Update on general design and feedback on executive drawings

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UPDATE/CONTENT:

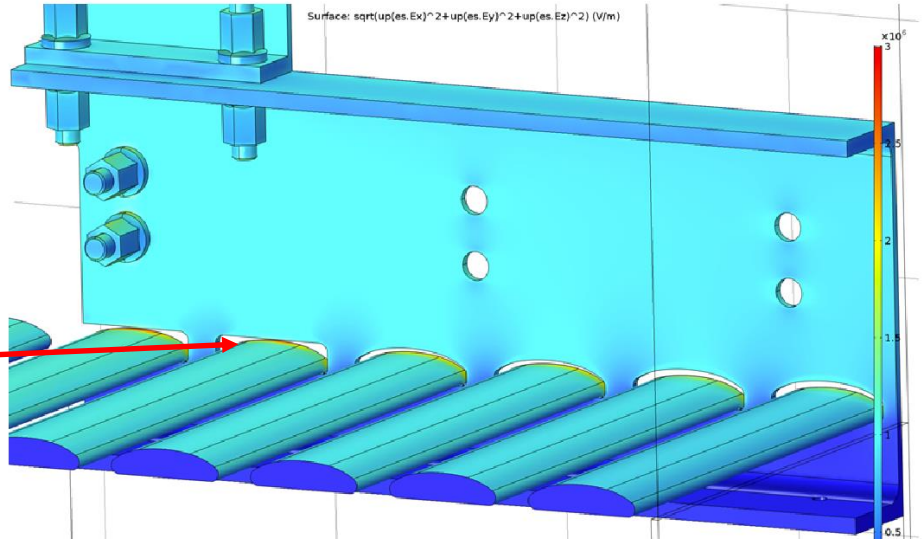
- Cryostat Roof Penetration
  - Penetrations holes drilled in the Cryostat (03.03.2017 welding of the Crossing pipe)
  - Position and Diameter checked and confirmed (by LAPP and ETH) → Friday 24.02.2017 at EHN1
  - Design of the penetration and Crossing pipes is frozen → Integration with last CERN 3D model by the end of this week

- Field Cage executive drawings
  - We got Reply from V. Guarino (some discussion is still ongoing)
  - Couple of details that needs to be corrected and understood (tolerances and small modification mainly for the inserts for the FRP connection Joints)
  - Shape of the holes for the ALU profiles coud be change to a Rectangular slot (need to discuss with Laura)
  - FRP Bolts and nuts decided (part list need to be finalized)
  - Drawings should be ready for production by the end of this week

Slide from Bo Yu

Profile in Various Slots on the FC I-Beam

Slot shapes: rectangle with 1mm top clearance, 2mm top offset, 3mm top offset

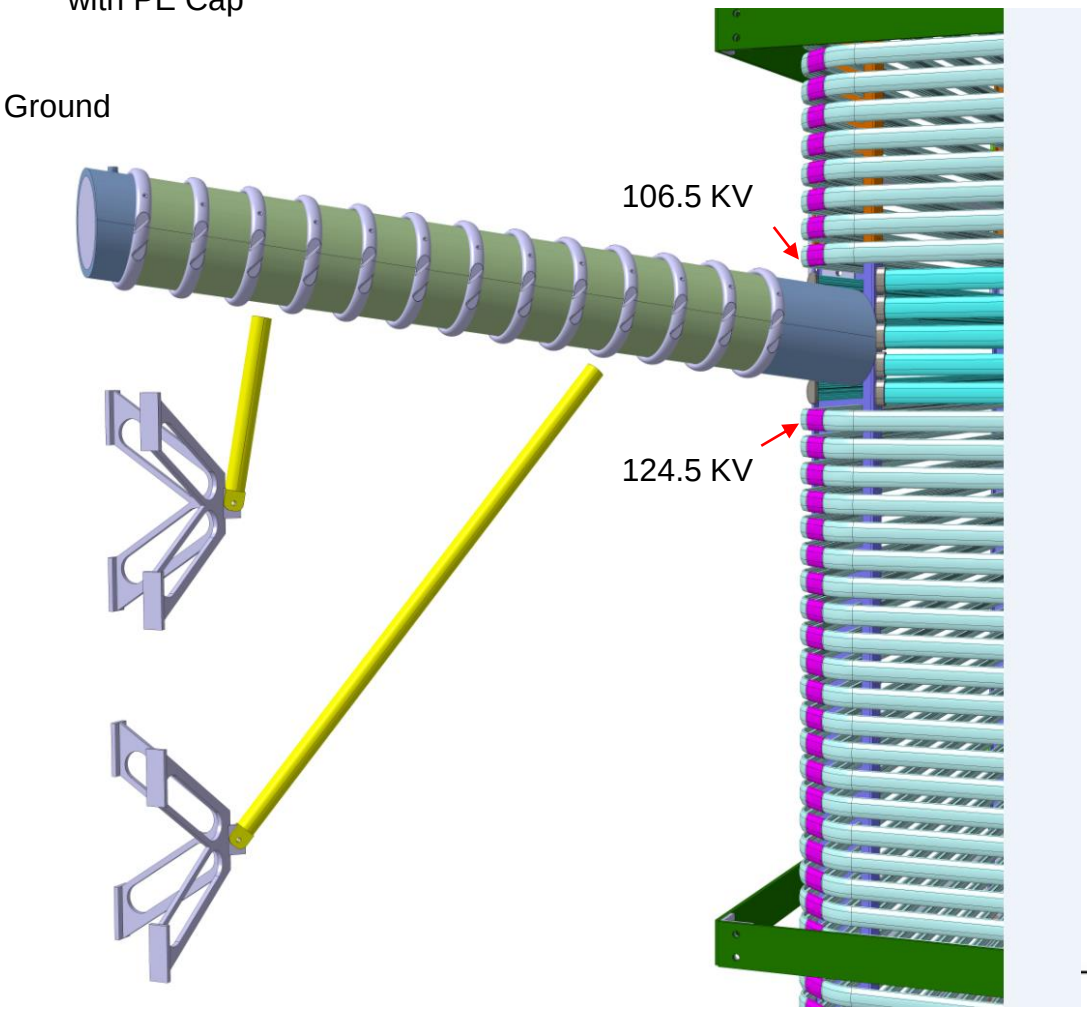


- BeamPlug Update
  - Correct the lenght
  - Reduced the number of the fieldrings
  - Removed the Alu FC profile that interfere with the Beam plug

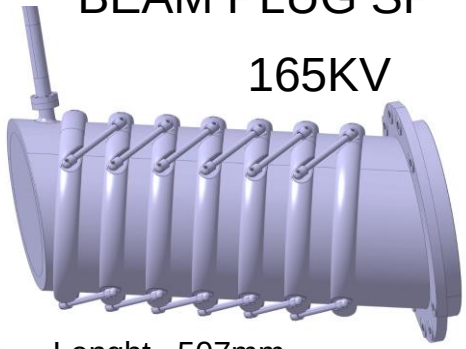
Beam Plug Proposal

- Lenght ~1.7m
- Max Voltage 124.5 KV
- 13 Field Rings
- Distance between Field Rings 114 mm
- 5 Fieldshaper of the Field Cage interrupted with PE Cap

- Design from SP
- Removed connection Flange at the FC
- Nitrogen Gas Inlet (~1 bar)
- Total weight in warm ~ 100 Kg
- Total weight in Lar ~30 Kg
- Present lenght ~1,7 m



BEAM PLUG SP 165KV



- Lenght ~507mm
- 7 Field Rings
- Voltage Max 165KV
- Distance between Field Rings 57mm

Super Mox Series

High Voltage

High-voltage Super Mox resistors have been developed to meet the precision temperature stability requirements of high-accuracy and high-voltage systems. Super Mox combines proprietary non-inductive resistance system and design to achieve low temperature coefficient, low voltage coefficients, high stability and increased high operating voltages. These resistors are designed to meet the demanding requirements of high voltage power supplies, electron microscopes, X-ray systems, high resolution CRT displays and geophysical instruments.

Uncoated resistor element pictured for demonstration purposes only. Finished product is coated with silicone.

SERIES SPECIFICATIONS

Series	Power Rating (W)	Max. Oper. Voltage	Res. Range (Ω)	VCR*
MOX910	3.80	15,000	1K-500M	0.40
			500M-5G	0.75
MOX920	5.00	21,000	1K-1G	0.20
			1G-10G	0.40
MOX930	7.50	30,000	1K-1G5	0.15
			1G5-15G	0.30
MOX940	10.00	45,000	1K-2G5	0.10
			2G5-25G	0.15
MOX950	13.50	60,000	1K-3G	0.08
			3G-30G	0.12
MOX960	16.00	72,000	1K-4G	0.06
			4G-40G	0.10
MOX970	20.00	90,000	1K-5G	0.04
			5G-50G	0.08

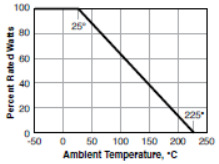
* typical values, contact factory for details

CHARACTERISTICS

Resistance Range	from 1KΩ to 50GΩ on all models (contact Ohmite for 51G to 1TΩ)
Tolerances	0.05%, 0.1%, 0.25%, 0.5%, 1%, 2%, 5%, 10% (0.05% avail. to 10G, 0.25% to 100G, other on request)
Temperature Coefficients	5, 10, 15, 25, 50 and 100ppm/°C (10ppm/°C available to 10G, 25ppm/°C to 100G, other on request. Temperature coefficient referenced to 25°C, ΔR taken at +125°C.
Encapsulation	Silicone Conformal Coating
Terminal Material	Gold Plated
Core Material	Al_2O_3 (96%)
Resistor Material	Ruthenium Oxide
Operating Temperature	-55°C to 225°C (extended temperature range to 350°C available)

Insulation Resistance	>10,000 MΩ	500 Volt 25 °C 75% relative humidity
Dielectric Strength	>1,000 Volt	25 °C 75% relative humidity
Thermal Shock	Δ R/R < 0.1% typ., 0.20% max.	MIL Std. 202, method 107 Cond. C (IEC 68 -2 -14)
Overload	Δ R/R < 0.1% typ., 0.25% max.	1,5 x Pnom, 5 sec (do not exceed max. voltage)
Moisture Resistance	Δ R/R < 0.1% typ., 0.25% max.	MIL Std. 202, method 106 (IEC 68 -2 -3)
Load Life	Δ R/R < 0.1% typ., 0.25% max.	1000 hours at rated power (IEC 115 -1)

Derating



(continued)

OHMITE

Information for the Resistors (T.Loew)

http://www.ohmite.com/
http://www.ohmite.com/cat/res_supermox.pdf

Thank you.....