

MODBUS – Address table BR7000 – V1.6
Grid parameters, stage information (read only)

Address			Register name	Description / Range of values / Examples															
DEC	HEX	H/L																	
3000	0B B8	H	Software version	Divide by 10 to get software version. e.g: 10 = V1.0															
		L	Device type	70 = BR7000															
3001	0B B9	W	Power-Scaling-Factor (PSF)	Multiplier for values of address 3002 .. 3017 Valid values: 1, 10, 100, 1000															
3002	0B BA	W	L1	Reactive power Signed 16bit integer. Unit var E.g.: 1000 * PSF = 10000var (If PSF = 10) → Negative values: over compensated															
3003	0B BB	W	L2																
3004	0B BC	W	L3																
3005	0B BD	W	SUM																
3006	0B BE	W	L1	Active power Signed 16bit integer. Unit W E.g.: 1000 * PSF = 10000W (If PSF = 10) → Negative values: energy supply (4-quadrant-mode)															
3007	0B BF	W	L2																
3008	0B C0	W	L3																
3009	0B C1	W	SUM																
3010	0B C2	W	L1	Apparent power Unsigned 16bit integer. Unit VA E.g.: 1000 * PSF = 10000VA (If PSF = 10)															
3011	0B C3	W	L2																
3012	0B C4	W	L3																
3013	0B C5	W	SUM																
3014	0B C6	W	L1	Differential reactive power Signed 16bit integer. Unit var E.g.: 1000 * PSF = 10000var (If PSF = 10) → Negative values: over compensated															
3015	0B C7	W	L2																
3016	0B C8	W	L3																
3017	0B C9	W	SUM																
3018	0B CA	W	L1	Measuring voltage Unsigned 16bit integer. Unit V E.g.: 230 = 230V															
3019	0B CB	W	L2																
3020	0B CC	W	L3																
3021	0B CD	W	L1	Measuring current Unsigned 16bit integer. Unit A E.g.: 1000 = 1000A															
3022	0B CE	W	L2																
3023	0B CF	W	L3																
3024	0B D0	W	L1	Power factor cos-phi Signed 16bit integer - Unit 1. Examples: Valid range -999 .. 0 .. 1000															
3025	0B D1	W	L2		<table border="1"> <thead> <tr> <th colspan="2">Value</th> <th rowspan="2">Value of power factor / cos-phi</th> </tr> <tr> <th>Hex</th> <th>Decimal</th> </tr> </thead> <tbody> <tr> <td>0h0320</td> <td>800</td> <td>0.800 ind</td> </tr> <tr> <td>0h03E8</td> <td>1000</td> <td>1.000</td> </tr> <tr> <td>0hFCE0</td> <td>-800</td> <td>0.800 cap</td> </tr> </tbody> </table>	Value		Value of power factor / cos-phi	Hex	Decimal	0h0320	800	0.800 ind	0h03E8	1000	1.000	0hFCE0	-800	0.800 cap
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0hFCE0	-800	0.800 cap																	
3026	0B D2	W	L3																
3027	0B D3	W	SUM																
3028	0B D4	L	L1	Frequency Byte Unit Hz E.g.: 50 = 50Hz															
3029	0B D5	L	L2																
3030	0B D6	L	L3																

3031	0B D7	W		Temperature in °C	Signed 16bit integer - Unit °C. Examples: <table border="1"> <thead> <tr> <th>Hex value</th> <th>Temp.</th> <th>Hex value</th> <th>Temp.</th> </tr> </thead> <tbody> <tr> <td>0h0010</td> <td>10°C</td> <td>0hFFFF</td> <td>-1°C</td> </tr> <tr> <td>0h0001</td> <td>1°C</td> <td>0hFFF6</td> <td>-10°C</td> </tr> </tbody> </table>	Hex value	Temp.	Hex value	Temp.	0h0010	10°C	0hFFFF	-1°C	0h0001	1°C	0hFFF6	-10°C																																																			
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				<i>Bit</i>	<i>Description</i>
3042	0B E2	W		0,1	Setting 2nd cos phi: 0= Off, 1= Timer, 2= export energy
				2	Timer ON (timer is between ON and OFF time)
				3	Export energy flag L1
				4	Export energy flag L2
				5	Export energy flag L3
				6	Export energy flag SUM
				7	2nd parameter set active
				8	External input active
				9	Input status of external MMI (remote meas. mode)
3043	0B E3	H			Internal Clock - Minute
		L			Internal Clock - Second
3044	0B E4	H			Intern. Calendar - Day
		L			Internal Clock - Hour
3045	0B E5	H			Intern. Calendar - Year
		L			Intern. Calendar - Month
3046	0B E6	W			Last pressed key -1-
				<i>Value</i>	<i>Key</i>
				1234	AUTO
				2345	ENTER
				3456	HELP
				4567	ESC
3047	0B E7	L			Last pressed key -2-
				<i>Value</i>	<i>Key</i>
				Reg.Value +1	PLUS
				Reg.Value -1	MINUS
3048	0B E8	L			Test state
				<i>Bit</i>	<i>Taste</i>
				6	After manual-calibration
				7	After calibration at test stand
				Register value 0 = main-reset executed	
3049.. 3072	0B E7 0C 00				
3073.. 3087	0C 01 0C 0F	W	L1		Voltage
3088.. 3102	0C 10 0C 1E	W	L2		3 rd .. 31 st Harmonics
3103.. 3117	0C 1F 0C 2D	W	L3		
3118.. 3132	0C 2E 0C 3C	W	L1		Current
3133.. 3147	0C 3D 0C 4B	W	L2		3 rd .. 31 st Harmonics
3148.. 3162	0C 4C 0C 5A	W	L3		
3163 3164	0C 5B 0C 5C	W	L1 L2		THD-V
3165	0C 5D	W	L3		
3166 3167	0C 5E 0C 5F	W	L1 L2		THD-I
3168	0C 60	W	L3		

3169.. 3213	0C 61 0C 8D														
3214	0C 8E	L		Start-up picture	<table border="1"> <thead> <tr> <th>Value</th> <th>Name</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>EPC</td> </tr> <tr> <td>1</td> <td>EBE</td> </tr> <tr> <td>2</td> <td>MDL</td> </tr> <tr> <td>3</td> <td>ESK</td> </tr> </tbody> </table>	Value	Name	0	EPC	1	EBE	2	MDL	3	ESK
Value	Name														
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3215..	0C 93														
3226	0C 9A	WW	L1	Timestamp											
3228	0C 9C	WW	L2	Maximum											
3230	0C 9E	WW	L3	Voltage											
3232	0C A0	WW	L1	Timestamp											
3234	0C A2	WW	L2	Maximum											
3236	0C A4	WW	L3	Current											
3238	0C A6	WW	L1	Timestamp											
3240	0C A8	WW	L2	Maximum											
3242	0C AA	WW	L3	Reactive power											
3244	0C AC	WW	L1	Timestamp											
3246	0C AE	WW	L2	Maximum											
3248	0C B0	WW	L3	Active power											
3250	0C B2	WW	L1	Timestamp											
3252	0C B4	WW	L2	Maximum											
3254	0C B6	WW	L3	Apparent power											
3256	0C B8	WW	L1	Timestamp											
3258	0C BA	WW	L2	Maximum											
3260	0C BC	WW	L3	Frequency											
3262	0C BE	WW		Timestamp max. Temperature											
3264	0C C0	WW	L1	Timestamp											
3266	0C C2	WW	L2	Maximum											
3268	0C C4	WW	L3	Voltage THD											
3270	0C C6	WW	L1	Timestamp											
3272	0C C8	WW	L2	Maximum											
3274	0C CA	WW	L3	Current THD											
3276	0C CC	W	L1	Minimum Voltage	Unsigned 16bit integer. Unit V E.g.: 230 = 230V										
3277	0C CD	W	L2												
3278	0C CE	W	L3												
3279	0C CF	W	L1	Maximum Voltage	Unsigned 16bit integer. Unit V E.g.: 230 = 230V										
3280	0C D0	W	L2												
3281	0C D1	W	L3												
3282	0C D2	W	L1	Maximum Current	Unsigned 16bit integer. Unit A E.g.: 100 = 100V										
3283	0C D3	W	L2												
3284	0C D4	W	L3												

3285	0C	D5	W		Max. Power Scaling Factor (MPSF)	Multiplier for values of address 3286 .. 3297 Valid values: 1, 10, 100, 1000																																																																																	
3286	0C	D6	W	L1	Maximum Reactive power	Unsigned 16bit integer. Unit var E.g.: 1000 * MPSF = 10000var (If MPSF = 10)																																																																																	
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3300	0C	E4	W	L2																																																																																			
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Dec.				<i>Description</i>																																																																																			
0	0	0	Disconnected (fix)																																																																																				
1	0	1	AUTO																																																																																				
2	1	0	Connected (fix)																																																																																				
3	1	1	Error																																																																																				
Bit	15	14	13	12	11	10	9	8																																																																															
Phase	8 th stage		7 th stage		6 th stage		5 th stage																																																																																

3330	0D 02	W	Status of stage 9 .. 15	see Address 3329 for more information.																																				
				<table border="1"> <tr> <td>Bit</td> <td>7</td> <td>6</td> <td>5</td> <td>4</td> <td>3</td> <td>2</td> <td>1</td> <td>0</td> </tr> <tr> <td>Phase</td> <td colspan="2">12thstage</td> <td colspan="2">11thstage</td> <td colspan="2">10thstage</td> <td colspan="2">9th stage</td> </tr> </table> <table border="1"> <tr> <td>Bit</td> <td>15</td> <td>14</td> <td>13</td> <td>12</td> <td>11</td> <td>10</td> <td>9</td> <td>8</td> </tr> <tr> <td>Phase</td> <td colspan="2">-</td> <td colspan="2">15thstage</td> <td colspan="2">14thstage</td> <td colspan="2">13thstage</td> </tr> </table>	Bit	7	6	5	4	3	2	1	0	Phase	12 th stage		11 th stage		10 th stage		9 th stage		Bit	15	14	13	12	11	10	9	8	Phase	-		15 th stage		14 th stage		13 th stage	
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Phase	-		15 th stage		14 th stage		13 th stage																																	
3389.. 3403	0D 3D 0D 4B	W	Stage quantification L1 Stage 1 .. max.15	Unsigned 16bit integer. E.g.: 4 → 4 times power 1 st stage																																				
3404.. 3418	0D 4D 0D 5A	W	Stage quantification L2 Stage 1 .. max.15																																					
3419.. 3433	0D 5B 0D 69	W	Stage quantification L3 Stage 1 .. max.15																																					
3434.. 3448	0D 67 0D 78	W	Stage quantification SUM Stage 1 .. max.15																																					
3449.. 3463	0D 79 0D 87	W	Switching cycles L1, LOW Stage 1 ..15																																					
3464.. 3478	0D 88 0D 96	W	Switching cycles L2, LOW Stage 1 ..15	LOW + HIGH * 2 ¹⁶ = total switching cycle per stage Unsigned 32bit long.																																				
3479.. 3493	0D 97 0D A5	W	Switching cycles L3, LOW Stage 1 ..15	Unit 1 E.g.: Low = 34464, High= 1 → 100k * switching cycles																																				
3494.. 3508	0D A6 0D B4	W	Switching cyc. SUM, LOW Stage 1 ..15	LOW + HIGH * 2 ¹⁶ = total switching cycle per stage																																				
3509.. 3523	0D B5 0D C3	W	Switching cycles L1, HIGH Stage 1 ..15	Unsigned 32bit long. Unit 1																																				
3524.. 3538	0D C4 0D D2	W	Switching cycles L2, HIGH Stage 1 ..15	E.g.: Low = 34464, High= 1 → 100k * switching cycles																																				
3539.. 3553	0D D3 0D E1	W	Switching cycles L3, HIGH Stage 1 ..15																																					
3554.. 3568	0D E2 0D F0	W	Switching cyc. SUM, HIGH Stage 1 ..15																																					
3585.. 3599	0E 01 0E 0F	W	Operation time – L1, HIGH Stage 1 .. 15																																					
3600.. 3614	0E 01 0E 1E	W	Operation time – L2, HIGH Stage 1 .. 15																																					
3615.. 3629	0E 1F 0E 2D	W	Operation time – L3, HIGH Stage 1 .. 15																																					
3630.. 3644	0E 2E 0E 3C	W	Operation time SUM,HIGH Stage 1 .. 15	LOW + HIGH * 2 ¹⁶ = total operation time per stage Unsigned 32bit long.																																				
3645.. 3659	0E 3D 0E 4B	W	Operation time – L1, LOW Stage 1 .. 15	Unit min E.g.: Low = 34464, High= 1 → 100k * min																																				
3660.. 3674	0E 4C 0E 5A	W	Operation time – L2, LOW Stage 1 .. 15																																					
3675.. 3689	0E 5B 0E 69	W	Operation time – L3, LOW Stage 1 .. 15																																					
3690.. 3704	0E 6A 0E 78	W	Operation time SUM, LOW Stage 1 .. 15																																					
3705, 3706	0E 79 0E 7A	WW	Controller operation time	Unsigned 32bit long. Unit min E.g.: Low = 34464, High= 1 → 100k * min																																				
3707.. 3823	0E 7B 0E EF																																							
3824, 3825	0E F0 0E F1	WW	Slave: Target output power (Master-Slave)	Unsigned 32bit long. Unit kvar																																				
3826	0E F2	L	Slave: Slave outputs (Master-Slave)	See Address 3032 .. 3035 0 = Stage off / 1 = Stage on (connected)																																				

3827, 3828	0E F3 0E F4	WW	Slave: Differential reactive power (Master-Slave)	Unsigned 32bit long. Unit kvar
3829	0E F5	L	Status of coupling switch	Coupling switch: 0 = open / 1= closed

Energy values, new at devices with firmware version 1.14

[Function code 3 \(Register 6000\)](#)

Address			Register name	Info / Range of values
DEC	HEX	H/L		
6021	17 85	WW	+	Unsigned 32bit long. Unit kvarh Exp.: 100 = 100kvarh Unsigned 32bit long. Unit kWh Exp.: 100 = 100kWh
6023	17 87	WW	- Energy	
6025	17 89	WW	IND	
6027	17 8B	WW	CAP	
6029	17 8D	WW	+	Unsigned 32bit long. Unit vars Exp.: 100 = 100vars Unsigned 32bit long. Unit Ws Exp.: 100 = 100Ws
6031	17 8F	WW	- Rest Energy	
6033	17 91	WW	IND	
6035	17 93	WW	CAP	

Floating point values, new at devices with firmware version 1.14

[Function code 3 \(Register 8000\)](#)

Address			Register name	Info / Range of values
DEC	HEX	H/L		
8000	1F 40	WW	L1	32bit single Unit var
8002	1F 42	WW	L2 Reactive power (floating point)	
8004	1F 44	WW	L3	
8006	1F 46	WW	L1	32bit single Unit W
8008	1F 48	WW	L2 Active power (floating point)	
8010	1F 4A	WW	L3	
8012	1F 4C	WW	L1	32bit single Unit VA
8014	1F 4E	WW	L2 Apparent power (floating point)	
8016	1F 50	WW	L3	
8018	1F 52	WW	L1	32bit single Unit V
8020	1F 54	WW	L2 Voltage (floating point)	
8022	1F 56	WW	L3	
8024	1F 58	WW	L1	32bit single Unit A
8026	1F 5A	WW	L2 Current (floating point)	
8028	1F 5C	WW	L3	
8030	1F 5E	WW	L1	32bit single Unit 1 Range: 0... 1, positive values → ind, negative values → cap
8032	1F 60	WW	L2 Powerfactor Cos-phi (floating point)	
8034	1F 62	WW	L3	
8036	1F 64	WW	SUM Cos phi (float)	32bit single, Unit 1, Range: 0...1, pos. → ind, neg. → cap
8038	1F 66	WW	SUM Reactive pwr (float)	32bit single, Unit var
8040	1F 68	WW	SUM Active pwr (float)	32bit single, Unit W
8042	1F 6A	WW	SUM Apparent pwr (float)	32bit single, Unit VA

Controller settings (read / write)

Address		H/L	Register name	Description / Range of values / Examples																																																																																																																																																																																																																																												
Code R= 3	Code W= 6																																																																																																																																																																																																																																															
3173	101	H	Language	0= German, 1= English, 2= Spanish, 3= Turkish, 4= Russian ..																																																																																																																																																																																																																																												
		L	Measuring- / Controlling mode	<table border="1"> <thead> <tr> <th rowspan="2">Nr.</th> <th rowspan="2">Byte</th> <th colspan="3">Measuring / IN</th> <th colspan="3">Controlling / Endstop</th> <th rowspan="2">ext. MMI</th> </tr> <tr> <th>L1</th> <th>L2</th> <th>L3</th> <th>Sum</th> <th>L1</th> <th>L2</th> <th>L3</th> </tr> </thead> <tbody> <tr><td>1</td><td>0</td><td>x</td><td>x</td><td>x</td><td></td><td>5</td><td>5</td><td>5</td><td></td></tr> <tr><td>2</td><td>1</td><td>x</td><td>x</td><td>x</td><td>remain</td><td>4</td><td>4</td><td>4</td><td></td></tr> <tr><td>3</td><td>2</td><td>x</td><td>x</td><td>x</td><td></td><td>5</td><td>5</td><td>5</td><td></td></tr> <tr><td>4</td><td>3</td><td>x</td><td>x</td><td>x</td><td>15</td><td></td><td></td><td></td><td></td></tr> <tr><td>5</td><td>4</td><td>SUM</td><td></td><td></td><td>15</td><td></td><td></td><td></td><td></td></tr> <tr><td>6</td><td>5</td><td>SUM</td><td>l1</td><td>l2</td><td>15</td><td></td><td></td><td></td><td></td></tr> <tr><td>7</td><td>6</td><td>x</td><td>x</td><td>x</td><td>15</td><td></td><td></td><td></td><td>1</td></tr> <tr><td>8</td><td>7</td><td>x</td><td>x</td><td>x</td><td>15</td><td></td><td></td><td></td><td>2</td></tr> <tr><td>9</td><td>8</td><td>x</td><td>x</td><td>x</td><td>15</td><td></td><td></td><td></td><td>3</td></tr> <tr><td>10</td><td>9</td><td>x</td><td>x</td><td>x</td><td>15</td><td></td><td></td><td></td><td>4</td></tr> <tr><td>11</td><td>10</td><td>x</td><td>x</td><td>x</td><td>15</td><td></td><td></td><td></td><td>5</td></tr> <tr><td>12</td><td>11</td><td>x</td><td>x</td><td>x</td><td>15</td><td></td><td></td><td></td><td>6</td></tr> <tr><td>13</td><td>12</td><td>SUM</td><td></td><td></td><td>15</td><td></td><td></td><td></td><td>1</td></tr> <tr><td>14</td><td>13</td><td>SUM</td><td></td><td></td><td>15</td><td></td><td></td><td></td><td>2</td></tr> <tr><td>15</td><td>14</td><td>SUM</td><td></td><td></td><td>15</td><td></td><td></td><td></td><td>3</td></tr> <tr><td>16</td><td>15</td><td>SUM</td><td></td><td></td><td>15</td><td></td><td></td><td></td><td>4</td></tr> <tr><td>17</td><td>16</td><td>SUM</td><td></td><td></td><td>15</td><td></td><td></td><td></td><td>5</td></tr> <tr><td>18</td><td>17</td><td>SUM</td><td></td><td></td><td>15</td><td></td><td></td><td></td><td>6</td></tr> <tr><td>19</td><td>18</td><td>x</td><td>x</td><td>x</td><td></td><td>5</td><td>5</td><td>5</td><td>1</td></tr> <tr><td>20</td><td>19</td><td>x</td><td>x</td><td>x</td><td>15</td><td></td><td></td><td></td><td>1</td></tr> <tr><td>21</td><td>20</td><td>x</td><td>x</td><td>x</td><td></td><td>5</td><td>5</td><td>5</td><td>1</td></tr> <tr><td>22</td><td>21</td><td>x</td><td>x</td><td>x</td><td>15</td><td></td><td></td><td></td><td>1</td></tr> </tbody> </table>	Nr.	Byte	Measuring / IN			Controlling / Endstop			ext. MMI	L1	L2	L3	Sum	L1	L2	L3	1	0	x	x	x		5	5	5		2	1	x	x	x	remain	4	4	4		3	2	x	x	x		5	5	5		4	3	x	x	x	15					5	4	SUM			15					6	5	SUM	l1	l2	15					7	6	x	x	x	15				1	8	7	x	x	x	15				2	9	8	x	x	x	15				3	10	9	x	x	x	15				4	11	10	x	x	x	15				5	12	11	x	x	x	15				6	13	12	SUM			15				1	14	13	SUM			15				2	15	14	SUM			15				3	16	15	SUM			15				4	17	16	SUM			15				5	18	17	SUM			15				6	19	18	x	x	x		5	5	5	1	20	19	x	x	x	15				1	21	20	x	x	x		5	5	5	1	22	21	x	x	x	15				1
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3174	102	H	L1	<table border="1"> <thead> <tr> <th>Valid values</th> <th>Start</th> <th>End</th> <th>Step width</th> </tr> </thead> <tbody> <tr><td>1 .. 50</td><td>5A</td><td>250A</td><td>5A</td></tr> <tr><td>51 .. 175</td><td>260A</td><td>1.5kA</td><td>10A</td></tr> <tr><td>176 .. 185</td><td>1.55kA</td><td>2kA</td><td>50A</td></tr> <tr><td>186 .. 245</td><td>2.1kA</td><td>8kA</td><td>100A</td></tr> <tr><td>246 .. 255</td><td>8.5kA</td><td>13kA</td><td>500A</td></tr> </tbody> </table>	Valid values	Start	End	Step width	1 .. 50	5A	250A	5A	51 .. 175	260A	1.5kA	10A	176 .. 185	1.55kA	2kA	50A	186 .. 245	2.1kA	8kA	100A	246 .. 255	8.5kA	13kA	500A																																																																																																																																																																																																																				
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3175	103	H	L3																																																																																																																																																																																																																																													
		L		Secondary current converter Valid values: 0 = 1A / 1 = 5A																																																																																																																																																																																																																																												
3176	104	H	L1	Endstop																																																																																																																																																																																																																																												
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3177	105	H	L3	Valid range: 1 .. max. endstop - see table at register 3173																																																																																																																																																																																																																																												
		L	SUM																																																																																																																																																																																																																																													

3178	106	H	L1	Control series	<i>Valid values</i>	<i>Series</i>	<i>Valid values</i>	<i>Series</i>
		L	L2		1	1:1:1:1:1 ...	11	1:1:2:4:4...
H	L3	2	1:2:2:2:2 ...		12	1:1:2:4:8...		
L	SUM	3	1:2:3:3:3 ...		13	1:1:1:2:2...		
3179	107	H	L3		4	1:2:3:4:4 ...	14	1:1:1:2:3...
		L	SUM		5	1:2:4:4:4...	15	1:1:1:2:4...
3179	107	H	L3		6	1:2:3:6:1...	16	1:1:1:2:5...
		L	SUM		7	1:2:4:8:8...	17	1:1:1:1:2...
		H	L3		8	1:1:2:2:2...	18	1:1:1:1:3...
		L	SUM		9	1:1:2:3:3...	19	1:1:1:1:4...
		H	L3	10	1:1:2:3:6...	20	1:1:1:1:5...	
		L	SUM			21	Series editor	
		H	L3					
		L	SUM					
		H	L3					
		L	SUM					
3180	108	H	Control mode		<i>Valid values</i>	<i>Control mode</i>		
					0	Sequent / LIFO		
					1	Loop / FIFO		
					2	Intelligent		
					3	Combi-detuning		
3180	108	L	L1	Power 1 st step (int.)	Integer value:			
3181	109	H	L1	Power 1 st step(dec)	Valid range: 0 .. 255kvar / 0 .. 2550kvar			
		L	L1	Power 1 st step (int.)	Unit kvar			
3182	110	H	L2	Power 1 st step(dec)	Decimal value:			
		L	L2	Power 1 st step (int.)	Valid range: 0 .. 99 / 128			
		H	L3	Power 1 st step(dec)	If 128 → multiply integer value with 10			
3183	111	L	L3	Power 1 st step (int.)	Examples:			
		H	SUM	Power 1 st step(dec)	int. = 12, dec. = 50 → 1 st step = 12.50 kvar			
		L	SUM	Power 1 st step (int.)	int.= 50, dec. = 128 → 1 st step = 500 kvar			
		H	SUM	Power 1 st step(dec)				
3184	112	L	Target cos phi		Byte	<i>Value</i>	<i>Cos phi</i>	
					Valid range: 30 .. 170	80	0.80cap	
					Examples:	100	1.00	
						120	0.80ind	
3185	113	H	Enable 2 nd target cos phi		<i>Valid values</i>	<i>Description</i>		
		L	2 nd target cos phi		1	No		
					2	Timer		
					3	Energy supply		
3186	114	H	Start timer - Hours		Unit hour, valid range: 0 .. 23			
		L	Start timer - Minutes		Unit minutes, valid range: 0 .. 59			
3187	115	H	Start timer - Weekday		Valid values: 7 .. 17: 7= Sunday, 8= Monday, 9= Tuesday .. 14= Mo-Fr, 15= Mo-Sa, 16= Mo-Su, 17= Sa/Su			
		L	End timer - Hours		Unit hour, valid range: 0 .. 23			
3188	116	H	End timer - Minutes		Unit minutes, valid range: 0 .. 59			
		L	End timer - Weekday		Valid range: 7 .. 17: 7= Sunday, 8= Monday, 9= Tuesday .. 14= Mo-Fr, 15= Mo-Sa, 16= Mo-Su, 17= Sa/Su			

3189	117	H	Measuring voltage L-L	Byte, valid range: 10 .. 152 - Unit 5V Range: 50V .. 760V E.g.: Byte * 5V = Measuring voltage → 100 * 5V = 500V																		
		L	Voltage converter	<table border="1"> <thead> <tr> <th>Valid values</th> <th>Start</th> <th>End</th> <th>Step width</th> </tr> </thead> <tbody> <tr> <td>0</td> <td colspan="3">not used</td> </tr> <tr> <td>1 .. 59</td> <td>410</td> <td>1kV</td> <td>10V</td> </tr> <tr> <td>60 .. 189</td> <td>1.1kV</td> <td>14kV</td> <td>100V</td> </tr> <tr> <td>190 .. 255</td> <td>15kV</td> <td>79kV</td> <td>1000V</td> </tr> </tbody> </table>	Valid values	Start	End	Step width	0	not used			1 .. 59	410	1kV	10V	60 .. 189	1.1kV	14kV	100V	190 .. 255	15kV
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60 .. 189	1.1kV	14kV	100V																			
190 .. 255	15kV	79kV	1000V																			
3190	118	H	Switch-on time	<table border="1"> <thead> <tr> <th>Valid values</th> <th>Start</th> <th>End</th> <th>Step width</th> </tr> </thead> <tbody> <tr> <td>1 .. 120</td> <td>1 sec</td> <td>120 sec</td> <td>1 sec</td> </tr> <tr> <td>121 .. 138</td> <td>3 min</td> <td>20 min</td> <td>1 min</td> </tr> </tbody> </table>	Valid values	Start	End	Step width	1 .. 120	1 sec	120 sec	1 sec	121 .. 138	3 min	20 min	1 min						
		Valid values	Start		End	Step width																
1 .. 120	1 sec	120 sec	1 sec																			
121 .. 138	3 min	20 min	1 min																			
L	Switch-off time																					
3191	119	H	Discharge time	E.g: 40 = 40 sec / 122 = 4 min																		
		L	Alarm temperature	Byte, valid range: 20 .. 80 – Unit °C, E.g.: 50 = 50°C																		
3192	120	H	Fan start-up temperature	Byte, valid range: 15 .. 70 – Unit °C, E.g.: 50 = 50°C																		
		L	Function message relays	Byte, valid range: 4 .. 6 4= OFF, 5= Energy supply, 6= Undercurrent, 7= Harmonics, 8= Error cap. current, 9= Error COM1, 10= Error COM2, 11 = Error COM1/2																		
3193	212	H	External input (2 nd para-set)	Byte, valid range: 12 .. 16 12= No, 13= 2 nd parameter set, 14= External error, 15= Parallel coupling, 16= Master-slave coupling																		
		L	L1																			
3194	122	H	L2	See register 3174																		
		L	L3																			
3195	123	H	Secondary current converter	Valid values: 0 = 1A / 1 = 5A																		
		L	L1																			
3196	124	H	Endstop	Byte. Valid range: 1 .. max. endstop - see table at register 3173																		
		L			L3																	
3197	125	H	SUM																			
		L	L1																			
3198	126	H	Control series	See register 3178																		
		L			L3																	
3199	127	H	SUM																			
		L	Control mode	See register 3180																		
3200	128	H	L1	See register 3181																		
		L	Power 1 st step(int.) Power 1 st step(dec)																			
3201	129	H	L2	See register 3181																		
		L	Power 1 st step(int.) Power 1 st step(dec)																			
3202	130	H	L3	See register 3181																		
		L	Power 1 st step(int.) Power 1 st step(dec)																			
3203	131	H	SUM	See register 3181																		
		L	Power 1 st step(int.) Power 1 st step(dec)																			
3204	132	H	Target cos phi	See register 3184																		
		L	Enable 2 nd target cos phi	See register 3185																		
3205	133	H	2 nd target cos phi	See register 3186																		
		L	Start timer - Hours	See register 3187																		
3206	134	H	Start timer - Minutes	See register 3187																		
		L	Start timer - Weekday	See register 3187																		
3207	135	H	End timer - Hours	See register 3187																		

3208	136	L	End timer - Minutes	See register 3188										
		H	End timer - Weekday											
3209	137	L	Switch-on time	See register 3190										
		H	Switch-off time											
3210	138	L	Discharge time	See register 3191										
		H	Threshold THD-V											
3211.. 3213	139.. 141	L	-	Reserved										
3214	142	W	Start-up picture	<table border="1"> <thead> <tr> <th>Valid values</th> <th>Name</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>EPC</td> </tr> <tr> <td>1</td> <td>EBE</td> </tr> <tr> <td>2</td> <td>MDL</td> </tr> <tr> <td>3</td> <td>ESK</td> </tr> </tbody> </table>	Valid values	Name	0	EPC	1	EBE	2	MDL	3	ESK
				Valid values	Name									
0	EPC													
1	EBE													
2	MDL													
3	ESK													
142.. 199				Reserved										
-	200	W	Reset controller memory registers	<table border="1"> <thead> <tr> <th>Valid values</th> <th>Reset</th> </tr> </thead> <tbody> <tr> <td>0x3333</td> <td>Operation time of stages 1 .. 15</td> </tr> <tr> <td>0x5555</td> <td></td> </tr> <tr> <td>0xAAAA</td> <td>Max. grid parameters</td> </tr> <tr> <td>0xCCCC</td> <td>Switching cycles of stages 1 .. 15</td> </tr> </tbody> </table>	Valid values	Reset	0x3333	Operation time of stages 1 .. 15	0x5555		0xAAAA	Max. grid parameters	0xCCCC	Switching cycles of stages 1 .. 15
				Valid values	Reset									
0x3333	Operation time of stages 1 .. 15													
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0xAAAA	Max. grid parameters													
0xCCCC	Switching cycles of stages 1 .. 15													
201.. 254				Reserved										
3048	255	L	"Hauptreset" / Set Testmode	<table border="1"> <thead> <tr> <th>Valid values</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>55</td> <td>"Hauptreset"</td> </tr> <tr> <td>110</td> <td>Testmode</td> </tr> </tbody> </table>	Valid values	Function	55	"Hauptreset"	110	Testmode				
				Valid values	Function									
55	"Hauptreset"													
110	Testmode													
				After "Hauptreset" the function will be disabled.										

[Remote \(read / write\)](#)

Address		H/L	Register name	Description / Range of values / Examples																																																															
<i>Code</i> R= 3	<i>Code</i> W= 6																																																																		
		H	Number of steps to switch	Valid range 1..X (X = settings at EXPERT-MODE, PW= 6343) Unit steps Example: 3 → switch-on / -off 3 steps																																																															
3036	40	L	Control direction	<table border="1"> <thead> <tr> <th>Bit</th> <th>7</th> <th>6</th> <th>5</th> <th>4</th> <th>3</th> <th>2</th> <th>1</th> <th>0</th> </tr> </thead> <tbody> <tr> <td>Phase</td> <td colspan="2">SUM</td> <td colspan="2">L3</td> <td colspan="2">L2</td> <td colspan="2">L1</td> </tr> <tr> <td><i>Dec.</i></td> <td colspan="2"></td> <td colspan="6"><i>Description</i></td> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> <td colspan="6">-</td> </tr> <tr> <td>1</td> <td>0</td> <td>1</td> <td colspan="6">Switch-off</td> </tr> <tr> <td>2</td> <td>1</td> <td>0</td> <td colspan="6">Stop</td> </tr> <tr> <td>3</td> <td>1</td> <td>1</td> <td colspan="6">Switch-on</td> </tr> </tbody> </table>	Bit	7	6	5	4	3	2	1	0	Phase	SUM		L3		L2		L1		<i>Dec.</i>			<i>Description</i>						0	0	0	-						1	0	1	Switch-off						2	1	0	Stop						3	1	1	Switch-on					
Bit	7	6	5	4	3	2	1	0																																																											
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3	1	1	Switch-on																																																																

History

V1.0

- Initial Version

- Page 8: Controller settings, register 3193/212 → 3193/121 (write address is wrong)
- Page 10: Controller settings, register -/200, 0x5555 Error memory cleared

V1.4

- Page 6: Controller settings, register 3173/101: Table changed
- Page 8: Controller settings, register 3192/120: Valid range and list changed
- Page 8: Controller settings, register 3193/121: Valid range and list changed

V1.4.1

- Page 5: Stage information, register 3389..3448: Correct register index (L1, L2, L3, SUM)
- Page 5/6: Stage information, register 3449..3568: Correct register index (L1, L2, L3, SUM)
- Page 5/6: Stage information, register 3585..3704: Correct register index (L1, L2, L3, SUM)

V1.4.2

- Page 2: Error, register 3038: SUM → 1Ph = 1phase measuring / controlling
- Page 2: Error, register 3040: SUM → 1Ph = 1phase measuring / controlling

V1.5

- Page 2: Messages register 3041: add/ specify information
- Page 3: Device state 3042: add/ specify information

V1.6

- Page 8: Add new register range (8000) with floating point numbers
- Page 8: Add new register range (6000) with Energy in kW/Kvar and ws/vars