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Operating manual EFR4001IP

updated: 2022-07-28 oa from firmware: 0-00

- Modbus TCP communication protocol

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1 Important Information

Please also read the general operating manual of the EFR4001IP carefully and observe the safety instructions.

2 Interface Parameters

TCP Port: 502

Max. TCP connections: 1

The Modbus TCP protocol must be activated via the integrated web server of the EFR4001IP:

- Enter the IP address of the device in the web browser (on computers in the same networks)
- Select the menu tab "network"
- Activate Modbus TCP



3 Telegram Structure

According to Modbus TCP specification. For details, refer to the Modbus original documentation, available at: http://www.modbus.org

4 Supported Function Codes

Function code	Designation	Use
3 (03H)	Read Holding Registers	Read data from the registers
16 (10H)	Write Multiple Registers	Write data into registers

5 Data Types

The following data types are used in the Modbus registers:

Data type	Size	Range of numbers
signed int	16 Bit, register value	-32768 32767
unsigned int	16 Bit, register value	0 65535
signed long	32 Bit, divided over two registers	-2147483648 2147483647
unsigned long	32 Bit, divided over two registers	0 4294967296

6 Modbus Register Tables

6.1 Reading measured values, status values and min. / max. (state: EFR4001IP)

• Modbus function code 0x03 (Read Holding Registers)

Adr.	Data type		Register	Range of	values	ProgNr.									
hex				Min.	Max.	1	2	3	4	5	6	7	8		
0x00B0	signed long	low	Actual value U - L1 [0,1 V]	1	3300	Х	Х	Х	Х	Х	Х	Х	Х		
0x00B1		high													
0x00B2	signed long	low	Actual value U - L2 [0,1 V]	1	3300	Х	Х	Х	Х	Х	Х	Х	Х		
0x00B3		high													
0x00B4	signed long	low	Actual value U - L3 [0,1 V]	1	3300	Х	Х	Χ	Х	Х	Χ	Х	Х		
0x00B5		high													
0x00B6	signed long	low	Actual value I - L1 [mA]	1	1200000	Х	Х	Χ	Х	Х	Χ	Х	Х		
0x00B7		high													
0x00B8	signed long	low	Actual value I - L2 [mA]	1	1200000	Х	Х	Х	Х	Х	Х	Х	Χ		
0x00B9		high													
0x00BA	signed long	low	Actual value I - L3 [mA]	1	1200000	х	Χ	Х	Х	Х	Х	Х	Χ		
0x00BB		high													
0x00BC	signed long	low	Actual value P - L1 [W]	-350000	350000	Х	Х	Χ	Х	Х	Χ	Х	Х		
0x00BD		high													
0x00BE	signed long	low	Actual value P - L2 [W]	-350000	350000	х	Χ	Х	Х	Х	Х	Х	Χ		
0x00BF		high													
0x00C0	signed long	low	Actual value P - L3 [W]	-350000	350000	Х	Χ	Χ	Χ	Х	Χ	Χ	Х		
0x00C1		high													
0x00C2	signed long	low	Actual value P - L123 [W]	-999999	999999	Х	Χ	Χ	Χ	Х	Χ	Χ	Х		
0x00C3		high													
0x00C4	signed long	low	Actual value S - L1 [VA]	-350000	350000	Х	Χ	Χ	Χ	Х	Χ	Χ	Χ		
0x00C5		high													
0x00C6	signed long	low	Actual value S - L2 [VA]	-350000	350000	Х	Χ	Х	Χ	Х	Χ	Х	Х		
0x00C7		high													
0x00C8	signed long	low	Actual value S - L3 [VA]	-350000	350000	х	Х	Х	Х	Х	Х	Х	Х		
0x00C9		high													
0x00CA	signed long	low	Actual value S - L123 [VA]	-999999	999999	х	Х	Х	Х	Х	Х	Х	Х		
0x00CB		high													

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Adr.	Data type		Register	Range o			Р	rog	N	r.			
hex				Min.	Max.	1	2	3	4	5	6	7	8
0x00CC	signed long	low	Actual value Q - L1 [VAr]	-350000	350000	Х	Х	Х	Х	Х	Х	Х	Х
0x00CD		high											
0x00CE	signed long	low	Actual value Q - L2 [VAr]	-350000	350000	Х	Х	Х	Х	Х	Х	Х	Х
0x00CF		high											
0x00D0	signed long	low	Actual value Q - L3 [VAr]	-350000	350000	Х	Х	Х	Х	Х	Х	Х	Х
0x00D1		high											
0x00D2	signed long	low	Actual value Q - L123 [VAr]	-999999	999999	Х	Х	Х	Х	Х	Х	Х	Х
0x00D3		high											
0x00D4	signed long	low	Actual value cos φ - L1	-10000	10000	Х	Х	Х	Х	Х	Х	Х	х
0x00D4		high	[0,0001]										
0x00D6	signed long	low	Actual value cos φ - L2	-10000	10000	х	х	Х	Х	х	Х	х	х
0x00D0		high	[0,0001]		.0000		,		•	•	•	•	^
0x00D8	signed long	low	Actual value cos φ - L3	-10000	10000	x	Y	Х	x	Y	x	Y	×
0x00D0		high	[0,0001]	10000	10000	^	^	^	^	^	^	^	^
0x00D3	signed long	low	Actual value frequency	4000	7000	x	x	Х	X	X	X	X	x
0x00DB	orgined long	high	[0,01 Hz]				^	^	^	^	^	^	
0x00DC	signed long	low	Actual value Phi φ*∠(U-L1,U-L2)	0	360000	Х	Х	Х	Х	Х	Х	Х	Х
0x00DD		high	[0,001 °]										
0x00DE	signed long	low	Actual value Phi φ*∠(U-L1,U-L3)	0	360000	х	х	Х	х	х	х	х	Х
0x00DE		high	[0,001 °]	0	000000		^	^	^	^	^	^	
0x00E0	signed long	low	Actual value Phi φ*∠(U-L2,U-L3)	0	360000	x	Y	Х	x	Y	x	Y	×
0x00E0		high	[0,001 °]	0	000000	^	^	^	^	^	^	^	^
0x00E1	signed long	low	Actual value Phi φ*∠(I-L1, I-L2)	0	360000		v	х	v	v	v	v	
0x00E2	orgined forig	high	[0,001 °]	0	300000	^	^	^	^	^	^	^	^
0x00E3	signed long	low	Actual value Phi φ*∠(I-L1, I-L3)	0	360000	~	~	Х		~		~	
0x00E4	orgined forig	high	[0,001 °]	0	300000	^	^	^	^	^	^	^	^
0x00E5	signed long	low	Actual value Phi φ*∠(I-L2, I-L3)	0	360000	~		Х					х
0x00E0	orgined long	high	[0,001 °]	0	300000	^	^	^	^	^	^	^	^
0x00E7	signed int	mgn	Status measured value I - L1	0 = measured	l value ok	~	~	Х					
	signed int		Status measured value I - L2	1 = measuring									X
0x00E9	signed int		Status measured value I - L3	exceeded		X	X	X	X	X	X	X	X
0x00EA	signed int		Status measured value U - L1	2= measuring	range below			X					X
0x00EB	signed int		Status measured value U - L2	3= simulation		X	X	X	X	X		X	
0x00EC	signed int		Status measured value U - L3	-		X	X	X	X	X		X	
0x00ED						Х	Х	Х	Х	Х	Х	Х	Х
0x00EE	signed int		Status measured value P - L1	-		Х	Х	Х	Х	Х	Х	Х	Х
0x00EF	signed int		Status measured value P - L2	-		Х	Х	Х	Х	Х	Х		Х
0x00F0	signed int		Status measured value P - L3	1		Х	Х	Х	Х	Х		Х	Х
0x00F1	signed int	,	Status measured value P-L123			Х	Х		Χ				Х
0x00F2	signed long	low	On time K1 [min.]	0	2147483647	Х	Х	Х	Х	Х	Х	Х	Х
0x00F3		high											
0x00F4	signed long	low	On time K2 [min.]	0	2147483647	Х	Х	Х	Х	Х	Х	Х	Х
0x00F5		high											
0x00F6	signed long	low	On time K3 [min.]	0	2147483647	Х	Х	Х	Х	Х	Х	Х	Х
0x00F7		high											
0x00F8	signed int		Current error (error)	0 = currently r 1 = error	no error	Х	Х	Х	Х	Х	Х	Х	Х
0x00F9	signed int		Error memory (limit error)	0	99	Х	Х	Х	Х	Х	Х	Х	Х
0x00FA	signed int		Error memory (load difference)	0	99	х	Х	Х	Х	Х	Х	Х	Х
0x00FB	signed int		Error memory (AD converter)			Х	Х	Х	Х	Х			Х
			,	0	99								
0x00FC	signed int		Error memory (adjustment values)	0	99	Х	Х	Х	Х	X	Х	X	Х
0x00FD	signed int		Error memory (parameter over	0	00	Х	Х	Х	Х	Х	Х	Х	Х
			range)	0	99								
	·	·		· 	·								_

^{*}All angles are counterclockwise.



Decount Deco	Adr.	Data type		Register	Range of val			Р	rog	N	lr.			
September Sept	hex				Min.	Max.	1	2	3	4	5	6	7	8
	0x00FE	signed int			0	99	х	Х	Х	Х	Х	Х	Х	Х
	0x00FF	signed int			0	99	х	Х	Х	Х	Х	Х	Х	х
0x0102 signed int Relay status K1	0x0100	signed int			0	99	X	Х	Х	X	Х	Х	Х	х
Section Sect		signed int		• ,	0	99	Х	Х	Χ	Х	Χ	Х	Χ	Χ
Decoration Signed int Relay status K3	0x0102	signed int		Relay status K1	0 (off)	1 (on)	Х	Χ	Χ	Χ	Χ	Х	Χ	Χ
Mary	0x0103	signed int		Relay status K2	0 (off)	1 (on)	Х	Χ	Χ	Х	Х	Х	Х	Χ
Decided Signed int Alarm status 1 (K2 / step 2) 1 = delay time on 2 = alarm on 3 = alarm	0x0104	signed int		Relay status K3	0 (off)	1 (on)	Х	Х	Х	Х	Х	Х	Х	Х
Signed int Alarm status 2 (153" / statp 3) Signed int Alarm status 2 (153" / statp 3) Signed int Alarm status 3 (step 4) Alarm status 3 (step 6)	0x0105	signed int		Alarm status 0 (K1 / step 1)			Х	Х	Х	Х	Х	Х	Х	Х
	0x0106	signed int		Alarm status 1 (K2 / step 2)			Х	Х	Х	Х	Х	Х	Х	Х
Description Signed int Alarm status 3 (step 4) Alarm status 4 (step 5) Alarm status 4 (step 5) Alarm status 5 (step 6) Alarm status 6 (step 7) Alarm status 6	0x0107	signed int		Alarm status 2 (K3* / step 3)			Х	Х	Х	Х	Х	Х	Х	Х
0x0108 signed int	0x0108	signed int		Alarm status 3 (step 4)					Х					
No.010A Signed int Alarm status 5 (step 6) Co.010B Signed int Alarm status 6 (step 7) Co.010B Signed long Jow Device status Co.010B Signed long Jow Device statu	0x0109	signed int		Alarm status 4 (step 5)										
No.010E Signed long Jow Device status Don't for internal service Signed long Jow Device status Don't for internal service Purposes Signed long Jow Device status Don't for internal service Signed long Jow Device status Don't for internal service Signed long Jow Device status Don't for internal service Signed long Jow Device status Don't for internal service Signed long Jow Device status Don't for internal service Signed long Jow Device status Don't for internal service Signed long Jow Device status Don't for internal service Signed long Jow Don't for internal service Signed long Signed long Jow Don't for internal service Signed long Signed long Jow Don't for internal service Signed long Signed long Jow Don't for internal service Signed long Signed long Signed long Signed long Signed long Jow Min. value U - L1 [0,1 V] Signed long Jow Don't for internal service Signed long Signed long Jow Don't for internal service Signed long Signed long Jow Min. value U - L1 [0,1 V] Signed long Jow Don't for internal service Signed long Jow Min. value U - L1 [0,1 V] Signed long Jow Min. value U - L2 [0,1 V] Signed long Jow Min. value U - L2 [0,1 V] Signed long Jow Min. value U - L3 [0,1 V] Signed long Jow Min. value U - L3 [0,1 V] Signed long Jow Min. value U - L3 [0,1 V] Signed long Jow Min. value U - L3 [0,1 V] Signed long Jow Min. value U - L2 [0,1 V] Signed long Jow Min. value U - L2 [0,1 V] Signed long Jow Min. value U - L3 [0,1 V] Signed long Jow Min. value U - L3 [0,1 V] Signed long Jow Min. value U - L3 [0,1 V] Signed long Jow Min. value U - L3 [0,1 V] Signed long Jow Min. value U - L3 [0,1 V] Signed long Jow Min. value U - L3 [0,1 V] Signed long Jow Min. value U - L3 [0,1 V] Signed long Jow Min. value U - L3 [0,1 V] Signed long Jow Min. value U - L3 [0,1 V] Signed lo	0x010A			Alarm status 5 (step 6)										
Description Signed long Iow high Device status Devic				, , ,										
Description		~	low	, , ,	Only for internal se	rvice	~	v			· ·	· ·	v	
Discrimination Disc		orgined forig		Dovido statas	-	11100	^	^	^	^	^	^	^	^
0x010F Inigh Operating hours hours [h] x x x x x x x x x x x x x x x x x x x		signed long		Serial number			v	· ·	· ·	V	· ·	· ·	· ·	· ·
December 10		signed long		Serial Humber			Х	Х	Х	Х	Х	Х	Х	Х
0x0111 high 0x0112 Firmware version, Application 0x0113 e.g. 0x0B01 (hex) 1 -> 12720-1411-01 (Dec) x x x x x x x x x x x x x x x x x x x		signed long		Operating hours	houre [h]									
December 10 December 10 December 11 December 12 December 12 December 12 December 13 December 14		signed long		Operating hours	nours [n]		Х	Х	Х	Х	Х	Х	Х	Х
Signed long			nign		0.0004	/I \								
Min. value U - L1 [0,1 V]										Х	Х	Х	Х	Х
0x0115 high Nox116 signed long Now high Max. value U - L1 [0,1 V] 1 3300 x x x x x x x x x x x x x x x x x x x						. ,	Х	Х	Х	Х	Х	Χ	Х	Χ
Name		signed long		Min. value U - L1 [0,1 V]	1	3300	Х	Χ	Χ	Χ	Χ	Χ	Χ	Х
0x0117 high (x) Min. value U - L2 [0,1 V] 1 3300 x x x x x x x x x x x x x x x x x x x x														
0x0118 ox0118 ox0119 signed long high high Min. value U - L2 [0,1 V] 1 3300 x x x x x x x x x x x x x x x x x x x		signed long		Max. value U - L1 [0,1 V]	1	3300	Х	Χ	Χ	Χ	Χ	Χ	Χ	Х
0x0119 high Max. value U - L2 [0,1 V] 1 3300 x x x x x x x x x x x x x x x x x x x														
0x011A (x) signed long (x) low (x) Max. value U - L2 [0,1 V] 1 3300 x x x x x x x x x x x x x x x x x x x		signed long		Min. value U - L2 [0,1 V]	1	3300	Х	Χ	Χ	Χ	Χ	Χ	Χ	Х
0x011B high Nover the problem of the pr			high											
0x011C 0x011D signed long high low high Min. value U - L3 [0,1 V] 1 3300 x x x x x x x x x x x x x x x x x x x		signed long		Max. value U - L2 [0,1 V]	1	3300	Х	Χ	Χ	Χ	Χ	Χ	Χ	Х
0x011D high Max. value U - L3 [0,1 V] 1 3300 x x x x x x x x x x x x x x x x x x x			high											
0x011E 0x011F 0x011F signed long high high high low high high high Max. value U - L3 [0,1 V] 1 3300 x x x x x x x x x x x x x x x x x x x		signed long	low	Min. value U - L3 [0,1 V]	1	3300	Х	Χ	Χ	Χ	Χ	Χ	Χ	Х
0x011F high Min. value I - L1 [mA] 1 1200000 x x x x x x x x x x x x x x x x x x x	0x011D		high											
0x0120	0x011E	signed long	low	Max. value U - L3 [0,1 V]	1	3300	х	Х	Χ	Х	Х	Х	Х	Х
0x0121 high Max. value I - L1 [mA] 1 1200000 x x x x x x x x x x x x x x x x x x x	0x011F		high											
0x0122 ox0123 signed long high low high Max. value I - L1 [mA] 1 1200000 x x x x x x x x x x x x x x x x x x x	0x0120	signed long	low	Min. value I - L1 [mA]	1	1200000	Х	Х	Х	Х	Х	Х	Х	Х
0x0123 high Min. value I - L2 [mA] 1 1200000 x x x x x x x x x x x x x x x x x x x	0x0121		high											
0x0124 0x0125 signed long high Min. value I - L2 [mA] 1 1200000 x x x x x x x x x x x x x x x x x x x	0x0122	signed long	low	Max. value I - L1 [mA]	1	1200000	Х	Х	Х	Х	Х	Х	Х	Х
0x0125 high 1 1200000 x	0x0123		high											
0x0126 ox0127 signed long high Iow high Max. value I - L2 [mA] 1 1200000 x x x x x x x x x x x x x x x x x x x	0x0124	signed long	low	Min. value I - L2 [mA]	1	1200000	Х	Х	Х	Х	Х	Х	Х	Х
0x0127 high Image: Normal of the property of the prop	0x0125		high											
0x0127 high Indeptition Indep	0x0126	signed long	low	Max. value I - L2 [mA]	1	1200000	Х	Х	Х	Х	Х	Х	Х	Х
0x0129 high Image: Control of the properties	0x0127		high											
0x0129 high Image: Control of the properties	0x0128	signed long	low	Min. value I - L3 [mA]	1	1200000	Х	Х	Х	Х	Х	Х	Х	Х
0x012A ox012B signed long high low high Max. value I - L3 [mA] 1 1200000 x x x x x x x x x x x x x x x x x x x	0x0129		high											
0x012B high Image: Control of the property of the pro		signed lona		Max. value I - L3 [mA]	1	1200000	х	X	x	x	x	X	x	х
0x012C 0x012D signed long high I/Ow high Min. value P - L1 [W] -350000 350000 x x x x x x x x x x x x x x x x x						55566	^	,,	^	^	^		^.	^
0x012D high -350000 350000 x x x x x x x x x x x x x x x x x		signed long		Min. value P - L1 [W]	-350000	350000	Y	Y	Y	Y	Y	Y	Y	Y
0x012E 0x012F signed long high low high Max. value P - L1 [W] -350000 350000 x x x x x x x x x x x x x x x x x		3.3			333333	550000	^	^	^	^	^	^	^	^
0x012F high -350000 350000 x x x x x x x x x x x x x x x x x		signed long		Max_value P - I 1 [W]	-350000	350000	~	~	~	v	~	~	~	
0x0130 signed long low high Min. value P - L2 [W] -350000 350000 x x x x x x x x x x x x x x x x x		Signica long		Max. value i - El [vv]	-330000	330000	^	X	X	X	X	X	X	۸
0x0131		signed long		Min value P - L2 [\M]	350000	250000	.,	• • •		.,		• • •		.,
6,6161		Signisu long		Willia Value - LZ [VV]	-330000	JOUUUU	Х	Х	Х	Х	Х	Х	Х	Х
		oo of programs	0	the relay V2 recets in the re-	tono ou cocció de la	ooordin = t		חר	۸ D	NI 4	110			

^{*} In the case of programs 7 and 8, the relay **K3** reacts in three steps successively according to VDE-AR-N 4105.



Adr.	Data type		Register	Range o	f values			Р	roc	jN	r.		
hex	., p -		3.000	Min.	Max.	1	2	3	4	5	6	7	8
0x0132	signed long	low	Max. value P - L2 [W]	-350000	350000			Х			_		Х
0x0132		high		000000	000000	^	^	^	^	^	^	^	^
0x0133	signed long	low	Min. value P - L3 [W]	-350000	350000	x	x	Х	Y	x	x	Y	Y
0x0135		high		000000	333333	^	^	^	^	^	^	^	^
0x0136	signed long	low	Max. value P - L3 [W]	-350000	350000	x	x	Х	Y	x	x	Y	Y
0x0130		high		000000	000000	^	^	^	^	^	^	^	^
0x0138	signed long	low	Min. value P - L123 [W]	-999999	999999	х	Х	Х	х	х	х	х	х
0x0139		high											
0x013A	signed long	low	Max. value P - L123 [W]	-999999	999999	х	Х	Х	Х	Х	Х	Х	Х
0x013B		high											
0x013C	signed long	low	Sum of connected loads via	0	150000	х	Х	Х	Х	Х	х	х	Х
0x013D		high	relay [W]		.00000			,,	,,		•	,,	
0x013E	unsigned long	low	Controlled load via analogue	0	50000	х	Х	Х	х	х	Х	х	х
0x013F		high	output I [W]		33333			,,	,,		•	,	
0x0140	unsigned long	low	Controlled load via analogue	0	50000	х	Х	Х	Х	Х	Х	Х	Х
0x0140		high	output U [W]										
0x0142	signed int		Digital input Y1	0	1	х	Х	Х	Х	Х	Х	Х	Х
0x0143	signed int		Digital input Y2	0	1	х	Х	Х	Х	Х	Х	Х	Х
0x0144	signed int		Digital input Y3	0	1	х	Х	Х	Х	Х	Х	Х	Х
0x0145	signed int		Digital input Y4	0	1	х	Х	Х	Х	Х		Х	Х
0x0146	signed int		Hardware Version	00		х	Х	Х	Х	Х	Х	Х	Х
0x0147	signed int		Status timer function K1	0=auto/off,		х	Х	Х					
0x0148	signed int		Status timer function K2	1=on for,		х	Х	Х					
0x0149	signed int		Status timer function K3	2=off for,		X	Х	Х					
0x014A	signed int		Status timer function Out I	3=manually on 4=manually off		х	Х	Х					
0x014/X	signed int		Status timer function Out U		ı	X	Х	X					
0x014C	unsigned long	low	Actual time of	0	86400		Х						
0x0140		high	Timer function K1 [s]	0	00.00	^	^	^					
0x014E	unsigned long	low	Actual time of	0	86400	х	Х	х					
0x014E		high	Timer function K2 [s]	0	00.00	^	^	^					
0x0150	unsigned long	low	Actual time of	0	86400	х	Х	Х					
0x0151		high	Timer function K3 [s]										
0x0151	unsigned long	low	Actual time of	0	86400	х	Х	Х					
0x0153		high	Timer function Out I [s]										
0x0154	unsigned long	low	Actual time of	0	86400	х	Х	Х					
0x0155		high	Timer function Out U [s]										
0x0156	signed long	low	Feed-in L1 [Wh]	-2147483648	0	х	Х	Х	Х	Х	Х	Х	Х
0x0157		high											
0x0158	signed long	low	Feed-in L2 [Wh]	-2147483648	0	х	Х	Х	Х	Х	Х	Х	Х
0x0159		high											
0x015A	signed long	low	Feed-in L3 [Wh]	-2147483648	0	х	Х	Х	Х	Х	Х	Х	Х
0x015B		high											
0x015C	signed long	low	Feed-in L123 [Wh]	-2147483648	0	х	Х	Х	Х	Х	Х	Х	Х
0x015D		high											
0x015E	signed long	low	Draw L1 [Wh]	0	2147483647	х	Х	Х	Х	Х	Х	Х	Х
0x015F		high											
0x0160	signed long	low	Draw L2 [Wh]	0	2147483647	х	Х	Х	Х	Х	х	Х	Х
0x0161		high											
0x0162	signed long	low	Draw L3 [Wh]	0	2147483647	х	Х	х	Х	Х	Х	Х	Х
0x0163		high											
0x0164	signed long	low	Draw L123 [Wh]	0	2147483647	х	Х	х	Х	Х	Х	Х	Х
0x0165		high					-	-	-	-	-	-	
5.10.00	1		l	1		l							



Adr.	Data type	Register	Range o	f values			Р	rog	N	r.		
hex			Min.	Max.	1	2	3	4	5	6	7	8
0x0166	signed long low	Draw – feed-in L123 [Wh]	-2147483648	2147483647	Х	Х	Χ	Х	Х	Х	Χ	Χ
0x0167	high											
0x0168	signed long low	Own consumption at K1 [kWh]	0	2147483647	Х	Х	Х	Х	Х	Х	Х	Х
0x0169	high											
0x016A	signed long low	Own consumption at K2 [kWh]	0	2147483647	Х	Х	Х	Х	Х	Х	Х	Х
0x016B	high											
0x016C	signed long low	Own consumption at K3 [kWh]	0	2147483647	Х	Х	Х	Х	Х	Х	Х	Х
0x016D	high											
0x016E	signed long low	Own consumption	0	2147483647	Х	Х	Х	Х	Х	Х	Х	Х
0x016F	high	at Out I [kWh]										
0x0170	signed long low	Own consumption	0	2147483647	Х	Х	Х	Х	Х	Х	Х	Х
0x0171	high	at Out U [kWh]										
0x0172	signed long low	Own consumption	0	2147483647	Х	Х	Х	Х	Х	Х	Х	Х
0x0173	high	at K123 + Out I + U [kWh]										



6.2 Reading measured values, status values and min. / max. (state: EFR4000IP)

• Modbus function code 0x03 (Read Holding Registers)

Name	Adr.	Data type		Register	Range of values			Prog.						
DX00000				1109.010.	_		1	2		. J	_	_	7	8
0x0001		signed long	low	Actual value U - I 1 [0 1 V]						<u>т</u>				
0x0002		oignou long		7 totaar varao o 21 [o,1 v]	'	3300	^	^	^	^	^	^	^	^
0x0003		signed long		Actual value U - L2 [0.1 V]	1	3300								Х
0x0004 signed long low Actual value U - L3 [0,1 V] 1 3300 x x x x x x x x x x x x x x x x x x		oigned long		7 totaa: vaido o [o,: v]	'	3300	^	^	^	^	^	^	^	^
0x0005		signed long		Actual value II - I 3 [0 1 V]	1	3300		~						
0x0006 0x0007 0x006 0x0007 0x0008 0x0008 0x0008 0x0009 0x00009 0x000009 0x000009 0x000009 0x000009 0x000009 0x000009 0x0000009 0x0000009 0x0000000000		oiginou iong		7.10144. 74.140 0 20 [0,1 7]	'	3300	^	^	^	^	^	^	^	^
0x0007		signed long		Actual value I - I 1 [mA]	1	1200000								
DX0008		oiginou iong		, totaar valae : E: [iiii t]	'	1200000	^	^	^	^	^	^	^	^
0x0009		signed long		Actual value I - I 2 [mA]	1	1200000								
DX000A DX000B Dow Dow		oiginou iong		/ total value : 22 ['	1200000	^	^	^	^	^	^	^	^
0x000B 0x000C 0x000D high how high how high Actual value P - L1 [W] high -350000 350000 x x x x x x x x x x x x x x x x x		signed long		Actual value I - L3 [mA]	1	1200000	x	Y	Y	x	Y			Υ
DX000C		o.gou iog		7.101.00.01.00.1.00.1.00.1.00.1.00.1.00	'	1200000	^	^	^	^	^	^	^	^
0x000D		signed long		Actual value P - L1 [W]	-350000	350000	Y	Y	Y	Y				Y
DX000E Signed long Iow high Actual value P - L2 [W] -350000 350000 x x x x x x x x x x x x x x x x x		o.gou iog		7.1010.00.1010.1	000000	000000	^	^	^	^	^	^	^	^
0x000F		signed long		Actual value P - L2 [W]	-350000	350000	Y	Y	Y	Y	Y			Υ
Dx0010		oiginou iong		/ Lotadi valdo : [TV]	-550000	330000	^	^	^	^	^	^	^	^
0x0011		signed long		Actual value P - L3 [W]	-350000	350000	Y	Y	Y	Y	Y			Y
Dx0012 Signed long Iow high Actual value P - L123 [W] -999999 999999 x x x x x x x x x x x x x x		oignou long		/ Local value : Lo [vv]	-550000	330000	^	^	^	^	^	^	^	^
0x0013		signed long		Actual value P - I 123 [W]	-000000	000000	~	~			~			
DX0014 Signed long Now high Now Nov Now		oignou long		/totadi valdo i E120 [W]	-999999	333333	^	^	^	^	^	^	^	^
0x0015		signed long		Actual value frequency	4000	7000	x	x	X	X	x			Х
1 = measuring range 2 = measuring range		oigned long			1000	7000		^	^	^	^	^	^	^
1 = measuring range	0x0016	signed int		Status measured value I - L1	0 = measured	value ok	Х	Х	Х	Х	Х	Х	Х	Х
DX0018 signed int Status measured value I - L3 2 = measuring range below 3 = simulation	0x0017	signed int		Status measured value I - L2		range	Х	Х	Х	Х			Х	Х
0x0019 signed int Status measured value U - L1 3= simulation x x x x x x x x x x x x x x x x x x x	0x0018	signed int		Status measured value I - L3		ranga halaw	Х	Х	Х	Х			Х	Х
0x001A signed int Status measured value U - L2 0x001B signed int Status measured value U - L3 0x001C signed int Status measured value P - L1 0x001D signed int Status measured value P - L2 0x001E signed int Status measured value P - L3 0x001F signed int Status measured value P - L123 0x0020 signed long low on time K1 [min.] 0x0021 on time K1 [min.] 0 0x0022 signed long low on time K2 [min.] 0x0023 signed long low on time K3 [min.] 0x0024 signed long low on time K3 [min.] 0x0025 signed int Current error (error) 0x0026 signed int Current error (error) 0x0027 signed int Error memory (limit error) 0 0x0028 signed int Error memory (limit error) 0	0x0019	-		Status measured value U - L1		range below							Х	Х
0x001B signed int Status measured value U - L3 0x001C signed int Status measured value P - L1 0x001D signed int Status measured value P - L2 0x001E signed int Status measured value P - L3 0x001F signed int Status measured value P - L123 0x0020 signed long low high On time K1 [min.] 0x0021 low high On time K2 [min.] 0x0022 signed long low high On time K2 [min.] 0x0023 signed long high 0x0024 signed long high On time K3 [min.] 0x0025 signed int Current error (error) 0x0026 signed int Current error (error) 0x0027 signed int Error memory (limit error) 0 0x0027 signed int Error memory (limit error) 0	0x001A	signed int		Status measured value U - L2	je – omradaon								Х	Х
0x001C signed int Status measured value P - L1 0x001D signed int Status measured value P - L2 0x001E signed int Status measured value P - L3 0x001F signed int Status measured value P - L3 0x0020 signed long low high On time K1 [min.] 0 2147483647 x x x x x x x x x x x x x x x x x x x	0x001B	signed int		Status measured value U - L3	-								Х	Х
0x001D signed int Status measured value P - L2 0x001E signed int Status measured value P - L3 0x001F signed int Status measured value P - L123 0x0020 signed long low ox0021 On time K1 [min.] 0x0022 signed long low ox0023 On time K2 [min.] 0x0024 signed long low ox0025 On time K3 [min.] 0x0025 signed int Current error (error) 0x0026 signed int Current error (error) 0x0027 signed int Error memory (limit error) 0x0028 signed int Error memory (limit error) 0x0029 signed int Error memory (limit error)	0x001C	signed int		Status measured value P - L1	-									Х
0x001E signed int Status measured value P - L3 x x x x x x x x x x x x x x x x x x x	0x001D			Status measured value P - L2	-									Х
0x001F signed int Status measured value P - L123 x x x x x x x x x x x x x x x x x x x	0x001E	ŭ		Status measured value P - L3	-		_							
0x0020 signed long 0x0021 low high On time K1 [min.] 0 2147483647 x x x x x x x x x x x x x x x x x x x				Status measured value P -	-									
0x0021 high 0x0022 signed long 0x0023 low high On time K2 [min.] 0 2147483647 x x x x x x x x x x x x x x x x x x x	0×0020	eignod long	low		0	21.47.4026.47								
0x0022 signed long		signed long		On time K1 [mm.]	0	214/48304/	Х	Х	Х	Х	Х	Х	Х	Х
0x0023 high 0		signed long		On time K2 [min]	0	21.47.4026.47								
0x0024 signed long 0x0025 low high On time K3 [min.] 0 2147483647 x x x x x x x x x x x x x x x x x x x		Signed long			0	2147403047	^	X	X	X	Х	Χ	X	X
0x0025 high 0x0026 signed int Current error (error) 0 = currently no error 1 = error 0x0027 signed int Error memory (limit error) 0 99 x x x x x x x x		signed long		On time K3 [min]	0	21.47.4026.47								
0x0026 signed int Current error (error) 0 = currently no error 1 = error 0x0027 signed int Error memory (limit error) 0 99 x x x x x x x		Signed long		On time No [min.]	0	214/40304/	Х	Х	Х	Х	Х	Х	Х	Х
0x0027 signed int Error memory (limit error) 0 99 x x x x x x x		signed int	riigii	Current error (error)	0 - currently no	n error								
0x0027 signed int	JX0020	Signed int		Current error (error)		J enoi	Х	Χ	Χ	Χ	Χ	Χ	Χ	Χ
0.000	0x0027	signed int		Error memory (limit error)		99	Х	Х	Х	Х	Х	Х	Х	Х
	0x0028	signed int		Error memory (load difference)		99	Х	Х	Х	Х	Х	Х	Х	Х
0x0029 signed int	0x0029	signed int		Error memory (AD converter)		99								
0x002A signed int	0x002A	signed int				99								
values) 0x002B signed int Error memory (parameter over 0 99 x x x x x x	0x002B	signed int												
range) Ov002C signed int From moment (scaling	0x002C	signed int					_	^	^	^	^			
analogue output) 0 99 X X X X X X				analogue output)	0	99	Х	Х	Х	Х	Х	Х	X	Х
0x002D signed int Error memory (check current transformer) 0 99 x x x x x x x	0x002D	signed int			0	99	х	х	х	Х	х	х	х	х

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Decided Deci
load values 0 99 x x x x x x x x x x x x x x x x
0x0030 signed int Relay status K1 0 (off) 1 (on) x x x x x x x x x x x x x x x x x x x
0x0031 signed int Relay status K2 0 (off) 1 (on) x x x x x x x x x x x x x x x x x x x
0x0032 signed int Relay status K3 0 (off) 1 (on) x x x x x x x x x x x x x x x x x x x
0x0033 signed int Alarm status 0 (K1 / step 1) 0 = alarm off x x x x x x x x x x x x x x x x x x x
0x0034 signed int Alarm status 1 (K2 / step 2) 1 = delay time on 2 = alarm on 3 = alarm delay 4 = alarm locked 0x0035 signed int Alarm status 2 (K3* / step 3) 3 = alarm delay 4 = alarm locked 0x0037 signed int Alarm status 4 (step 5) 0x0038 signed int Alarm status 5 (step 6) 0x0039 signed long low 0x003B low Device status 0x003C signed long low 0x003D signed long low 0x003F low Operating hours 0x003F high
0x0035 signed int Alarm status 2 (K3* / step 3) 2 = alarm on 3 = alarm delay 4 = alarm locked 0x0036 signed int Alarm status 3 (step 4) 4 = alarm locked 0x0037 signed int Alarm status 4 (step 5) x 0x0038 signed int Alarm status 5 (step 6) x 0x0039 signed long low Device status Only for internal service purposes 0x003B high 0x003C signed long low Serial number 0x003E signed long low Operating hours hours [h] 0x003F high
0x0035 signed int Alarm status 2 (k3*/ step 3) 3 = alarm delay x x x x x x x x x x x x x x x x x x x
0x0036 signed int Alarm status 3 (step 4) 4 = alarm locked 0x0037 signed int Alarm status 4 (step 5) 0x0038 signed int Alarm status 5 (step 6) 0x0039 signed int Alarm status 6 (step 7) 0x003A signed long high low high 0x003B low high 0x003C signed long high 0x003D low high 0x003E signed long high Alarm status 6 (step 7) Only for internal service purposes 0x0 in the real service purposes x x x x x x x x x x x x x x x x x x x
0x0037 signed int Alarm status 4 (step 5) 0x0038 signed int Alarm status 5 (step 6) 0x0039 signed int Alarm status 6 (step 7) 0x003A signed long low high Device status 0x003B low high 0x003C signed long low high 0x003B signed long low high 0x003B low high 0x003B low high A larm status 4 (step 5) A larm status 5 (step 6) A larm status 6 (step 7) A larm status 6 (s
0x0039 signed int Alarm status 6 (step 7) 0x003A signed long 0x003B Device status Only for internal service purposes 0x003C signed long 0x003D Iow high low high 0x003E signed long 1ow high 0x003F Serial number 0x0x0xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
0x003A ox003B signed long high low high Device status Only for internal service purposes x x x x x x x x x x x x x x x x x x x
0x003B high purposes 0x003C signed long 0x003D low high 0x003E signed long 0x003F low high 0x003F high 0x003F high Operating hours hours [h] x x x x x x x x x x x x x x x x x x x
0x003C 0x003D signed long high 0x003B signed long 0x003E 0x003F low high long high Serial number A x x x x x x x x x x x x x x x x x x
0x003D
0x003E signed long low operating hours hours [h] x x x x x x x x x x x x x x x x x x x
0x003F high
0.0000 1: 1: 4
0.0040 signadist
0x0040 signed int Firmware version, Application e. g. 0x0B01 (hex) x x x x x x x
0x0041 signed int Firmware version, Bootloader -> 12720-1411-01 (Dec) x x x x x x x
0x0042 signed long /ow Min. value U - L1 [0,1 V] 1 3300 x x x x x x x x
0x0043
0x0044 signed long low Max. value U - L1 [0,1 V] 1 3300 x x x x x x x
0x0045
0x0046 signed long /ow Min. value U - L2 [0,1 V] 1 3300 x x x x x x x x
0x0047
0x0048 signed long low Max. value U - L2 [0,1 V] 1 3300 x x x x x x x
0x0049
0x004A signed long low Min. value U - L3 [0,1 V] 1 3300 x x x x x x x
0x004B high
0x004C signed long low Max. value U - L3 [0,1 V] 1 3300 x x x x x x x x x
0x004D high
0x004E signed long /ow Min. value I - L1 [mA] 1 1200000 x x x x x x x x
0x004F high
0x0050 signed long low Max. value I - L1 [mA] 1 12000000 x x x x x x x x
0x0051
0x0052 signed long low Min. value I - L2 [mA] 1 12000000 x x x x x x x x x
0x0053
0x0054 signed long low Max. value I - L2 [mA] 1 1200000s x x x x x x x x x
0x0055
0x0056 signed long low Min. value I - L3 [mA] 1 1200000 x x x x x x x x x x x x x x x x
0x0057
0x0058 signed long low Max. value I - L3 [mA] 1 12000000 x x x x x x x x x
0x0059
0x005A signed long low Min. value P - L1 [W] -350000 350000 x
0x005B high
0x005C signed long /ow Max. value P - L1 [W] -350000 350000 x x x x x x x x
0x005D high
0x005E signed long low Min. value P - L2 [W] -350000 350000 x x x x x x
0x005F high

 $^{^{\}star}$ In the case of programs 7 and 8, the relay K3 reacts in three steps successively according to VDE-AR-N 4105.



Adr.	Data type		Register	Range o	f values			Р	rog	jN	r.		
hex				Min.	Max.	1	2	3	4	5	6	7	8
0x0060	signed long	low	Max. value P - L2 [W]	-350000	350000	Х	Х	Х	Х	Х	Х	Х	Х
0x0061		high											
0x0062	signed long	low	Min. value P - L3 [W]	-350000	350000	Х	Х	Х	Х	Х	Х	Х	Х
0x0063		high											
0x0064	signed long	low	Max. value P - L3 [W]	-350000	350000	Х	Х	Х	Х	Х	Х	Х	Х
0x0065		high											
0x0066	signed long	low	Min. value P - L123 [W]	-999999	999999	Х	Х	Х	Х	Х	Х	Х	Х
0x0067		high											
0x0068	signed long	low	Max. value P - L123 [W]	-999999	999999	Х	Х	Х	Х	Х	Х	Х	Х
0x0069		high											
0x006A	signed long	low	Sum of connected loads via	0	150000	Х	Х	Х	Х	Х	Х	Х	Х
0x006B		high	relay [W]										
0x006C	unsigned long	low	Controlled load via analogue	0	50000	Х	Х	Х	Х	Х	Х	Х	Х
0x006D		high	output I [W]										
0x006E	unsigned long	low	Controlled load via analogue	0	50000	Х	Х	Х	Х	Х	Х	Х	Х
0x006F		high	output U [W]										
0x0070	signed int		Digital input Y1	0	1	Х	Х	Χ	Х	Χ	Х	Х	Χ
0x0071	signed int		Digital input Y2	0	1	Х	Х	Х	Х	Х	Х	Х	Х
0x0072	signed int		Digital input Y3	0	1	Х	Х	Х	Х	Х	Х	Х	Х
0x0073	signed int		Digital input Y4	0	1	Х	Х	Х	Х	Х	Х	Х	Х
0x0074	signed int		Hardware Version	00		Х	Х	Х	Х	Х	Х	Х	Х
0x0075	signed int		Status timer function K1	0=auto/off,		Х	Х	Х					
0x0076	signed int		Status timer function K2	1=on for,		Х	Х	Х					
0x0077	signed int		Status timer function K3	2=off for,		Х	Х	Х					
0x0078	signed int		Status timer function Out I	_ 3=manually on _ 4=manually off		х	Х	Х					
0x0079	signed int		Status timer function Out U			х	Х	Х					
0x007A	unsigned long	low	Actual time of	0	86400	Х		Х					
0x007B		high	Timer function K1 [s]		30.00	,	•						
0x007C	unsigned long	low	Actual time of	0	86400	х	Х	Х					
0x007D		high	Timer function K2 [s]		30.00	,	•						
0x007E	unsigned long	low	Actual time of	0	86400	х	Х	х					
0x007F		high	Timer function K3 [s]		30.00	,	•						
0x0080	unsigned long	low	Actual time of	0	86400	х	Х	Х					
0x0081		high	Timer function Out I [s]		30.00	^	^	^					
0x0082	unsigned long	low	Actual time of	0	86400	x	Х	x					
0x0083		high	Timer function Out U [s]		33.33	,	•						
0x0084	signed long	low	Feed-in L1 [Wh]	-2147483648	0	х	х	Х	х	х	Х	х	х
0x0085		high				,	•		,,		•	,	
0x0086	signed long	low	Feed-in L2 [Wh]	-2147483648	0	х	Х	Х	Х	Х	Х	Х	Х
0x0087		high											
0x0088	signed long	low	Feed-in L3 [Wh]	-2147483648	0	х	Х	Х	Х	Х	Х	Х	Х
0x0089		high											
0x008A	signed long	low	Feed-in L123 [Wh]	-2147483648	0	х	Х	Х	х	Х	Х	х	х
0x008B		high				,	•		,,		•	,	
0x008C	signed long	low	Draw L1 [Wh]	0	2147483647	х	Х	Х	Х	Х	х	х	Х
0x008D		high						- •				- •	
0x008E	signed long	low	Draw L2 [Wh]	0	2147483647	Х	х	Х	х	х	х	Х	х
0x008F		high										- •	
0x0090	signed long	low	Draw L3 [Wh]	0	2147483647	х	Х	Х	х	Х	х	х	Х
0x0091		high				``							
0x0092	signed long	low	Draw L123 [Wh]	0	2147483647	Х	X	Х	x	x	x	X	x
0x0093	3 2 2 2 2 2 2 3	high			21000-1	^	^	^	^	^	^	^	^
	<u> </u>	3,,											



Adr.	Data type		Register	Range of values			Range of values Pro						ıN		
hex				Min.	Max.	1	2	3	4	5	6	7	8		
0x0094	signed long	low	Draw – feed-in L123 [Wh]	-2147483648	2147483647	Х	Х	Х	Х	Х	Х	Х	Χ		
0x0095		high													
0x0096	signed long	low	Own consumption at K1 [kWh]	0	2147483647	Х	Х	Х	Х	Х	Х	Х	Х		
0x0097		high													
0x0098	signed long	low	Own consumption at K2 [kWh]	0	2147483647	х	Х	Х	Х	Х	Х	Х	Х		
0x0099		high													
0x009A	signed long	low	Own consumption at K3 [kWh]	0	2147483647	Х	Х	Х	Х	Х	Х	Х	Х		
0x009B		high													
0x009C	signed long	low	Own consumption	0	2147483647	х	Х	Х	Х	Х	Х	Х	Х		
0x009D		high	at Out I [kWh]												
0x009E	signed long	low	Own consumption	0	2147483647	х	Х	Х	Х	Х	Х	Х	Х		
0x009F		high	at Out U [kWh]												
0x00A0	signed long	low	Own consumption	0	2147483647	х	Х	Х	Х	Х	Х	Х	Х		
0x00A1		high	at K123 + Out I + U [kWh]												

6.3 Parameter read and write

- Modbus function code 0x03 (Read Holding Registers)
 Modbus function code 0x10 (Write Multiple Registers)

Adr.	Data type		Register	Range o	of values	ProgNr.											
hex					4	2	3	4	5	678							
0x0200	signed int		Program number	1	Max.	1	X	X	X	X	X	X	X				
0x0200	signed int		Current transformer-Primary		8					X	<u>х</u>	<u>х</u>	X				
0.0201	Signed int		[A]	1	1000	Х	Х	Х	^	^	^	^	^				
0x0202	signed int		Current transformer -	1	50	х	Х	Х	Х	Х	Х	Х	Х				
			Secondary [0,1 A]														
0x0203	signed long	low	Power at K1 (step 10 W) [W]	0	500000	Х	Х	Х	Х								
0x0204		high															
0x0205	signed long	low	Power at K2 (step 10 W) [W]	0	500000	Х	Х	Х	Х								
0x0206		high															
0x0207	signed long	low	Power at K3 (step 10 W) [W]	0	500000	Х	Х	Х	Х								
0x0208		high															
0x0209	signed int		Phase on relay K1	-5=L123, -4=L -2=L1, -1=off	.3, -3=L2,	Х	Х		Х		Х						
0x020A	signed int		Phase on relay K2	-2=L1, -1=011		Х	Х	Х	Х		Х						
0x020B	signed int		Phase on relay K3			Х	Х	Х	Х		Х						
0x020C	signed int		Relay function K1	-2 = 11-12	-1 = 11-14	Х	Х	Χ	Х								
0x020D	signed int		Relay function K2	-2 = 21-22	-1 = 21-24	Х	Х	Х	Х								
0x020E	signed int		Relay function K3	-2 = 31-32	-1 = 31-34	Х	Х	Χ	Х								
0x020F	signed long	low	Delay on K1 [s]	0	86399	Х	Χ		Χ	Χ	Χ	Χ	Χ				
0x0210		high	Delay on [s]					Χ									
0x0211	signed long	low	Delay on K2 [s]	0	86399	х	Χ		Χ	Х	Χ	Χ	Χ				
0x0212		high															
0x0213	signed long	low	Delay on K3 [s]	0	86399	х	Χ		Χ	Χ	Χ	Χ	Χ				
0x0214		high															
0x0215	signed long	low	Min. on K1 [s]	10	86399	х	Χ		Χ								
0x0216		high	Min. on [s]	10	86399			Χ									
0x0217	signed long	low	Min. on K2 [s]	10	86399	х	Χ		Χ								
0x0218		high															
0x0219	signed long	low	Min. on K3 [s]	10	86399	Х	Х		Х								
0x021A		high															
0x021B	signed long	low	Delay off K1 [s]	10	86399	х	Χ		Χ								
0x021C		high	Delay off [s]	10	86399			Χ									
0004D	a: ava a al la a av	lavv	Delay off K1 [0,01s]	0	359999					Х	Х	Χ	Х				
0x021D	signed long	low	Delay off K2 [s]	10	86399	X	Χ		Х	.,	.,	.,	.,				
0x021E	a: a: a a a a a a a	high	Delay off K2 [0,01s]	0	359999					Х	Х	Х	Х				
0x021F	signed long	low	Delay off K3 [s]	10	86399	X	Χ		Х	.,	.,	.,	.,				
0x0220	sianod long	high	Delay off K3 [0,01s]	0	359999	.,			.,	Х	Х	Х	Х				
0x0221	signed long	low	Load regulation K1 [s]	10	86399	X	Χ		Х								
0x0222	signed leng	high	Lood regulation KO [a]	40	20000				.,								
0x0223	signed long	low	Load regulation K2 [s]	10	86399	X	Χ		Х								
0x0224	a: ava a al la a av	high		10													
0x0225	signed long	low	Load regulation K3 [s]	10	86399	X	Χ		Χ								
0x0226	-1	high	D														
0x0227	signed long	low	Power K1 on (step 10 W) [W]	-999990	999990	×	Χ	.,	Х	Х	Х	Х	Х				
0x0228		high	Switch off value (step 10 W) [W]	000000				Х									
0x0229	signed long	low	Power K2 on (step 10 W) [W]	-999990	999990	X	Х		Х	Х	Х	Х	Х				
0x022A	olema a di la cara	high	Dower I/O on fator 40 MAN DAG	000000													
0x022B	signed long	low	Power K3 on (step 10 W) [W]	-999990	999990	X	Χ		Х	Х	Х	Х	Х				
0x022C		high															

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Adr.	Data type		Register	Range of values				Р	rog	ıNı					
hex				Min.	Max.	1	2	3	4	5	6	7	8		
0x022D	signed long	low	Power K1 off (step 10 W) [W]	-999990	999990		Х					Х	Х		
0x022E		high	(3.3)		000000										
0x022F	signed long	low	Power K2 off (step 10 W) [W]	-999990	999990	Х	Х		Х	Х	Х	Х	Х		
0x0230		high	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		333333										
0x0231	signed long	low	Power K3 off (step 10 W) [W]	-999990	999990	Х	Х		Х	Х	Х				
0x0232		high	, , , , , , ,												
0x0233	signed int		Auto reset K1	-1 = on	-2 = off					Х	Х	Х	Х		
0x0234	signed int		Auto reset K2	-1 = on	-2 = off					Х	Х	Х	Х		
0x0235	signed int		Auto reset K3	-1 = on	-2 = off					Х	Х	Х	Х		
0x0236	signed int		Function input Y1	-13=Aout-U		Х	Х	Х	Х						
			·	-12=Aout-U											
0x0237	signed int		Function input Y2	-11=Aout-I 1		Х	Х	Х	Х						
				-10=Aout-I 0 -9=K3 off, -8	,										
0x0238	signed int		Function input Y3	-7=K1 off, -6		Х	Х	Х	Х						
				-5=K2 on, -4											
0x0239	signed int		Function input Y4	-3=K1-3 on,	-2=K1-3 off,	Х	Χ	Χ	Х						
				-1=off											
0x023A	signed int		Analog output I,	· ·	-8=load-L2,	х	Χ	Х	Х	Χ	Χ	Χ	Х		
			Function	-7=load-L1, -5=kW-L3,	-6=load-L123, -4=kW L2,										
				-3=kW-L1,	-2=kW-L123,										
				-1=off											
0x023B	signed int		Analog output I,	-3=Ind, -2=4	-20 mA,	Х	Χ	Χ	Χ	Х	Х	Χ	Х		
			0-20mA / 4-20 mA / Individually	-1=0-20 mA											
0x023C	signed int		Analog output I,		4000	Х	Х	Х	Х	Х	Х	Х	Х		
			individual zero point [0,01 mA]	0	1000										
0x023D	signed long	low	Analog output I,	-999990	999990	Х	Х	Χ	Х	Χ	Χ	Х	Х		
0x023E		high	Zero point (step 10 W) [W]												
0x023F	signed long	low	Analog output I,	-999990	999990	Х	Χ	Χ	Х	Χ	Χ	Χ	Х		
0x0240		high	Full scale (step 10 W) [W]												
0x0241	signed long	low	Analog output I,	-999990	999990	Х	Х	Х	Х	Х	Х	Х	Х		
0x0242		high	Setpoint (step 10 W) [W]												
0x0243	signed long	low	Analog output I,	0	500000	Х	Х	Х	Х	Х	Х	Х	Х		
0x0244		high	max. power (step 10 W) [W]												
0x0245	signed int		Analog output I, Regulation speed [%]	20	90	Х	Х	Х	Х	Х	Х	Х	Х		
0::0040	alama a dilat		,	_											
0x0246	signed int		Analog output I, Regulation interval [0,1 s]	5	600	X	Х	Х	Х	Х	Х	Х	Х		
0x0247	signed int		Analog output I,	5	F0	· ·	· ·	· ·	· ·	· ·	V				
0.0247	signed int		Regulation tolerance [%]	5	50	^	^	Χ	^	^	^				
0x0248	signed int		Analog output U,	-9=load-L3,	-8=load-L2,	_		Х					· ·		
0,0240	Signed int		Function	-7=load-L1,	-6=load-L123,	^	^	^	^	^	^	^	^		
				-5=kW-L3,	-4=kW L2,										
				-3=kW-L1,	-2=kW-L123,										
0x0249	signed int		Analog output U,	-1=off	-10 V, -1=0-10V	_		Х					· ·		
0,0240	Signed int		0-10V / 2-10V / Individually	0=ma, 2=2	10 V, 1=0 10 V	^	^	^	^	^	^	^	^		
0x024A	signed int		Analog output U,	0	500	Х	Х	Х	Х	Х	Х	Х	Х		
0::00.45	-1	1-	individual zero point [0,01 V]												
0x024B	signed long	low	Analog output U, Zero point (step 10 W) [W]	-999990	999990	Х	Х	Х	Х	Х	Х	Х	Х		
0x024C	oigned less	high	, , , , , = =	000000	00000	.,	.,	.,	• • •	.,	.,	.,	.,		
0x024D	signed long	low	Analog output U, Full scale (step 10 W) [W]	-999990	999990	X	Х	Х	Х	Х	Х	Х	Х		
0x024E	olem cellere	high	` ' /	000000	20000										
0x024F	signed long	low	Analog output U, Setpoint (step 10 W) [W]	-999990	999990	X	Х	Х	Х	Х	Х	Х	Х		
0x0250		high	Corbonic (steb 10 14) [14]												



Adr.	Data type	Register	Range of val	ues	ProgNr.							
hex			Min.	Max.	1	2	3	4	5	6	7	8
0x0251 0x0252	signed long low high	Analog output U, max. power (step 10 W) [W]	0	500000	Х	Х	Х	Х	х	Х	Х	х
0x0253	signed int	Analog output U, Regulation speed [%]	20	90	Х	Х	Х	Х	Х	Х	Х	х
0x0254	signed int	Analog output U, Regulation interval [0,1 s]	5	600	Х	Х	Х	Х	Х	Х	Х	х
0x0255	signed int	Analog output U, Regulation tolerance [%]	5	50	Х	Х	Х	Х	Х	Х	Х	Х
0x0256	signed int	Language	-2=English, -1=Ger	man	Х	Х	Х	Х	Х	Х	Х	Х
0x0257	signed int	TFT brightness [%]	20	100	Х	Х	Х	Х	Х	Х	Х	Х
0x0258	signed int	TFT, time to dim [s]	10	3600	Х	Х	Х	Х	Х	Х	Х	Х
0x0259	signed int	Display interval [0,1 s]	1	20	Х	Х	Х	Х	Х	Х	Х	Х
0x025A	signed int	Timer function K1	0=auto,		Х	Х	Х	Х				
0x025B	signed int	Timer function K2	1=on for,	Х	Х	Х	Х					
0x025C	signed int	Timer function K3	2=off for, 3=manually on,		Х	Х	Х	Х				
0x025D	signed int	Timer function Out I	4=manually off	Х	Х	Х	Х					
0x025E	signed int	Timer function Out U	1		Х	Х	Х	Х				
0x025F	signed int	Timer function K1, Time of "on for / off for" [min.]	1	1440	х	Х	Х	Х				
0x0260	signed int	Timer function K2, Time of "on for / off for" [min.]	1	1440	Х	Х	Х	Х				
0x0261	signed int	Timer function K3, Time of "on for / off for" [min.]	1	1440	X	Х	х	Х				
0x0262	signed int	Timer function I, Time of "on for / off for" [min.]	1	1440	Х	Х	х	х				
0x0263	signed int	Timer function U, Time of "on for / off for" [min.]	1	1440	Х	Х	Х	Х				
0x0264	signed int	Timer function, Load at Out I [%]	0	100	Х	х	Х	х				
0x0265	signed int	Timer function, Load at Out U [%]	0	100	x	Х	Х	Х				

6.4 Trigger reset function

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• Modbus function code 0x10 (Write Multiple Registers)

Adr.	Data type	Register	Value	ProgNr.							
hex				1	2	3	4	5	6	7	8
0x0100	signed int	Reset min/max U	write 1 -> reset all U	Х	Х	Х	Х	Х	Х	Х	Χ
0x0101	signed int	Reset min/max I	write 1 -> reset all I	Х	Х	Х	Х	Х	Х	Х	Χ
0x0102	signed int	Reset min/max P	write 1 -> reset all P	Х	Х	Х	Х	Х	Х	Х	Χ
0x0103	signed int	On time K1K3	write 1 -> reset all times	Х	Х	Х	Х	Х	Х	Х	Χ
0x0104	signed int	Error memory	write 1 -> reset all errors	Х	Х	Χ	Х	Х	Χ	Х	Χ
0x0105	signed int	Locked relays	write 1 -> reset locked relays					Х	Х	Х	Χ
0x0106	signed int	Reset energy meter	write 1 -> reset	Х	Х	Х	Х	Х	Х	Х	Χ

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