Update of automated plug in systems for vacuum equipment

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Recap

- 2 additional Hypertac connectors
- 1 will be used for the NEG cartridges
  - 20VDC
  - 6A
  - x3 wires of 1.5mm2 per NEG cartridge
- 1 can be used for the VPI
  - Nominal voltage 7k VDC
  - Isolation test at 10k VDC
  - Withstand voltage 15k VDC
  - Coaxial form
Hypertac solution for VPI

- HV pins compatible with C22749A/C22750A
- Non RadHard insulation
- Dielectric withstand voltage 8kV

- New design for our requirements:
  - PEEK insulation
  - 10kV – 15kV withstand voltage
  - Compatible with C22749A/C22750A housings

- In contact with Smith for price estimation

- Seems that due to the small volume (~15 pcs) they won’t proceed with an offer
Staubli solution for VPI

- Automatic solution exists for VAX modules
  - ST1177074_01
  - ST1266380_01
- Requires modification of the internal plate:
  - for extra 2 HV connectors
- Seems to be an “easy” modification
- RadHard connector (ALU frame, PEEK blocks)
- Meeting with Staubli at CERN week 11
Staubli solution for VPI
Issue #1

- The height of the connector is comparable to the height of the guiding pins
- Might result to connection issues
- Request to Staubli for longer guiding pins
Staubli solution for VPI
Issue #2

- The PEEK block introduces a small gap between the socket and the plug
- The HV pin is not fully connected
- Request to Staubli a different block design

Staubli PEEK block which holds the VPI HV connector
Staubli solution for VPI
HV connector 1/2

- HV connector with LV pins
- Precise orientation is required
- LV pins are not required

- Found COTS HV connector without LV pins
- No orientation is required
- Available in PEEK version
**Staubli solution for VPI HV connector 2/2**

### PUSH-PULL AUTOMATIC LOCKING PLUGS

**S - SS - WSO**

Fischer Connectors' original push-pull automatic locking is widely adopted by the industry for its ease of use, safety of mating and speed in connection and disconnection.

- Fully secured against accidental disconnection, it provides unparalleled signal integrity.
- Integrated into the connector housing, it is ideal for compact product design.
- For more details on Fischer Connectors' locking systems, visit: www.fischerconnectors.com

### QUICK-RELEASE PLUGS

**SC - SSC**

Fischer Connectors' quick-release plugs are designed without locking mechanism for emergency release.

- Quick-release plugs snap into the receptacle with an audible "click."
- A strong pull on the cable will allow unmating of the plug.
- Specially suited to avoid injuries to the users and damages to the material in case of accidental stress.
Fischer solution for VPI

- Meeting in December 2021 (w/ J. Daricou)
- They acknowledged that the offer was not seriously though – copy/paste from Joel’s
- Still waiting the revised version

Info from Joel Daricou