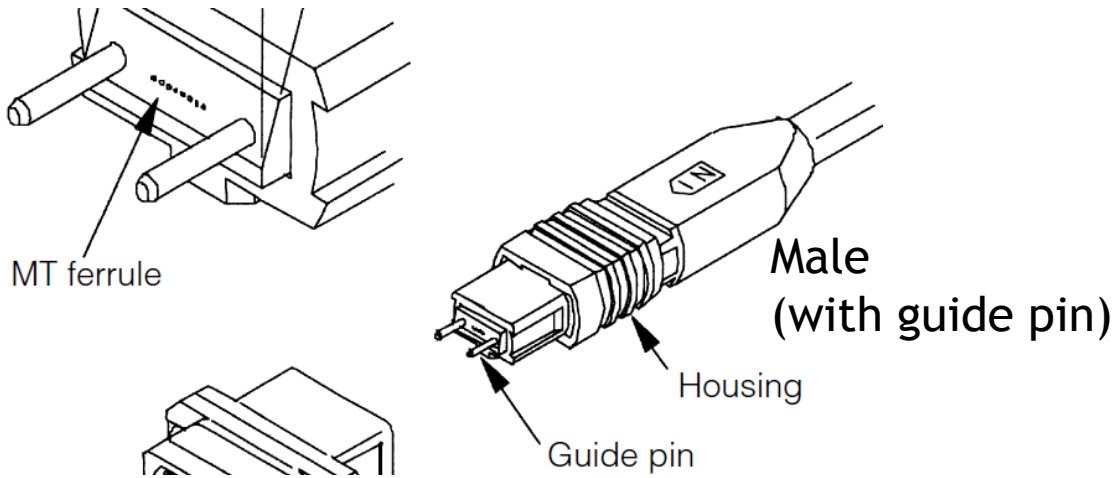
Can send you the prices and table to order for:

- Patch cable MPO-MPO
- Patch cord 12 LC - MPO
- Splitting cassette
- Adaptor MPO-MPO on plate
- Patch Panel

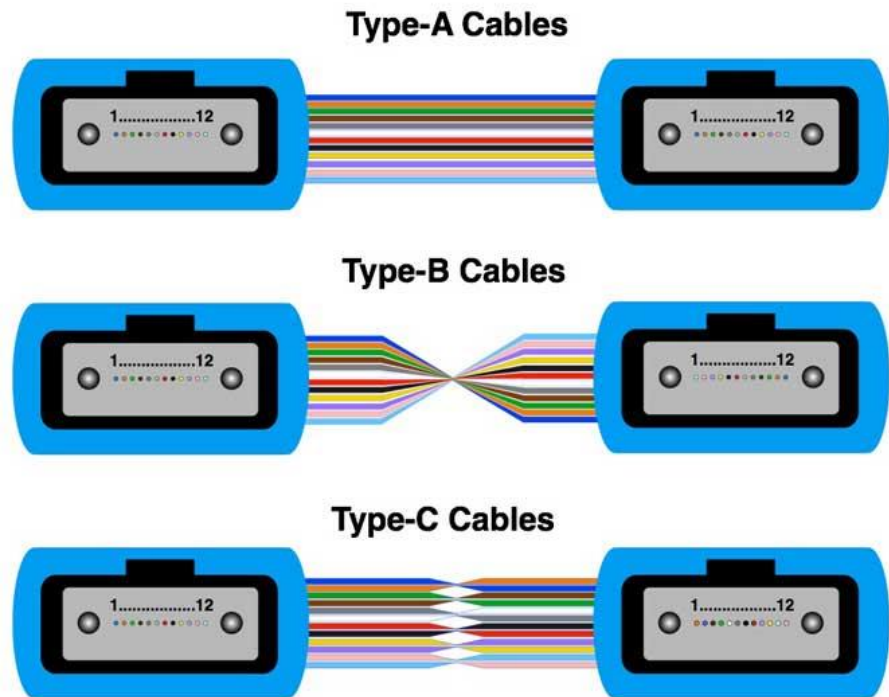
Factors Affecting Physical Contact.



# Male or Female ?



MPO12 connector Female



MPO cable Type (called also Polarity):

- straight-through (A)
- crossover (B)
- or flipped pairs (C) ?

# LHCb Convention:

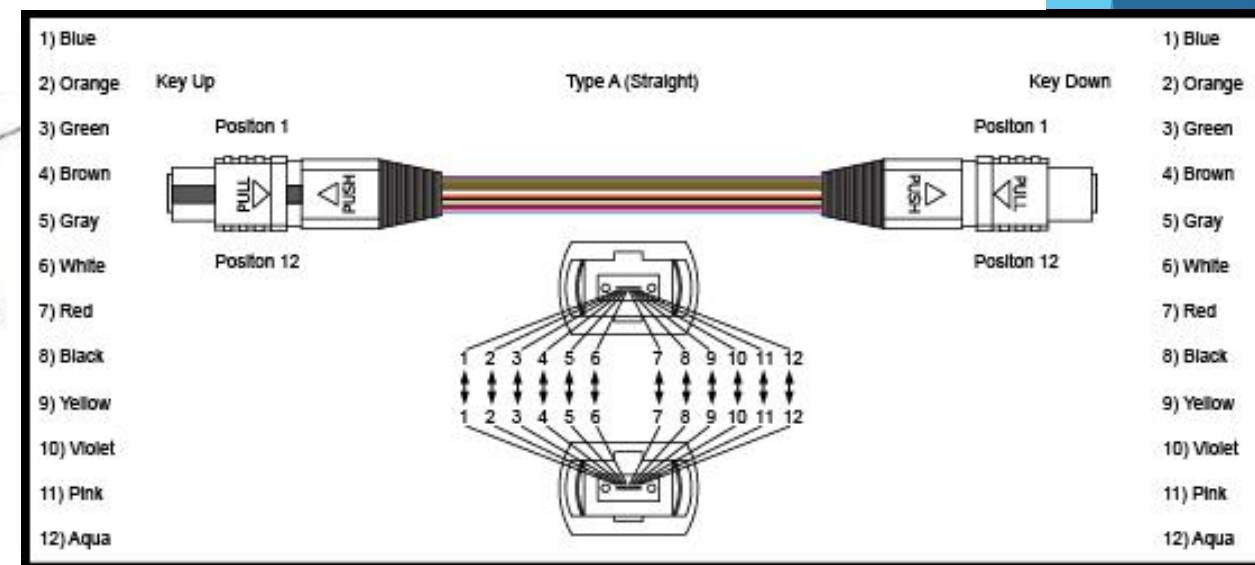
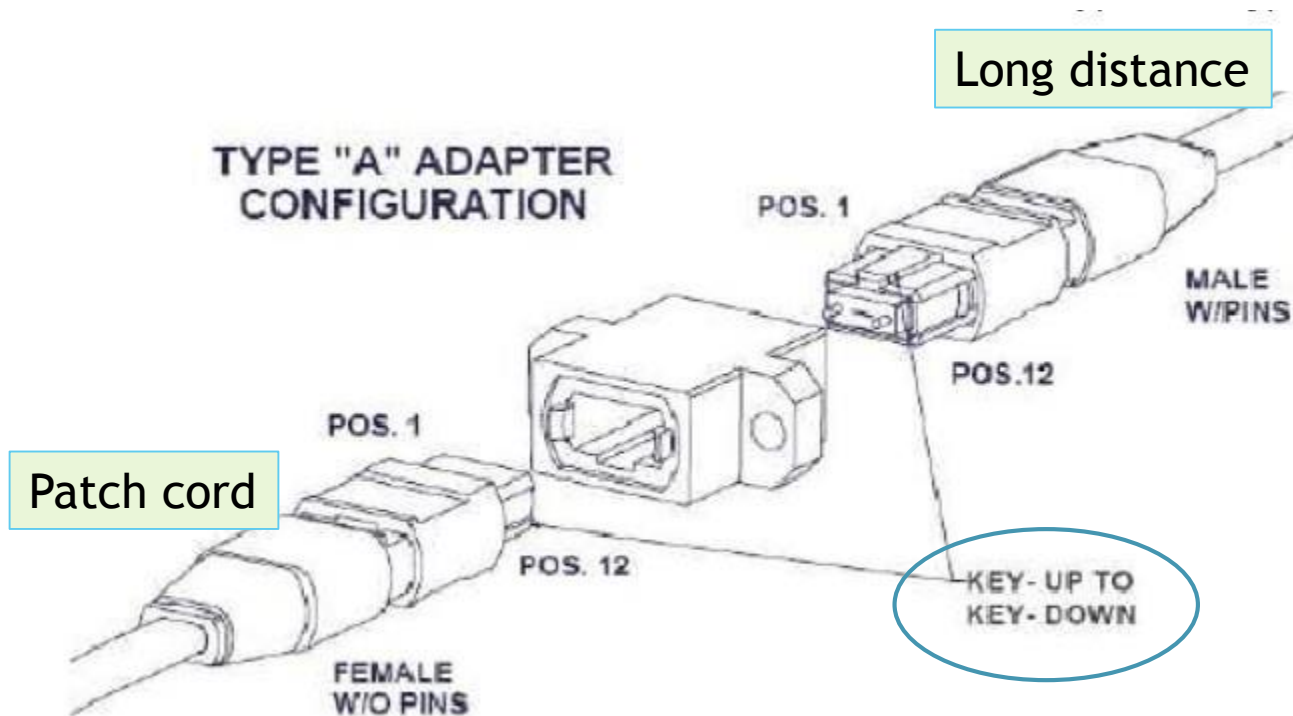
Long distance cable, MPO-MPO Patch cord, splitting cassette: **Type A**

Adaptors: **Key Up - Key Down**

- no change with 'pinning' in function of patch cord quantity in the full chain (1-1; 12-12 all the time)
- 'A' usually for patching (B and C for Ethernet transition, router...)

Long distance cable : **Male at each end**

- connected in the patch panel: fix part
- connection-disconnection with Patch cord **Female** (less risky to damage the pins)





### 3) 'Electronics Services' **INSTALLATION** in the LHCb cavern

#### ► Points to define in the next months

- Equipment to power : EXD, Diesel, UPS, Transfer switch, tri-phase, how much power, how many equipment, where...
- Electronics in racks : space, where in UX, cooling, ...
- Power supplies : actual LV+HV reused, which modified, order new, location...
- Copper + Optical Cabling : copper reused, new to order, how many, where...
- DSS: new sensors, cabling, matrix...

Happy to help you with that but need your inputs ☺ !

#### ► Time to start to go into detail !

##### **1<sup>st</sup> Mini meeting / individual sub detector in October**

Focus on the full Optical link schemes → before please upgrade infrastructure for LHCb upgrade document (Heinrich)

exact quantities of:

- TX-RX detector side with their location (per module, layers, C fram, sides...).
- PCIe Boards used on the surface (for Data, for ECS)

# MPO 'Pining'

