# Draft: Controls suffix naming guide CLARA/VELA

## Document history

|  |  |  |  |
| --- | --- | --- | --- |
| Version | Author | Amendment | Date |
| 0.1 | RFC | Initial draft | 03-02-20167 |
| 0.2 | DJS | Ammendments | 13-02-1017 |
| 0.3 | RFC | Addeded changes for VM |  |
|  |  |  |  |

## Notes:

Get: to read a value from a PV

Set: to put a value to a PV.

Anything marked VM is for the simulation mode only.

## Magnets

|  |  |  |
| --- | --- | --- |
| SI | Double  Amps | Set Current |
| RI | Double  Amps | Get Current |
| Sta | Enum | Get status:   |  |  | | --- | --- | | 0 | OFF | | 1 | ON | | 2 | TIMING | | 3 | UNPLUGGED | | 4 | UNDEFINED | | 5 | ON\_FAULT | | 6 | OFFLINE | |

### Magnet PSU

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| On | Enum | Set: Turn on PSU   |  |  | | --- | --- | | 0 | OFF | | 1 | ON | |
| Off | Enum | Set: Turn off PSU   |  |  | | --- | --- | | 0 | OFF | | 1 | ON | |
| Rst | Enum | Set: Reset PLC   |  |  | | --- | --- | | 0 | RESET | | 1 | RESET | |
| RIRAN | Double  VM only | Set Rnd. For VM only. Percent to randomise the PSU. Default at 5% |
| Cmi | MMBI  DIRECT  VM set | Set: 16 flags. This is set from the PLC on VELA or by hand in the VM. In the VM the default is all interlocks are GOOD and equals 65535. Ilk<n> reads these flags |
| Ilk<n> | <n> 1- 16  BI ENUM | Get: Interlock status, see Cmi above   |  |  | | --- | --- | | 0 | BAD | | 1 | GOOD | |

### Magnet Polarity

|  |  |  |
| --- | --- | --- |
| PR<A,B>N:<On,Off> | Enum | Set:  Normal polarity “On”. Only changes when RI<0.5 amps  Reverse polarity “Sta” will be set to off. This is identical to reverse “Off”  Normal polarity “Off”. Only changes when RI<0.5 amps  Reverse polarity “Sta” will be set to off. This is identical to reverse “On” |
| PR<A,B>R:<On,Off> | Enum | Set:  Reverse polarity “On”. Only changes when RI<0.5 amps  Normal polarity Sta will be set to off. This is identical to Noraml “Off”  Reverse polarity “Off”. Only changes when RI<0.5 amps  Normal polarity Sta will be set to off. This is identical to Normal “On” |
| PR<A,B>N:Sta | Enum | Get:  Normal polarity on   |  |  | | --- | --- | | 0 | OFF | | 1 | ON | |
| PR<A,B>R:Sta | Enum | Get:  Reverse polarity on   |  |  | | --- | --- | | 0 | OFF | | 1 | ON | |

## BPMs

|  |  |  |
| --- | --- | --- |
| X | Waveform  Double  Size 4101  Units mm | Get:  X voltage. First index only |
| Y | Waveform  Double  Size 4101  Units mm | Get:  Y voltage. First index only |
| DATA:B2V | Sub-array  Size 32773 | Get:  Bits to volts |
| RA1 | LONGIN | Get:  Attenuation |
| RA2 | LONGIN | Get:  Attenuation |
| RD1 | LONGIN | Get:  Delay |
| RD2 | LONGIN | Get:  Delay |
| SA1 | LONGIN | Set:  Attenuation |
| SA2 | LONGIN | Set:  Attenuation |
| SD1 | LONGIN | Set:  Delay |
| SD2 | LONGIN | Set:  Delay |

## Camera

|  |  |  |
| --- | --- | --- |
| ArrayData | Waveform  Size 1447980  DOUBLE | Get:  Data |
| DistribX | Waveform  Size 1000  DOUBLE | Get:  X distribution |
| DistribY | Waveform  Size 1000  DOUBLE | Get:  Y distribution |
| X | DOUBLE | Get:  X |
| Y | DOUBLE | Get:  Y |
| SigmaX | DOUBLE | Get:  Sigma X |
| SigmaY | DOUBLE | Get:  Sigma Y |

## YAG

### Simple

### INJ: 6,7,8,9 BA2:1

|  |  |  |
| --- | --- | --- |
| Sta | Waveform  Size 1447980  DOUBLE | Get:  Status |
| On | Waveform  Size 1000  DOUBLE | Set:  Turn on |
| Off | Waveform  Size 1000  DOUBLE | Set:  Turn off |
| Rst | DOUBLE | Set:  Reset |

### Complex Global

### INJ: 1,2

Setters:

STOP

V/H: MABS(out, Yag, slit, RF, 50u Slit)

Getters:

V/H: PROT01

V/H: PROT02

V/H: RPWRLOSS

V/H: RPOS (mm)

### Complex: Full Controls Vertical and Horizontal controls popup

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| STA | ENU  Note:  Only 0 or 1 used in the VM | Get   |  |  | | --- | --- | | 1 | Trajectory in progress | | 2 | Historical Pos HW Limit | | 3 | Historical Neg HW Limit | | 4 | Index report available | | 5 | Wraparound occurred | | 6 | Excessive position error | | 7 | Temperature fault | | 8 | Motot is off | | 9 | Index input | | 10 | Pos HW limit reached | | 11 | Neg HW limit reached | | 12 | Maths overflow | | 13 | Index error | | 14 | Syntax error | | 15 | Over current | | 16 | Program checksum error | |
| STP | ENUM | Set  Stop this axis |
| RST | ENUM | Set  Reset this axis |
| HOM | ENUM | Set  Home this axis |

STA🡪 Seems to be directly connected to the PLC. Get info from EDM

RST🡪 Reset this axis

HOM🡪Home this axis

STP🡪 Stop this axis

## Scope

Double:

P1, P2, P3, P4

TIMEBASE

VRANGE

Waveform, size 2002, Double:

TR1, TR2, TR3, TR4