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Channels configuration

The lbRichHV/lbRichHV_configurator.pnl allows to create the logical and FSM views for both RICH 1 and RICH 2, by using the following convention for RICH 1 and RICH 2 columns.

RICH 1

channel000: PDM0 PK
channel001: PDM0 Dy12
channel002: PDM1 PK
channel003: PDM1 Dy12
channel004: PDM2 PK
channel005: PDM2 Dy12
channel006: PDM3 PK
channel007: PDM3 Dy12
channel008: PDM4 PK
channel009: PDM4 Dy12
channel010: PDM5 PK
channel011: PDM5 Dy12

RICH 2

channel000: PDM0 PK
channel001: PDM1 PK
channel002: PDM2 PK
channel003: PDM2 Dy12 (monitoring only, i.e. not in the FSM)
channel004: PDM2 Dy11 (monitoring only, i.e. not in the FSM)
channel005: PDM3 PK
channel006: PDM3 Dy12 (monitoring only, i.e. not in the FSM)
channel007: PDM3 Dy11 (monitoring only, i.e. not in the FSM)
channel008: PDM4 PK
channel009: PDM5 PK

If it will be needed to power the dynodes in RICH 2, a dedicated button will allow to append these devices to the FSM.

FSM types

DU

fwCaenChannelDefault: standard LHCb type for CAEN channels, to be used for H-type PDMs.
fwCaenChannelRICHPK: modified type for CAEN channels corresponding to PK, to be used for R-type PDMs (standard behaviour if used with HV_Domain_v2 logical object type, it allows properly powering of dynodes if used together with the RICH_HV logical object type).
fwCaenChannelRICHDy12: modified type for CAEN channels corresponding to Dy12 and Dy11, to be used for PDMs with PK and dynodes.

CU/LU

HV_Domain_v2: to be used for all the CUs and LUs down to the PDM level excluded. If the PDM does not include dynodes, it will be of HV_Domain_v2 type as well.
RICH_HV: to be used for the PDM LUs having dynodes as children.

Recipe configurator

It can be opened from the lbRichHV_configurator.pnl. It allows to create different recipes. Currently, if you want to modify an existing recipe by using this panel, you need first delete it from the Manage section of the Configuration DB. The current limits are set 20 uA above the theoretical limit.

There are currently two recipes available: PHYSICS and CALIBRATION. For both the trip time is set to 0.1s, vMaxSoftware = 1101 V, rDwnSpeed = 40 V/s, rUpSpeed = 20 V/s.

PHYSICS

SBY1: v0 = 700 V, i0_Htype = 1140 uA, i0_Rtype = 3750 uA
SBY2: v0 = 1000 V, i0_Htype = 1700 uA, i0_Rtype = 5400 uA
RDY: v0 = 1000 V, i0_Htype = 1620 uA, i0_Rtype = 5350 uA

CALIBRATION

SBY1: v0 = 800 V, i0_Htype = 1300 uA, i0_Rtype = 4290 uA
SBY2: v0 = 900 V, i0_Htype = 1460 uA, i0_Rtype = 4820 uA
RDY: v0 = 1050 V, i0_Htype = 1720 uA, i0_Rtype = 5650 uA

-- GiovanniCavallero - 2019-09-04

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