VEDA MC

MCD3
RS485 Profibus communication protocol

Contents

Installation and configuration

This document outlines the Profibus serial communication protocol for digital medium voltage soft starters (MCD3)

Profibus serial communication of MCD3 is mainly designed for data exchange.

The local bus can read the current parameters of the MCD3 medium voltage soft starter, and can also control the 3 functions of the MCD3 medium voltage soft starter;

1. Start/stop relay
2. Double regulation
3. Fault reset

It can be set that the MCD3 medium-voltage soft starter only supports the host computer to read the current parameters of the soft starter, without functional control.

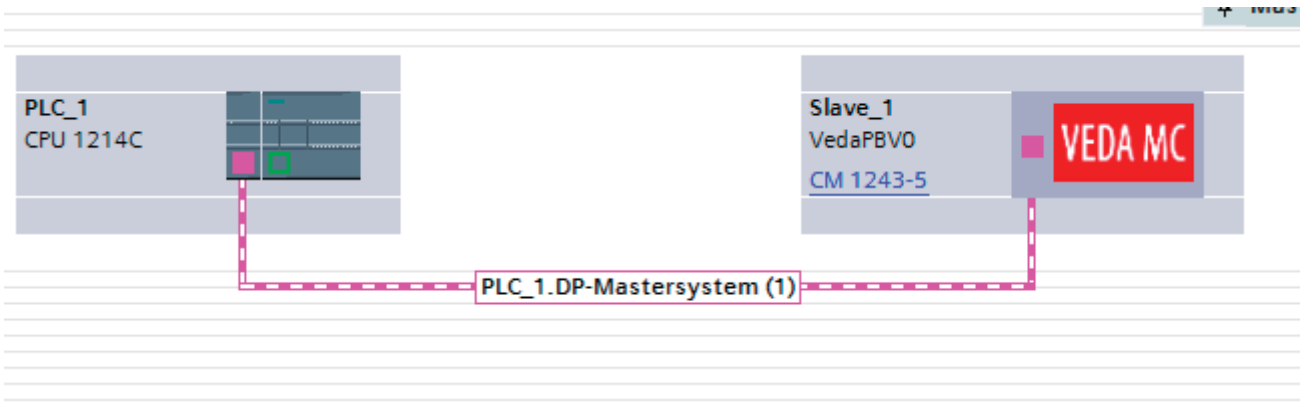
When the MCD3 is equipped with a Profibus module, it contains an internal relay board, the relay (K1) is controlled through the LAN, and its output (normally open) contact can be used to start/stop the soft starter.

When configuring the Profibus module, support the standard GSD configuration file.

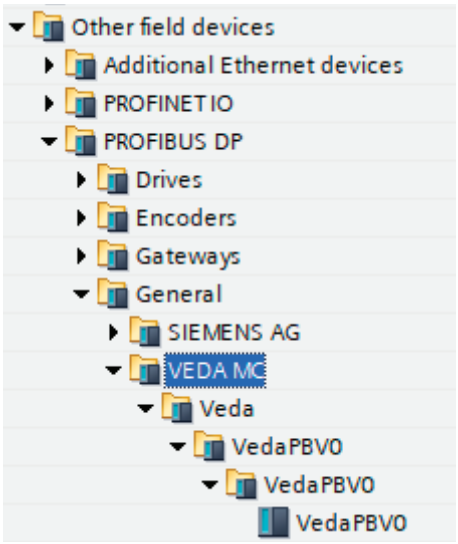
When it is detected that the tripping flag in the Logic status parameter (input parameter #1) is 1, the host should write the stop command (5A00) immediately, so as to avoid the soft starter malfunctioning after the fault is reset!

Before connecting the serial communication, the HPMV-DN soft starter must be reliably grounded, otherwise the serial communication hardware may be damaged!

The screenshot of the configuration example:



The screenshot of the catalog example:



local bus interface

The MCD3 control unit includes a 9-pin socket

Pin	Name	
Socket	Shield	Connecting to the base
1	Unused	
2	Unused	
3	B-Line	Positive polarity receiving end RxD/transmitting end TxD (according to RS485 standard)
4	Unused	
5	Unused	
6	Unused	
7	Unused	
8	A-Line	Negative polarity receiving end RxD/transmitting end TxD (according to RS485 standard)
9	Unused	

Set up

The PRFIBUS-DP module of the MCD3 medium-voltage soft starter needs to set the communication parameters (modbus), the baud rate is 9600, the even parity, and the station number is 1.

baud rate

Support all Profibus standard baud rates from 9.6K bit/Sec to 12M bit/Sec

terminal

The MCD3 Profibus module does not include a termination circuit. When the MCD3 is used as the initial or final node of the network, an external termination circuit must be used.

node address

The node address should be set before setting the MCD3 module. The node address can be set between 1-99 by setting the rotary switch on the communication module.

Input parameter (32bytes)

Input parameter

Parameter	No.	Description	
Logic status	1-2	Current logical state of MCD3 d15: MCD3 trip d14: motor stop d13: During soft stop d12: During soft start d11: motor running d10: double parameter on d09: work in energy saving mode d08: work in forward slow mode d07: work in reverse slow mode d06: insulation alarm d05.. ,d00: not used	
Current	3-4	Current current (unit: %FLA)	
Voltage	5-6	Current inlet wire (unit: V)	
Phase sequence	7-8	1 : normal 0 : abnormal	
Input control	9-10	MCD3 current control signal input status: D15...D8: not used D7: External fault input 2, 20# input terminal D6: External fault input 1, 19# input terminal D5: reserved D4: Programmable input, 8# input terminal; (0: double adjustment, 1: reset) D3: Programmable input, 7# input terminal; (0: test, 1: reset) D2: Soft start input, 6# input terminal D1: Soft stop input, 5# input terminal D0: stop (emergency stop), 4# input terminal	
DIP Switch	11-12	MCD3 internal DIP switch setting state D15...D8: not used D7..D0: DIP switch setting state See the operation manual for details	
Insulator resistor	13-14	Electrode insulation resistance (need to configure the insulation test test option)	
Logic state before power failure	15-16	Controls the logic state before power failure See logic state description	
Total running time	17-18	MCD3 total running time(Hour)	
Total start times	19-20	MCD3 total start times	
The time of the previous start process	21-22	The time of the previous start process (second)	
Peak current during previous start	23-24	Peak current during previous start	
Waiting time for frequent starts	25-26	MCD3 has frequent starting faults, and the required waiting time	
Total trips	27-28	MCD3 total trip times	
Reason for previous trip (ID)	29-30	MCD3 reason of previous trip :	
		01	Over temp. of thyristor
		02	overcurrent
		03	Overload
		04	undercurrent
		05	undervoltage
		06	Overvoltage
		07	Phase loss
		08	Phase sequence error

Parameter	No.	Description	
		09	SCR short circuit
		10	Start overtime
		11	Low speed run overtime
		12	Connecting error
		13	External fault
		14	Parameter set fault
		15	EMI/RFI fault
		16	Start too often 17
		17	Motor insulator
current pre-trip	31-32	Current when tripping	

Parameter output (2bytes)

The high byte must be set to 5A (hexadecimal), other values are invalid The low byte is:

D7	D6	D5	D4	D3	D2	D1	D0
reset (set 1 to reset)	Slow running direction selection (Set 1 for reverse, 0 for forward)	Slow running ON/OFF (Set 1 for slow, 0 for normal)	Dual adjusting (Set 1 as on, 0 as off)	Saving power switch (Set 1 as on, 0 as stop)	Soft start (Set 1 as start)	Soft stop (Set 1 as stop)	Emergency stop (Set 1 emergency stop)

For example :

5A01 as emergency stop

5A02 as soft stop

5A04 as soft start

5A80 as reset

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These instructions should not be used as a replacement for VF-101 operating instructions.

VEDA MC has tested and checked the information provided in these instructions.

In no event, VEDA MC shall be liable for any direct, indirect, actual, or incidental damages arising out of use or misuse of information contained in this document.

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VEDA MC LLC