PRODUCT DESCRIPTION

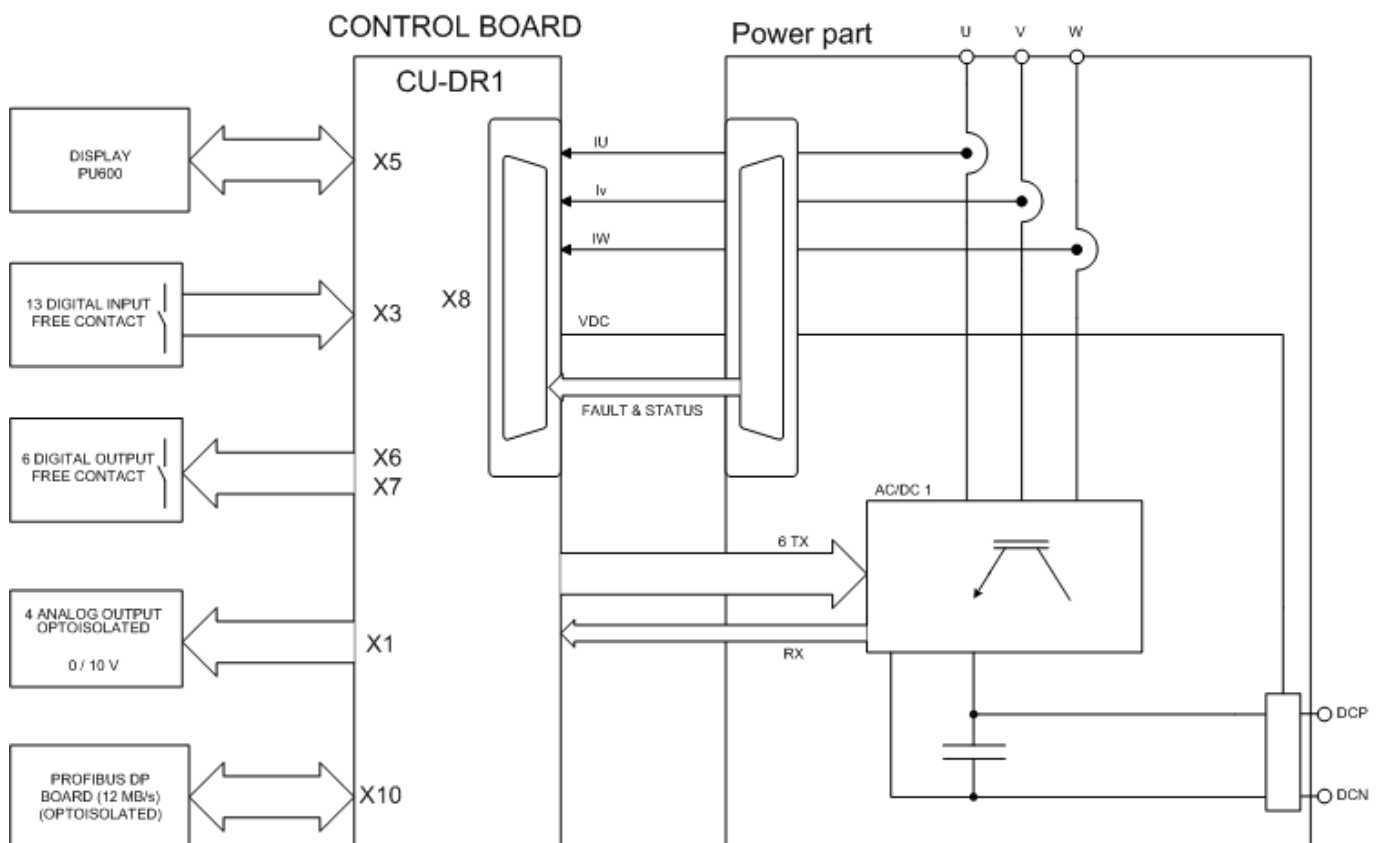The control unit CU-DR01 is a device for manage the AC/DC FFE converter type CF.FFE.

The system consists of a control unit (CU-DR01), an operator panel (PU600), a power module (or several power module with a parallel board), a precharge unit inside the first converter, a precharge contactor and the Main circuit breaker for bypass the precharge converter and a line reactor.

The control unit, CU-DR01, interfaces with the power section by means of optical fibers and through a DB25 cable. The power unit size is automatically determined by the control and the parallel rack CU-P and up to 8 power units connected in parallel are managed in a transparent mode.
The control unit CU-DR1 also provides:

- 13 digital input.
- 6 digital output.
- 4 analog output 0/10V.
- Profibus interface.
- Operator panel.

The input / output units are summarized in the figure below:

To supply the control board is needed an external 24Vdc.

The control rack is supplied via the control terminal X9 with a external supply voltage of 24Vdc, and is interfaced with the parallel card by the connector X8.
The three-phase voltage for synchronization with the power supply must be connected to the terminal X4, this 3 voltages (plus the neutral connection) came from the Xsync connector of the power part.

The precharge contactor is driven by the control rack through contact X7:1-2, the main contactor is driven by contact X7:3-4, and the cooling fans contactor of the power modules can be closed with the contact X7:5-6.
For all this 3 digital output is necessary to use an interface external relay for command the:
Precharge contactor (with the contact X7:1-2),
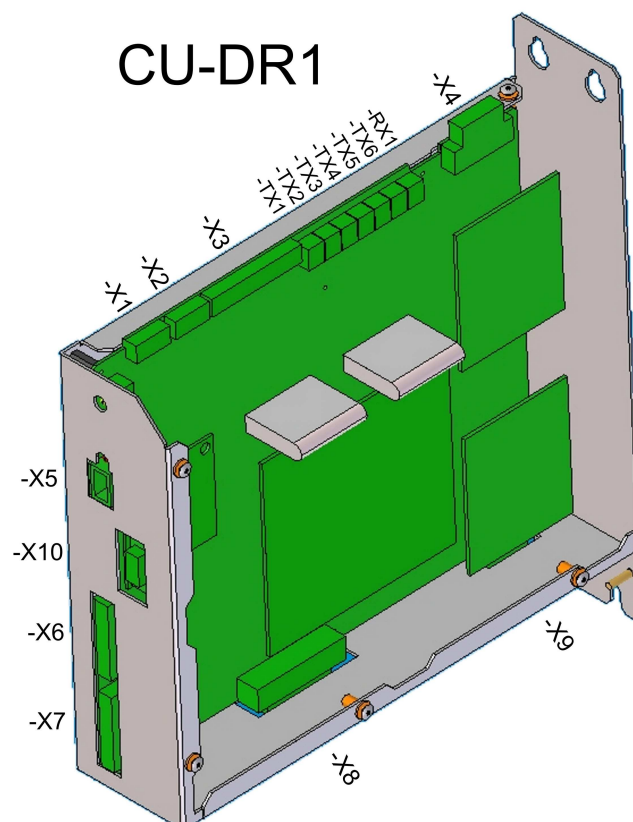Main Circuit braking (with the contact X7:3-4),
Fan contactor (with the contact X7:5-6).
Is possible to use the internal precharge board (named DCS_1), if it's present in the converter part.

The digital inputs of the control rack can be connected in order to receive commands from the PLC (when is not used the Profibus communication) or to receive the status of some external protections to configure alert actions or failure events with which disable the drive running.

The operating panel called PU600, mounted on the front panel that contains the control rack (at a distance of less than 2 meters) is connected to the terminal X5, through it is possible visualize and modify the current data of the drive, as well as communicate through a USB port on a PC.

The control system CU-DR01 is placed within a rack and must be fixed on a metal plate near the parallel rack CU-P and near the of the power unit.

TECHNICAL FEATURES

The following are the technical data of the control rack CU-DR01 and the operator panel PU600

Power supply	24Vdc (in the range of 18Vdc ÷ 36Vdc), max 1A
Digital Inputs	12 + pulse enable
Digital Inputs voltage	in the range of 10Vdc ÷ 30Vdc
Digital Inputs Min current	4 mA
Digital Inputs max current	15 mA
Digital Inputs isolation voltage (from control)	3 kV
Digital Outputs (free of voltage)	6
Nominal voltage of the output free contact	250 Vac
Nominal current of the output free contact	10 A
Number of synchronization inputs	3
Nominal Voltage	100 Vac
Max Voltage of synchronization inputs	120 Vac
External fuses of synchronization inputs	2 A
Analog Output	4
Output Voltage	0 ÷ 10Vdc
Analog Output isolation voltage	2 kV
Communication Protocol	Profibus
Number of input word	16
Number of output word	16
Number of bit for each word	16
Maximum communication speed	12 MBaud
Output optical fiber (transmission)	6
Input optical fiber (fault receive)	1
Maximum length of optical fiber	10 meters
Interfacing with power section (parallel card)	through optical fiber (6 in transmission, 1 receiving), And with 25-pin connector
Control rack dimension	Width 70 mm - Height 300 mm - Depth 280 mm
Control rack weight	4 Kg
Operator panel dimension	Width 167 mm - Height 117 mm - Depth 47 mm
Panel cutout in the switchboard door	Width 150 mm – Height 91 mm
Operator panel weight	0.5 Kg
Ambient temperature:	
Storage	From -20°C to 80°C
Operation	From -10°C to 65°C