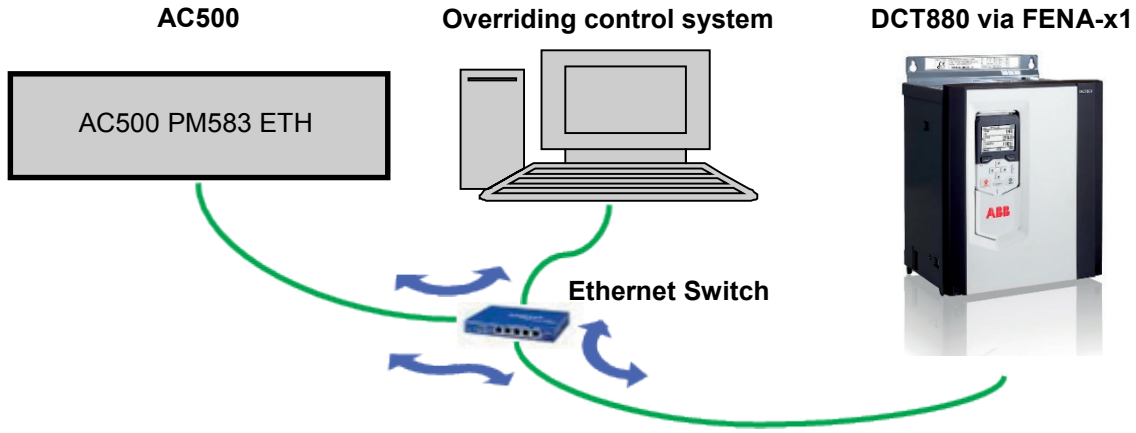
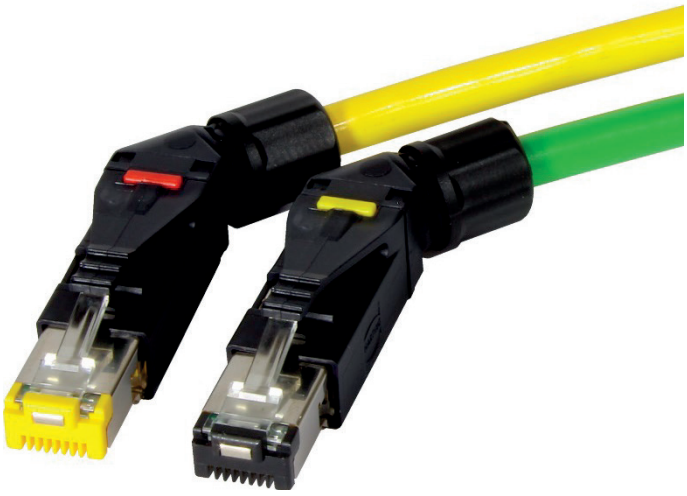
Productinformation
DCT880 via FENA-01

Connection of DCT880 via FENA-x1 at Modbus TCP





Patch Cable:
RJ45-Stecker, Harting RJ Industrial10G.

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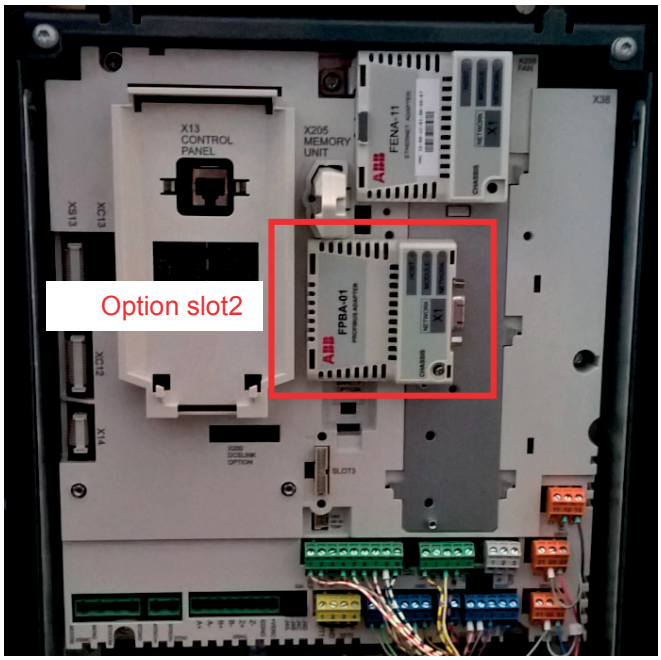
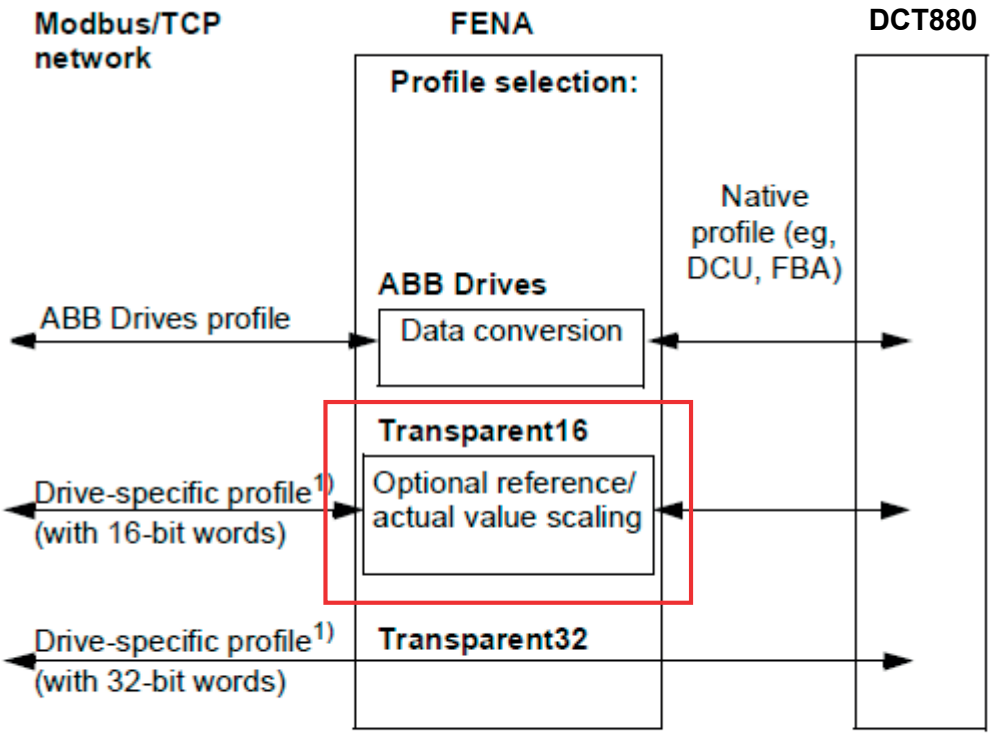
DCT880 Configuration as fieldbus device

To connect the DCT880 as fieldbus device, the following parameters need to be set:

Parameter	Setting
50.01 FBA A Enable	0: Disable; 1: Option slot1; 2: Option slot2; recommended. 3: Option slot3; 
50.02 FBA A comm loss func	0: No action; 1: Fault; only for profiles ABB DRIVES and PROFIdrive. 2: Warning; 4: Fault always; also for transparent 16. 5: Warning always; also for transparent 16.
50.03 FBA A comm loss t out	0.3 …. 6553.5 seconds.

Communication Profiles



1) Can be used if the native profile is supported by the drive.

Parameter Group 51

Parameter	Setting
51.01 FBA A type	128: Ethernet; This parameter is read-only.
51.02 Protocol/Profile	0 … 7 for Modbus TCP using 0 = MB/TCP ABB C Modbus/TCP: ABB Drives profile - Classic 1 = MB/TCP ABB E Modbus/TCP: ABB Drives profile - Enhanced 2 = MB/TCP T16 Modbus/TCP: Transparent 16-bit profile 3 = MB/TCP T32 Modbus/TCP: Transparent 32-bit profile 4 = MB/UDP ABB C Modbus over UDP: ABB Drives profile - Classic 5 = MB/UDP ABB E Modbus over UDP: ABB Drives profile - Enhanced 6 = MB/UDP T16 Modbus over UDP: Transparent 16-bit profile 7 = MB/UDP T32 Modbus over UDP: Transparent 32-bit profile 10 … 14 for PROFINET IO 100 … 103 for Ethernet/IP
51.03 Commrate	0: Auto; Sets the bit rate for the Ethernet interface.
51.04 IP configuration	0: Static IP; example. 1: Dyn IP DHCP;
51.05 IP address 1	192; example.
51.06 IP address 2	168; example.
51.07 IP address 3	1; example.
51.08 IP address 4	10; example.
51.08 Subnet CIDR	24; example.
51.19 T16 scale	0; Scaling: 10,000 == 100.00 %.

Dotted decimal	CIDR
255.255.255.254	31
255.255.255.252	30
255.255.255.248	29
255.255.255.240	28
255.255.255.224	27
255.255.255.192	26
255.255.255.128	25
255.255.255.0	24
255.255.254.0	23
255.255.252.0	22
255.255.248.0	21
255.255.240.0	20
255.255.224.0	19
255.255.192.0	18
255.255.128.0	17
255.255.0.0	16

Cyclic Register Mapping

Register Address	Register Data (16bit)	Drive Parameter
(4)00001	Native Profile Control Word	6.03 FB A CW
(4)00002	Native Profile Reference 1	3.05 FB A Reference 1
(4)00003	Native Profile Reference 2	3.06 FB A Reference 2
(4)00004	DATA OUT 1	53.01 FB A data out1 (Pointer)
(4)00005	DATA OUT 2	53.02 FB A data out2 (Pointer)
~	~	~
(4)00015	DATA OUT 12	53.12 FB A data out12 (Pointer)

Register Address	Register Data (16bit)	
(4)00051	Native Profile Status Word	50.09 FB A SW tr src (Pointer)
(4)00052	Native Profile Actual 1	50.10 FB A act1 tr src (Pointer)
(4)00053	Native Profile Actual 2	50.11 FB A act2 tr src (Pointer)
(4)00054	DATA IN 1	52.01 FB A data in1 (Pointer)
(4)00055	DATA IN 2	52.02 FB A data in2 (Pointer)
~	~	~
(4)00065	DATA IN 12	52.12 FB A data in12 (Pointer)

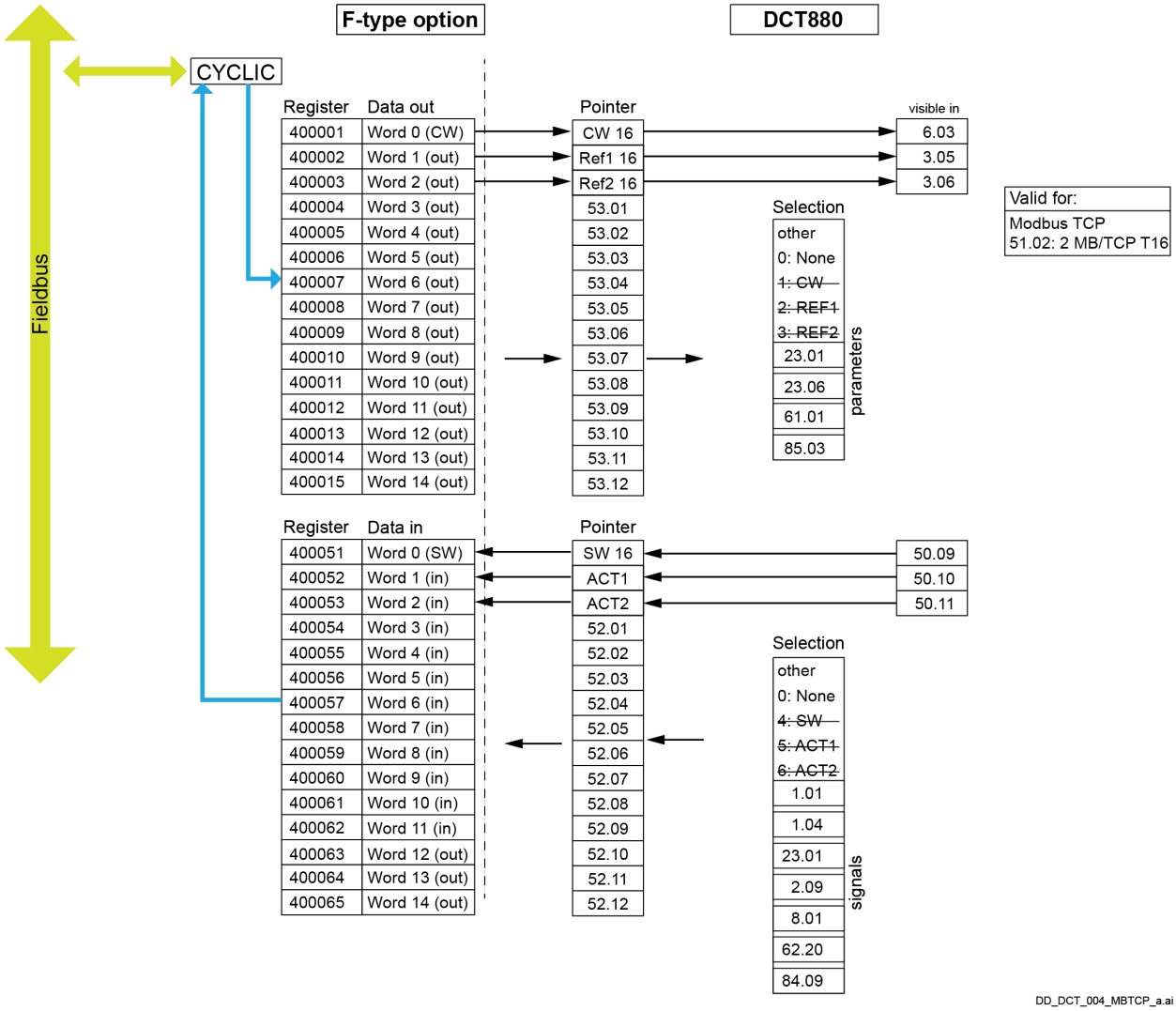
Parameter Access

(4)00101…(4)19999	Drive Parameter Access (16-bit) Register Address = 400000 + 100 × Group + Index Example for Drive Parameter 3.18: (4)00000 + 100 × 3 + 18 = 400318 Note: Addressing depends on the address mode selected with parameter group 23 in group A (51/151, 54/154).

Supported Functions

Function code	Name	
03h	Read Holding Registers	Reads the contents of a contiguous block of holding registers in a server device
06h	Write Single Register	Writes a single holding register in a server device.
10h	Write Multiple Registers	Writes the contents of a contiguous block of holding registers in a server device.
17h	Read/Write Multiple Registers	Writes the contents of a contiguous block of holding registers in a server device, then reads the contents of a contiguous block of holding registers (same or different than those written) in a server device.
2Bh/0Eh	Encapsulated Interface Transport / Read Device Identification	Allows reading identification and other information of the server. Parameter "Read Device ID code" allows one to define three access types: • 01: Request to get the basic device identification (stream access) • 02: Request to get the regular device identification (stream access) • 04: Request to get one specific identification object (individual access).

Configuration using Ref1 and Ref2



	Setting of parameters 53.01 ... 53.03 see above drawing.
⚠	For parameters 53.01 … 53.12 use Other; source selection. Mappings 1: CW 16bit; 2: Ref1 16bit; 3: Ref2 16bit; are not allowed.

Parameter Settings

Defining the reference values in group 53: PLC ⇒ DCT880.			
Register	**Pointer**	**Setting**	**Remarks**
400001	Fixed	CW 16bit;	Control Word; visible in 6.03 FBA A CW.
400002	Fixed	Ref1 16bit;	Reference value 1; visible in 3.05 FB A reference 1. Scaling: 10,000 == 100.00 %.
400003	Fixed	Ref2 16bit;	Reference value 2; visible in 3.06 FB A reference 2. Scaling: 10,000 == 100.00 %.
400004	53.01	Other; e.g. 21.11	Reference value 3; visible in 21.11 Ext reference 1. Scaling: 10,000 == 100.00 %.
	…		
400015	53.12	…	Reference value 12; … Scaling: 10,000 == 100.00 %.

Defining the actual values in group 50 & 53: PLC ⇐ DCT880.			
Register	**Pointer**	**Setting**	**Remarks**
400051	50.09	4: SW 16bit;	50.09 FBA A SW transparent source = Other; e.g. 06.13 Global Status Word.
400052	50.11	Other; e.g. 01.53	Actual value1; e.g. 01.53 Leg 1 Power relative actual. Scaling: 10,000 == 100.00 %.
400053	50.12	Other; e.g. 01.54	Actual value 2; e.g. 01.54 Leg 2 Power relative actual. Scaling: 10,000 == 100.00 %.
400054	52.01	Other; e.g. 01.55	Actual value 3; e.g. 01.55 Leg 3 Power relative actual. Scaling: 10,000 == 100.00 %.
	…		
400065	52.12	…	Actual value12; … Scaling: 10,000 == 100.00 %.

Each change in parameter groups 50, 51, 52 and 53 must be validated using 51.27 FBA A par refresh = Refresh.

Scaling the reference values

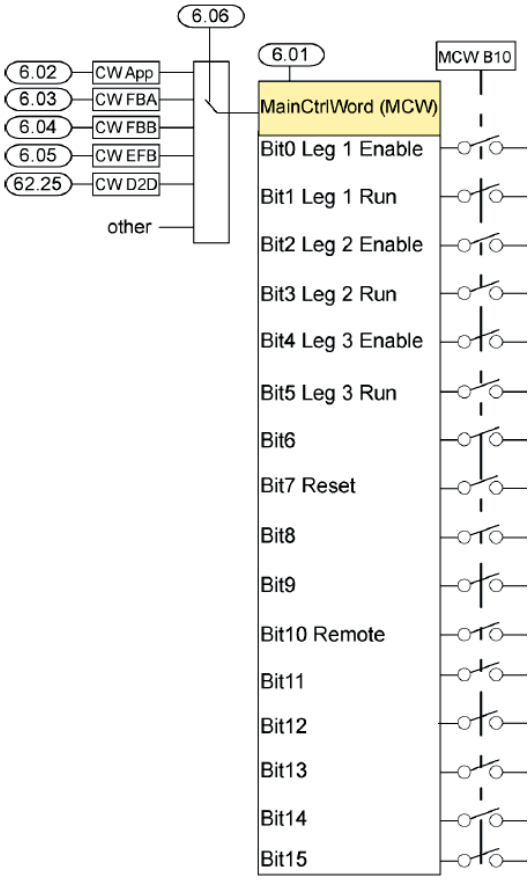
The reference values are scaled to ±10,000 (decimal), this equals ±100.00 %.

Additional Parameters

Start / Stop

Parameter	Setting
06.06 MCW Source	1: FBA A (6.03);
19.10 Leg 1 Command Location Selector	0: MCW 6.01;
19.11 Leg 2 Command Location Selector	0: MCW 6.01;
19.12 Leg 3 Command Location Selector	0: MCW 6.01;

06.01 Main Control Word active



Reference Chain

Parameter	Setting
22.15 Leg 1 Cha A Main Ref Selector	4: FB A reference 1 (3.05);
24.15 Leg 2 Cha A Main Ref Selector	5: FB A reference 2 (3.06);
26.15 Leg 3 Cha A Main Ref Selector	Other; e.g. 21.11 Ext reference 1.

Known Issues

- Parameter 51.19 T16 Scale only effects REF1, REF2 is not effected
    - Solution: set 51.19 T16 Scale as recommended to 0, REF1 and REF2 will behave in the same way

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