

		DESCRIPTION		Page-Sidan
To-Till	From-Från	Date-Datum	IReg.	1
		2017-12-06		
	Dealt with by-Utfördare	Telephone-Telefon-nr		
	Sven-Erik Karlsson	021-187050		
Firmware PE1354FCV2	MFB-ProfiBus DP converter PE1354FC			

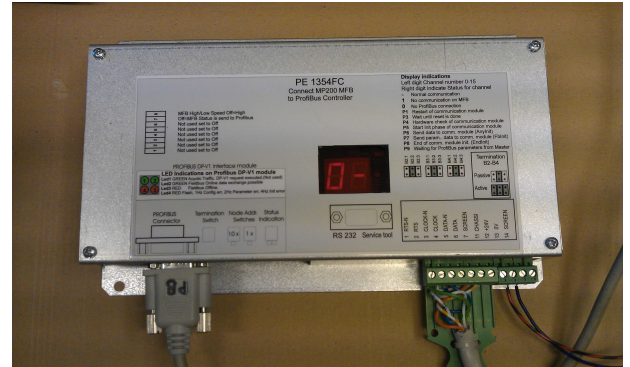
1.

GENERAL

The **PE1354FC** is a converter connected to ABB MasterFieldbus short distance bus (RS485) on one side and on **ProfibusDP** on the other side. The converter is operating at High or Low communication speed on the MFB.

The PE1354FC contains a 2-character display for status indication.

PE1354C act as up to 6 slaves on Masterfieldbus and one Slave on Profibus



2.

TECHNICAL DESCRIPTION

2.1

Dimension and mounting

To obtain the best immunity to electric noise the PE1354FC must be electrically connected to cubicle through 4 M5 screws in each corner (M5 Screw pos 220mm x135mm).

Dimensions

Size: 240mm x 145mm (w x h)

Required mounting deep: 35mm

2.2

Technical data

Auxiliary Power

+24V DC (12-30V DC), typical 120mA(3W), at startup 1A 10ms, Max fuse: 4A

Communication MasterFieldbus

RS-485

Transmission speeds 375kbit/s or 2mbit/S selected with DIP switch

Max cable length :short dist. <=25m

Cable type FLFR 3x2x0.34

Occupies 1-6 nodes on MasterFieldBus, PE1354C can operate together with other MasterFieldbus units.

Connected systems can be AC450, AC410 or MP280 with MasterFieldbus.

Communication ProfiBus DP

Standard 9 pin D-SUB connector

Transmission speeds 9.6kbit/s to 12mbit/S auto detected.

Environmental data

Operation +5..+40 degrees C., Storage -40..+70 degrees C.

To-Till	From-Från	Date-Datum	Reg.	Page-Sidan
	2017-12-06			
Dealt with by-Utfördare		Telephone-Telefon-nr		2
Sven-Erik Karlsson		021-187050		
Firmware PE1354FCV2	MFB-ProfiBus DP converter PE1354FC			

2.3 Strapping

Setting of Masterfieldus speed

DIPSW	POSITION	DEFAULT	FUNCTION
S1:1			Not used
S1:2			Not used
S1:3			Not used
S1:4			Not used
S1:5			Not used
S1:6			Not used
S1:7	Off=Status	OFF	OFF=MFB comm. Status 16 bytes sent to Profibus, ON=No status sent
S1:8	OFF=High	OFF	MFB low /high speed, Low=375 kbaud, High=2,0 MBaud

Setting of profibus address

ROTARY SWITCH	POSITION	DEFAULT	FUNCTION
S3	0-9	0	Profibus addr x 10
S2	0-9	6	Profibus addr x 1

2.4 TERMINATION of MFB bus

MasterFieldBus has 9 strapping in 3 groups for termination of the signal lines RTS, CLOCK, DATA. Two alternatives are possible.

1. PE1354FC is the last unit connected on MasterFieldBus. Then the middle strapping in all 3 groups is inserted.
2. If MasterFieldBus continue to more units after PE1354FC then no strapping is inserted for termination.

STRAPPING	FUNCTION
B2:1	RTS-N Not used on PE1354FC (Only for active termination)
B2:2	RST Inserted if PE1354FC is last unit on MasterFieldBus
B2:3	RTS Not used on PE1354FC (Only for active termination)
B3:1	CLK -N Not used on PE1354FC (Only for active termination)
B3:2	CLK Inserted if PE1354FC is last unit on MasterFieldBus
B3:3	CLK Not used on PE1354FC (Only for active termination)
B4:1	DATA-N Not used on PE1354FC (Only for active termination)
B4:2	DATA Inserted if PE1354FC is last unit on MasterFieldBus
B4:3	DATA Not used on PE1354FC (Only for active termination)

		DESCRIPTION		Page-Sidan
To-Till	From-Från	Date-Datum	Reg.	3
		2017-12-06		
	Dealt with by-Utfördare	Telephone-Telefon-nr		
	Sven-Erik Karlsson	021-187050		
Firmware PE1354FCV2	MFB-ProfiBus DP converter PE1354FC			

2.5

Status display 2 digits

First digit shows actual MasterFieldBus node addr 0-F.

At startup after power on indication P1-P9 will be displayed.

If no profibus communication is started (connected) the indication will hold on P9.

SECOND DIGIT	STATUS
P1	Restart of Communication module
P3	Wait for reset on Profibus adapter is complete
P4	Hardware check on Profibus adapter
P5	Start Init phase on Profibus adapter
P6	Init of data area on Profibus adapter (Any Init)
P7	Send parameter data to comm. Module. (FbInit)
P8	End of comm.. module init. (Endinit)
P9	Waiting for Profibus param from Profibus Master
0	No contact on Profibus
1	Contact on ProfibusDP but no contact on MFB
-	Communication is OK

2.6

Status leds on Profibus DP-V1 module



Led	State	Description
1	Green	DP-V1 request currently executed
	Off	No DP-V1 request currently executed
2	Green	Bus online, data exchange possible
	Green flashing	Clear mode
	Red	Application stopped
	Off	Bus not on line.
3	Red	Bus offline.
	Off	Bus not offline.
4	Off	No diagnostic present.
	Red,Flashing 1Hz	Error in configuration data
	Red,Flashing 2Hz	Error in parameter data
	Red,Flashing 4Hz	Error in initiation of the Profibus comm.. Asic

PROCESSELEKTRONIK AB

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Ref.
PE1354FC/2

DESCRIPTION

To-Till	From-Från	Date-Datum	Reg.	Page-Sidan
	2017-12-06			
Dealt with by-Utfördare		Telephone-Telefon-nr		4
Sven-Erik Karlsson		021-187050		
Firmware PE1354FCV2	MFB-ProfiBus DP converter PE1354FC			

2.7

Connections

TERMINAL	FUNCTION
P1	R-N MasterFieldbus RS485
P2	R MasterFieldbus RS485
P3	CLOCK-N MasterFieldbus RS485
P4	CLOCK MasterFieldbus RS485
P5	DATA-N MasterFieldbus RS485
P6	DATA MasterFieldbus RS485
P7	Cable screen
P11	Chassi
P12	+24V
P13	0V
P14	CABLE SCREEN
9 pole Dsub Female	ProfiBus DPV1
3	B-Line
4	RTS
5	GND Bus Used for termination
6	5V Bus Used for bus termination
8	A-Line
9 pole Dsub Female	Service aid
2	Txd RS232
3	Rxd RS232
5	0V

DESCRIPTION

To-Till	From-Från	Date-Datum	Reg.	Page-Sidan
	2017-12-06			
Firmware PE1354FCV2	MFB-ProfiBus DP converter PE1354FC			5
	Dealt with by-Utfördare		Telephone-Telefon-nr	
Sven-Erik Karlsson		021-187050		

2.8 GSD file and configuration

The GSD file PE1354FC.GSD shall be used for the configuration. The Field device name is "PE1354FC PROFIBUS DP-V1".

Use one device for each PE1354FC unit. Set the Profibus Node addr to same value as the rotary switches on the PE1354FC unit.

Parameter setting for the Profibus node

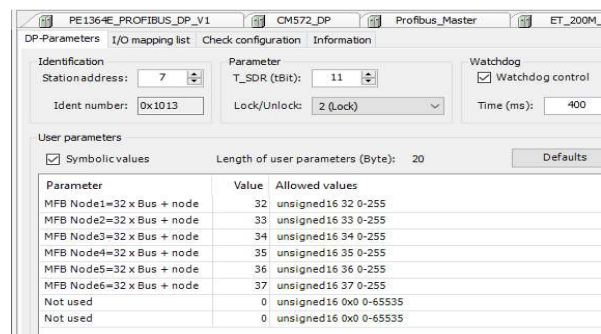
Up to 6 MasterFieldbus nodes can be used for data transfer.

Set 0 if node is not used.

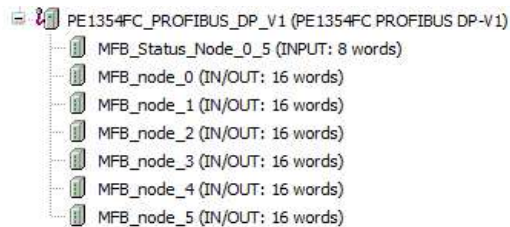
Set value=Bus num x 32 + node

Ex. Bus 3 node 1

$3 \times 32 + 1 = 97$



This configuration includes Masterfieldbus status sent to Profibus DIP S1:7=Off (Slot1)



Status of MFB bus communication

Variable	Mapping	Channel	Address	Type	Unit
Node0_Status		Input0	%IW3.84	WORD	
Node1_Status		Word1	%IW3.85	WORD	
Node2_Status		Word2	%IW3.86	WORD	
Node3_Status		Word3	%IW3.87	WORD	
Node4_Status		Word4	%IW3.88	WORD	
Node5_Status		Word5	%IW3.89	WORD	
		Word6	%IW3.90	WORD	
		Word7	%IW3.91	WORD	

DESCRIPTION

To-Till	From-Från	Date-Datum	Reg.	Page-Sidan
	2017-12-06			
Firmware PE1354FCV2	Dealt with by-Utfördare			6
	Sven-Erik Karlsson		Telephone-Telefon-nr 021-187050	

MFB-ProfiBus DP converter PE1354FC

This is IO mapping for the first MFB Node

Variable	Mapping	Channel	Address	Type	Unit	Description
		Input0	%IW3.92			
Node0_PBORD1		Word0	%IW3.92	WORD		
Node0_PBORD2		Word1	%IW3.93	WORD		
Node0_I4ORD1H		Word2	%IW3.94	WORD		
Node0_I4ORD1L		Word3	%IW3.95	WORD		
Node0_RORD1		Word4	%IW3.96	WORD		
Node0_RORD2		Word5	%IW3.97	WORD		
Node0_RORD3		Word6	%IW3.98	WORD		
Node0_RORD4		Word7	%IW3.99	WORD		
Node0_RORD5		Word8	%IW3.100	WORD		
Node0_RORD6		Word9	%IW3.101	WORD		
Node0_RORD7		Word10	%IW3.102	WORD		
Node0_RORD8		Word11	%IW3.103	WORD		
Node0_RORD9		Word12	%IW3.104	WORD		
Node0_RORD10		Word13	%IW3.105	WORD		
Node0_RORD11		Word14	%IW3.106	WORD		
Node0_RORD12		Word15	%IW3.107	WORD		
		Output0	%QW3.82			
Node0_PBIND1		Word0	%QW3.82	WORD		
Node0_PBIND2		Word1	%QW3.83	WORD		
Node0_PBIND3		Word2	%QW3.84	WORD		
Node0_PBIND4		Word3	%QW3.85	WORD		
Node0_PBIND5		Word4	%QW3.86	WORD		
Node0_I4IND1H		Word5	%QW3.87	WORD		
Node0_I4IND1L		Word6	%QW3.88	WORD		
Node0_RIND1		Word7	%QW3.89	WORD		
Node0_RIND2		Word8	%QW3.90	WORD		
Node0_RIND3		Word9	%QW3.91	WORD		
Node0_RIND4		Word10	%QW3.92	WORD		
Node0_RIND5		Word11	%QW3.93	WORD		
Node0_RIND6		Word12	%QW3.94	WORD		
Node0_RIND7		Word13	%QW3.95	WORD		
Node0_RIND8		Word14	%QW3.96	WORD		
Node0_RIND9		Word15	%QW3.97	WORD		

To-Till	From-Från	Date-Datum	Reg.	Page-Sidan
	2017-12-06			
Dealt with by-Utfördare		Telephone-Telefon-nr		7
Sven-Erik Karlsson		021-187050		
Firmware PE1354FCV2		MFB-ProfiBus DP converter PE1354FC		

Mapping of Signals from MastewrFieldBus to ProfiBus DP

COM-CVO1	MFB Node 0 ProfiBus Addr	MFB Node 1 ProfiBus Addr	MFB Node 2 ProfiBus Addr	MFB Node 3 ProfiBus Addr	MFB Node 4 ProfiBus Addr	MFB Node 5 ProfiBus Addr
Comm stat	MO000_IW0	MO000_IW2	MO000_IW4	MO000_IW6	MO000_IW8	MO000_IW10
PBORD1	MO001_IW0	MO002_IW0	MO003_IW0	MO004_IW0	MO005_IW0	MO006_IW0
PBORD2	MO001_IW2	MO002_IW2	MO003_IW2	MO004_IW2	MO005_IW2	MO006_IW2
I4ORD1H	MO001_IW4	MO002_IW4	MO003_IW4	MO004_IW4	MO005_IW4	MO006_IW4
I4ORD1L	MO001_IW6	MO002_IW6	MO003_IW6	MO004_IW6	MO005_IW6	MO006_IW6
RORD1	MO001_IW8	MO002_IW8	MO003_IW8	MO004_IW8	MO005_IW8	MO006_IW8
RORD2	MO001_IW10	MO002_IW10	MO003_IW10	MO004_IW10	MO005_IW10	MO006_IW10
RORD3	MO001_IW12	MO002_IW12	MO003_IW12	MO004_IW12	MO005_IW12	MO006_IW12
RORD4	MO001_IW14	MO002_IW14	MO003_IW14	MO004_IW14	MO005_IW14	MO006_IW14
RORD5	MO001_IW16	MO002_IW16	MO003_IW16	MO004_IW16	MO005_IW16	MO006_IW16
RORD6	MO001_IW18	MO002_IW18	MO003_IW18	MO004_IW18	MO005_IW18	MO006_IW18
RORD7	MO001_IW20	MO002_IW20	MO003_IW20	MO004_IW20	MO005_IW20	MO006_IW20
RORD8	MO001_IW22	MO002_IW22	MO003_IW22	MO004_IW22	MO005_IW22	MO006_IW22
RORD9	MO001_IW24	MO002_IW24	MO003_IW24	MO004_IW24	MO005_IW24	MO006_IW24
RORD10	MO001_IW26	MO002_IW26	MO003_IW26	MO004_IW26	MO005_IW26	MO006_IW26
RORD11	MO001_IW28	MO002_IW28	MO003_IW28	MO004_IW28	MO005_IW28	MO006_IW28
RORD12	MO001_IW30	MO002_IW30	MO003_IW30	MO004_IW30	MO005_IW30	MO006_IW30
RORD13	Not used	Not used	Not used	Not used	Not used	Not used
RORD14	Not used	Not used	Not used	Not used	Not used	Not used
I4ORD2	Not used	Not used	Not used	Not used	Not used	Not used

The module MO00 Commstat is only included if DIP S1:7 is in OFF position.

Commstat is =1 if Masterfieldbus communication is ok.

If DIP S1:7 is in On position The module MO00 must not be included in the GSD file.

2.9 Mapping of Signals from ProfiBus to MasterFieldBus

COM-CVI1	MFB Node 0 ProfiBus Addr	MFB Node 1 ProfiBus Addr	MFB Node 2 ProfiBus Addr	MFB Node 3 ProfiBus Addr	MFB Node 4 ProfiBus Addr	MFB Node 5 ProfiBus Addr
PBIND1	MO001_QW0	MO002_QW0	MO003_QW0	MO004_QW0	MO005_QW0	MO006_QW0
PBIND2	MO001_QW2	MO002_QW2	MO003_QW2	MO004_QW2	MO005_QW2	MO006_QW2
PBIND3	MO001_QW4	MO002_QW4	MO003_QW4	MO004_QW4	MO005_QW4	MO006_QW4
PDIND4	MO001_QW6	MO002_QW6	MO003_QW6	MO004_QW6	MO005_QW6	MO006_QW6
PBIND5	MO001_QW8	MO002_QW8	MO003_QW8	MO004_QW8	MO005_QW8	MO006_QW8
I4IND1H	MO001_QW10	MO002_QW10	MO003_QW10	MO004_QW10	MO005_QW10	MO006_QW10
I4IND1L	MO001_QW12	MO002_QW12	MO003_QW12	MO004_QW12	MO005_QW12	MO006_QW12
RIND1	MO001_QW14	MO002_QW14	MO003_QW14	MO004_QW14	MO005_QW14	MO006_QW14
RIND2	MO001_QW16	MO002_QW16	MO003_QW16	MO004_QW16	MO005_QW16	MO006_QW16
RIND3	MO001_QW18	MO002_QW18	MO003_QW18	MO004_QW18	MO005_QW18	MO006_QW18
RIND4	MO001_QW20	MO002_QW20	MO003_QW20	MO004_QW20	MO005_QW20	MO006_QW20
RIND5	MO001_QW22	MO002_QW22	MO003_QW22	MO004_QW22	MO005_QW22	MO006_QW22
RIND6	MO001_QW24	MO002_QW24	MO003_QW24	MO004_QW24	MO005_QW24	MO006_QW24
RIND7	MO001_QW26	MO002_QW26	MO003_QW26	MO004_QW26	MO005_QW26	MO006_QW26
RIND8	MO001_QW28	MO002_QW28	MO003_QW28	MO004_QW28	MO005_QW28	MO006_QW28
RIND9	MO001_QW30	MO002_QW30	MO003_QW30	MO004_QW30	MO005_QW30	MO006_QW30

To-Till	DESCRIPTION		Page-Sidan
	From-Från	Date-Datum	
		2017-12-06	8
	Dealt with by-Utfördare	Telephone-Telefon-nr	
	Sven-Erik Karlsson	021-187050	
Firmware PE1354FCV2	MFB-ProfiBus DP converter PE1354FC		

2.10

Function

Error handling

When ProfiBus communication node failure then the MFB communication for corresponding nodes are stopped. The PE1354FC display will indicate 0 for the actual node.

If no communication is detected for one node then display will indicate 0 for the actual node.

Signal delay example

Measuring of signal delay time MP200 / Profibus. Configuration with 6 nodes.

