MODBUS – Address table BR7000 – V1.4

Grid parameters, stage information (read only)

Address DEC	Address HEX	H/L	Register name	Description / Range of values / Examples
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	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	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	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	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	Unsigned 16bit integer. Unit V E.g.: 230 = 230V
3019	0B CB	W	L2	
3020	0B CC	W	L3	
3021	0B CD	W	L1	Unsigned 16bit integer. Unit A E.g.: 1000 = 1000A
3022	0B CE	W	L2	
3023	0B CF	W	L3	
3024	0B D0	W	L1	Signed 16bit integer - Unit 1. Examples: Value (Hex / Decimal) — Value of power factor / cos-phi 0h0320 / 800 — 0.800 ind 0h03E8 / 1000 — 1.000 0hFCE0 / -800 — 0.800 cap Valid range -999 .. 0 .. 1000
3025	0B D1	W	L2	
3026	0B D2	W	L3	
3027	0B D3	W	SUM	
3028	0B D4	L	L1	Byte Unit Hz E.g.: 50 = 50Hz
3029	0B D5	L	L2	
3030	0B D6	L	L3	

<table>
<tr><td>3031</td><td>0B D7</td><td>W</td><td colspan="2">Temperature in °C</td><td colspan="4">Signed 16bit integer - Unit °C. Examples:
<table><tr><th>Hex value</th><th>Temp.</th><th>Hex value</th><th>Temp.</th></tr><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></table></td></tr>
<tr><td>3032</td><td>0B D8</td><td>W</td><td>L1</td><td rowspan="4">Output relays</td><td colspan="4">High-Byte
<table><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>Stage</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></table>Low-Byte
<table><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>Stage</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>-</td></tr></table>0 = Stage off / 1 = Stage on (connected)</td></tr>
<tr><td>3033</td><td>0B D9</td><td>W</td><td>L2</td></tr>
<tr><td>3034</td><td>0B DA</td><td>W</td><td>L3</td></tr>
<tr><td>3035</td><td>0B DB</td><td>W</td><td>SUM</td></tr>
<tr><td>3036</td><td>0B DC</td><td>L</td><td colspan="2">Control direction</td><td colspan="4"><table><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">SUM</td><td colspan="2">L3</td><td colspan="2">L2</td><td colspan="2">L1</td></tr></table><table><tr><th>Dec.</th><th></th><th></th><th>Description</th></tr><tr><td>0</td><td>0</td><td>0</td><td>-</td></tr><tr><td>1</td><td>0</td><td>1</td><td>Switch-off</td></tr><tr><td>2</td><td>1</td><td>0</td><td>Stop</td></tr><tr><td>3</td><td>1</td><td>1</td><td>Switch-on</td></tr></table></td></tr>
<tr><td rowspan="2">3037</td><td rowspan="2">0B DD</td><td>H</td><td>L2</td><td rowspan="4">Error</td><td colspan="4" rowspan="4"><table><tr><th>Decimal value</th><th>Bit number</th><th>Description</th></tr><tr><td>1</td><td>Bit0</td><td>No measuring voltage</td></tr><tr><td>2</td><td>Bit1</td><td>Over voltage</td></tr><tr><td>4</td><td>Bit2</td><td>Over compensated</td></tr><tr><td>8</td><td>Bit3</td><td>Under compensated</td></tr><tr><td>16</td><td>Bit4</td><td>Exceed THD-V limit</td></tr><tr><td>32</td><td>Bit5</td><td>Over temperature</td></tr><tr><td>64</td><td>Bit6</td><td>Over current</td></tr><tr><td>128</td><td>Bit7</td><td>Under voltage</td></tr></table></td></tr>
<tr><td>L</td><td>L1</td></tr>
<tr><td rowspan="2">3038</td><td rowspan="2">0B DE</td><td>H</td><td>SUM</td></tr>
<tr><td>L</td><td>L3</td></tr>
<tr><td rowspan="2">3039</td><td rowspan="2">0B DF</td><td>H</td><td>L2</td><td rowspan="4">Warning</td><td colspan="4" rowspan="4"><table><tr><th>Decimal value</th><th>Bit number</th><th>Description</th></tr><tr><td>1</td><td>Bit0</td><td>Exceed switching cycle limit</td></tr><tr><td>2</td><td>Bit1</td><td>Under current</td></tr><tr><td>4</td><td>Bit2</td><td>MODBUS-Error</td></tr><tr><td>8</td><td>Bit3</td><td>MMI-Error</td></tr><tr><td>16</td><td>Bit4</td><td>Remote – switch-off</td></tr><tr><td>32</td><td>Bit5</td><td>Remote – stop</td></tr><tr><td>64</td><td>Bit6</td><td>Remote – switch-on</td></tr><tr><td>128</td><td>Bit7</td><td>Remote – active</td></tr></table></td></tr>
<tr><td>L</td><td>L1</td></tr>
<tr><td rowspan="2">3040</td><td rowspan="2">0B E0</td><td>H</td><td>SUM</td></tr>
<tr><td>L</td><td>L3</td></tr>
<tr><td>3041</td><td>0B E1</td><td>L</td><td colspan="2">ext. MMI message</td><td colspan="4">Byte</td></tr>
<tr><td>3042</td><td>0B E2</td><td>W</td><td colspan="2">Device state</td><td colspan="4">Unsigned 16bit integer</td></tr>
<tr><td rowspan="2">3043</td><td rowspan="2">0B E3</td><td>H</td><td colspan="2">Internal Clock - Minute</td><td colspan="4">Byte, valid range: 1 .. 59 – Unit min</td></tr>
<tr><td>L</td><td colspan="2">Internal Clock - Second</td><td colspan="4">Byte, valid range: 1 .. 59 – Unit sec</td></tr>
<tr><td rowspan="2">3044</td><td rowspan="2">0B E4</td><td>H</td><td colspan="2">Intern. Calendar - Day</td><td colspan="4">Byte, valid range: 1 .. 31 – Unit d</td></tr>
<tr><td>L</td><td colspan="2">Internal Clock - Hour</td><td colspan="4">Byte, valid range: 0 .. 24 – Unit hr</td></tr>
<tr><td rowspan="2">3045</td><td rowspan="2">0B E5</td><td>H</td><td colspan="2">Intern. Calendar - Year</td><td colspan="4">Byte, valid range: 00 .. 99 – Unit yr
Add 2000 to get real Year. e.g.: 10 = 2010</td></tr>
<tr><td>L</td><td colspan="2">Intern. Calendar - Month</td><td colspan="4">Byte, valid values: 1 .. 12 – Unit month</td></tr>
</table>

3046	0B E6	W	Last pressed key -1-		*Value* / *Key*: 1234 AUTO; 2345 ENTER; 3456 HELP; 4567 ESC
3047	0B E7	L	Last pressed key -2-		*Value* / *Key*: Reg.Value +1 PLUS; Reg.Value -1 MINUS
3048	0B E8	L	Test state		*Bit* / *Taste*: 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 3rd .. 31st Harmonics	Unsigned 16bit integer; Unit 0.1 %; E.g.: 100 * 0.1 = 10.0%
3088.. 3102	0C 10 0C 1E	W	L2		
3103.. 3117	0C 1F 0C 2D	W	L3		
3118.. 3132	0C 2E 0C 3C	W	L1	Current 3rd .. 31st Harmonics	Unsigned 16bit integer; Unit 0.1 %; E.g.: 100 * 0.1 = 10.0%
3133.. 3147	0C 3D 0C 4B	W	L2		
3148.. 3162	0C 4C 0C 5A	W	L3		
3163	0C 5B	W	L1	THD-V	Unsigned 16bit integer; Unit 0.1 %; E.g.: 100 * 0.1 = 10.0%
3164	0C 5C	W	L2		
3165	0C 5D	W	L3		
3166	0C 5E	W	L1	THD-I	Unsigned 16bit integer; Unit 0.1 %; E.g.: 100 * 0.1 = 10.0%
3167	0C 5F	W	L2		
3168	0C 60	W	L3		
3169.. 3213	0C 61 0C 8D				
3214	0C 8E	L		Start-up picture	*Value* / *Name*: 0 EPC; 1 EBE; 2 MDL; 3 ESK
3215..	0C 93				
3226	0C 9A	WW	L1	Timestamp Maximum Voltage	*Bit* / *Description*: 0 .. 16 Time in seconds per day (0 .. 86399); 17 .. 21 Day (1 .. 31); 22 .. 25 Month (1 .. 12); 26 .. 31 Year + 2000 (E.g: 10 → 2010)
3228	0C 9C	WW	L2		
3230	0C 9E	WW	L3		
3232	0C A0	WW	L1	Timestamp Maximum Current	
3234	0C A2	WW	L2		
3236	0C A4	WW	L3		

3238	0C	A6	WW	L1	Timestamp
3240	0C	A8	WW	L2	Maximum Reactive power
3242	0C	AA	WW	L3	
3244	0C	AC	WW	L1	Timestamp
3246	0C	AE	WW	L2	Maximum Active power
3248	0C	B0	WW	L3	
3250	0C	B2	WW	L1	Timestamp
3252	0C	B4	WW	L2	Maximum Apparent power
3254	0C	B6	WW	L3	
3256	0C	B8	WW	L1	Timestamp
3258	0C	BA	WW	L2	Maximum Frequency
3260	0C	BC	WW	L3	
3262	0C	BE	WW		Timestamp max. Temperature
3264	0C	C0	WW	L1	Timestamp
3266	0C	C2	WW	L2	Maximum Voltage THD
3268	0C	C4	WW	L3	
3270	0C	C6	WW	L1	Timestamp
3272	0C	C8	WW	L2	Maximum Current THD
3274	0C	CA	WW	L3	
3276	0C	CC	W	L1	Minimum Voltage
3277	0C	CD	W	L2	
3278	0C	CE	W	L3	
3279	0C	CF	W	L1	Maximum Voltage
3280	0C	D0	W	L2	
3281	0C	D1	W	L3	
3282	0C	D2	W	L1	Maximum Current
3283	0C	D3	W	L2	
3284	0C	D4	W	L3	
3285	0C	D5	W		Max. Power Scaling Factor (MPSF)
3286	0C	D6	W	L1	Maximum Reactive power
3287	0C	D7	W	L2	
3288	0C	D8	W	L3	
3289	0C	D9	W	SUM	
3290	0C	DA	W	L1	Maximum Active power
3291	0C	DB	W	L2	
3292	0C	DC	W	L3	
3293	0C	DD	W	SUM	
3294	0C	DE	W	L1	Maximum Apparent power
3295	0C	DF	W	L2	

Bit	*Description*
0 .. 16	Time in seconds per day (0 .. 86399)
17 .. 21	Day (1 .. 31)
22 .. 25	Month (1 .. 12)
26 .. 31	Year + 2000 (E.g.: 10 → 2010)

Unsigned 16bit integer. Unit V E.g.: 230 = 230V
Unsigned 16bit integer. Unit V E.g.: 230 = 230V
Unsigned 16bit integer. Unit A E.g.: 100 = 100V
Multiplier for values of address 3286 .. 3297 Valid values: 1, 10, 100, 1000
Unsigned 16bit integer. Unit var E.g.: 1000 * MPSF = 10000var (If MPSF = 10)
Unsigned 16bit integer. Unit W E.g.: 1000 * MPSF = 10000W (If MPSF = 10)
Unsigned 16bit integer. Unit VA E.g.: 1000 * MPSF = 10000VA (If MPSF = 10)

<table>
<tr><td>3296</td><td>0C E0</td><td>W</td><td>L3</td><td>Maximum Apparent power</td><td></td></tr>
<tr><td>3297</td><td>0C E1</td><td>W</td><td>SUM</td><td></td><td></td></tr>
<tr><td>3298</td><td>0C E2</td><td>W</td><td></td><td>Maximum Temperature</td><td>Signed 16bit integer - Unit °C. Examples:
<table><tr><th>Hex value</th><th>Temp.</th><th>Hex value</th><th>Temp.</th></tr><tr><td>0h000A</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></table></td></tr>
<tr><td>3299</td><td>0C E3</td><td>W</td><td>L1</td><td rowspan="3">Maximum Voltage THD</td><td rowspan="3">Unsigned 16bit integer
Unit 0.1 %
E.g.: 100 * 0.1 = 10.0%</td></tr>
<tr><td>3300</td><td>0C E4</td><td>W</td><td>L2</td></tr>
<tr><td>3301</td><td>0C E5</td><td>W</td><td>L3</td></tr>
<tr><td>3302</td><td>0C E6</td><td>W</td><td>L1</td><td rowspan="3">Maximum Current THD</td><td rowspan="3">Unsigned 16bit integer
Unit 0.1 %
E.g.: 100 * 0.1 = 10.0%</td></tr>
<tr><td>3303</td><td>0C E7</td><td>W</td><td>L2</td></tr>
<tr><td>3304</td><td>0C E8</td><td>W</td><td>L3</td></tr>
<tr><td>3305</td><td>0C E9</td><td>WW</td><td>IND</td><td rowspan="2">Reactive Energy</td><td rowspan="2">Unsigned 32bit long - Unit kvarh
E.g.: 100 = 100kvarh</td></tr>
<tr><td>3307</td><td>0C EB</td><td>WW</td><td>CAP</td></tr>
<tr><td>3309</td><td>0C ED</td><td>WW</td><td>+</td><td rowspan="2">Energy</td><td rowspan="2">Unsigned 32bit long - Unit kWh
E.g.: 100 = 100kWh</td></tr>
<tr><td>3311</td><td>0C EF</td><td>WW</td><td>-</td></tr>
<tr><td>3312..
3328</td><td>0C F0
0D 00</td><td></td><td></td><td></td><td></td></tr>
<tr><td>3329</td><td>0D 01</td><td>W</td><td></td><td>Status of stage 1 .. 8</td><td><table><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">4th stage</td><td colspan="2">3rd stage</td><td colspan="2">2nd stage</td><td colspan="2">1st stage</td></tr></table><table><tr><th>Dec.</th><th></th><th></th><th>Description</th></tr><tr><td>0</td><td>0</td><td>0</td><td>Disconnected (fix)</td></tr><tr><td>1</td><td>0</td><td>1</td><td>AUTO</td></tr><tr><td>2</td><td>1</td><td>0</td><td>Connected (fix)</td></tr><tr><td>3</td><td>1</td><td>1</td><td>Error</td></tr></table><table><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">8thstage</td><td colspan="2">7th stage</td><td colspan="2">6th stage</td><td colspan="2">5th stage</td></tr></table></td></tr>
<tr><td>3330</td><td>0D 02</td><td>W</td><td></td><td>Status of stage 9 .. 15</td><td>see Address 3329 for more information.<table><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><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></td></tr>
<tr><td>3389..
3404</td><td>0D 3D
0D 4C</td><td>W</td><td></td><td>Stage quantification
Stage 1 .. 15</td><td>Unsigned 16bit integer. E.g.: 4 → 4 times power 1st stage</td></tr>
<tr><td>3449..
3464</td><td>0D 79
0D 88</td><td>W</td><td></td><td>Switching cycles – LOW
Stage 1 ..15</td><td rowspan="2">LOW + HIGH * 2^16 = total switching cycle per stage
Unsigned 32bit long.
Unit 1
E.g.: Low = 34464, High= 1 → 100k * switching cycles</td></tr>
<tr><td>3509..
3524</td><td>0D B5
0D C4</td><td>W</td><td></td><td>Switching cycles – HIGH
Stage 1 ..15</td></tr>
<tr><td>3585..
3600</td><td>0E 01
0E 10</td><td>W</td><td></td><td>Operation time – HIGH
Stage 1 .. 15</td><td rowspan="2">LOW + HIGH * 2^16 = total operation time per stage
Unsigned 32bit long.
Unit min
E.g.: Low = 34464, High= 1 → 100k * min</td></tr>
<tr><td>3645..
3660</td><td>0E 3D
0E 4C</td><td>W</td><td></td><td>Operation time – LOW
Stage 1 .. 15</td></tr>
<tr><td>3705,
3706</td><td>0E 79
0E 7A</td><td>WW</td><td></td><td>Controller operation time</td><td>Unsigned 32bit long.
Unit min E.g.: Low = 34464, High= 1 → 100k * min</td></tr>
</table>

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

Controller settings (read / write)

<table>
<tr><th colspan="2">Address</th><th rowspan="2">H/L</th><th rowspan="2">Register name</th><th rowspan="2">Description / Range of values / Examples</th></tr>
<tr><th>Code R= 3</th><th>Code W= 6</th></tr>
<tr><td></td><td></td><td>H</td><td>Language</td><td>0= German, 1= English, 2= Spanish, 3= Turkish, 4= Russian ..</td></tr>
<tr><td>3173</td><td>101</td><td>L</td><td>Measuring- / Controlling mode</td><td>
<table>
<tr><th colspan="2">Mode</th><th colspan="3">Measuring / IN</th><th colspan4="">Controlling / Endstop</th><th colspan="3"></th><th>ext.</th></tr>
<tr><th>Nr.</th><th>Byte</th><th>L1</th><th>L2</th><th>L3</th><th>Sum</th><th>L1</th><th>L2</th><th>L3</th><th>MMI</th></tr>
<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>I1</td><td>I2</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>
</table>
</td></tr>
<tr><td>3174</td><td>102</td><td>H</td><td>L1</td><td rowspan="2">Primary current converter</td><td rowspan="2">
<table>
<tr><th>Valid values</th><th>Start</th><th>End</th><th>Step width</th></tr>
<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>
</table>
</td></tr>
<tr><td rowspan="2">3175</td><td rowspan="2">103</td><td>L</td><td>L2</td></tr>
<tr><td>H</td><td>L3</td><td></td><td></td></tr>
<tr><td>L</td><td></td><td>Secondary current converter</td><td>Valid values: 0 = 1A / 1 = 5A</td></tr>
<tr><td>3176</td><td>104</td><td>H</td><td>L1</td><td rowspan="3">Endstop</td><td rowspan="3">Byte.
Valid range: 1 .. max. endstop - see table at register 3173</td></tr>
<tr><td></td><td>L</td><td>L2</td></tr>
<tr><td>3177</td><td>105</td><td>H</td><td>L3</td></tr>
<tr><td></td><td></td><td>L</td><td>SUM</td><td></td><td></td></tr>
</table>

3178	106	**H**	L1	Control series	
		L	L2		
3179	107	**H**	L3		
		L	SUM		

Valid values	*Series*	*Valid values*	*Series*
1	1:1:1:1:1 ...	11	1:1:2:4:4...
2	1:2:2:2:2 ...	12	1:1:2:4:8...
3	1:2:3:3:3 ...	13	1:1:1:2:2...
4	1:2:3:4:4 ...	14	1:1:1:2:3...
5	1:2:4:4:4...	15	1:1:1:2:4...
6	1:2:3:6:1...	16	1:1:1:2:5...
7	1:2:4:8:8...	17	1:1:1:1:2...
8	1:1:2:2:2...	18	1:1:1:1:3...
9	1:1:2:3:3...	19	1:1:1:1:4...
10	1:1:2:3:6...	20	1:1:1:1:5...
		21	Series editor

3180	108	**H**	Control mode	

Valid values	*Control mode*
0	Sequent / LIFO
1	Loop / FIFO
2	Intelligent
3	Combi-detuning

3180	108	**L**	L1	Power 1st step (int.)	Integer value: Valid range: 0 .. 255kvar / 0 .. 2550kvar Unit kvar Decimal value: Valid range: 0 .. 99 / 128 If 128 → multiply integer value with 10 Examples: int. = 12, dec. = 50 → 1st step = 12.50 kvar int.= 50, dec. = 128 → 1st step = 500 kvar
3181	109	**H**		Power 1st step(dec)	
		L	L2	Power 1st step (int.)	
3182	110	**H**		Power 1st step(dec)	
		L	L3	Power 1st step (int.)	
3183	111	**H**		Power 1st step(dec)	
		L	SUM	Power 1st step (int.)	
3184	112	**H**		Power 1st step(dec)	
		L	Target cos phi		Byte Valid range: 30 .. 170 Examples:

Value	*Cos phi*
80	0.80cap
100	1.00
120	0.80ind

3185	113	**H**	Enable 2nd target cos phi	
		L	2nd target cos phi	See register 3184

Valid values	*Description*
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

<table>
<tr><td rowspan="2">3189</td><td rowspan="2">117</td><td>H</td><td colspan="2">Measuring voltage L-L</td><td>Byte, valid range: 10 .. 152 - Unit 5V
Range: 50V .. 760V
E.g.: Byte * 5V = Measuring voltage → 100 * 5V = 500V</td></tr>
<tr><td>L</td><td colspan="2">Voltage converter</td><td><table><tr><th>Valid values</th><th>Start</th><th>End</th><th>Step width</th></tr><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></table></td></tr>
<tr><td rowspan="2">3190</td><td rowspan="2">118</td><td>H</td><td colspan="2">Switch-on time</td><td rowspan="2"><table><tr><th>Valid values</th><th>Start</th><th>End</th><th>Step width</th></tr><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></table></td></tr>
<tr><td>L</td><td colspan="2">Switch-off time</td></tr>
<tr><td rowspan="2">3191</td><td rowspan="2">119</td><td>H</td><td colspan="2">Discharge time</td><td colspan="2">E.g: 40 = 40 sec / 122 = 4 min</td></tr>
<tr><td>L</td><td colspan="2">Alarm temperature</td><td colspan="2">Byte, valid range: 20 .. 80 – Unit °C, E.g.: 50 = 50°C</td></tr>
<tr><td rowspan="2">3192</td><td rowspan="2">120</td><td>H</td><td colspan="2">Fan start-up temperature</td><td colspan="2">Byte, valid range: 15 .. 70 – Unit °C, E.g.: 50 = 50°C</td></tr>
<tr><td>L</td><td colspan="2">Function message relays</td><td colspan="2">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</td></tr>
<tr><td rowspan="2">3193</td><td rowspan="2">212</td><td>H</td><td colspan="2">External input (2nd para-set)</td><td colspan="2">Byte, valid range: 12 .. 16
12= No, 13= 2nd parameter set, 14= External error,
15= Parallel coupling, 16= Master-slave coupling</td></tr>
<tr><td>L</td><td>L1</td><td rowspan="3">Primary current converter</td><td rowspan="3">See register 3174</td></tr>
<tr><td>3194</td><td>122</td><td>H</td><td>L2</td></tr>
<tr><td></td><td></td><td>L</td><td>L3</td></tr>
<tr><td>3195</td><td>123</td><td>H</td><td></td><td>Secondary current converter</td><td>Valid values: 0 = 1A / 1 = 5A</td></tr>
<tr><td></td><td></td><td>L</td><td>L1</td><td rowspan="3">Endstop</td><td rowspan="3">Byte.
Valid range: 1 .. max. endstop - see table at register 3173</td></tr>
<tr><td>3196</td><td>124</td><td>H</td><td>L2</td></tr>
<tr><td></td><td></td><td>L</td><td>L3</td></tr>
<tr><td>3197</td><td>125</td><td>H</td><td>SUM</td><td rowspan="3">Control series</td><td rowspan="3">See register 3178</td></tr>
<tr><td></td><td></td><td>L</td><td>L1</td></tr>
<tr><td>3198</td><td>126</td><td>H</td><td>L2</td></tr>
<tr><td></td><td></td><td>L</td><td>L3</td><td></td><td></td></tr>
<tr><td>3199</td><td>127</td><td>H</td><td>SUM</td><td rowspan="2">Control mode</td><td rowspan="2">See register 3180</td></tr>
<tr><td></td><td></td><td>L</td><td></td></tr>
<tr><td>3200</td><td>128</td><td>H</td><td rowspan="2">L1</td><td>Power 1st step (int.)</td><td rowspan="8">See register 3181</td></tr>
<tr><td></td><td></td><td>L</td><td>Power 1st step(dec)</td></tr>
<tr><td>3201</td><td>129</td><td>H</td><td rowspan="2">L2</td><td>Power 1st step (int.)</td></tr>
<tr><td></td><td></td><td>L</td><td>Power 1st step(dec)</td></tr>
<tr><td>3202</td><td>130</td><td>H</td><td rowspan="2">L3</td><td>Power 1st step (int.)</td></tr>
<tr><td></td><td></td><td>L</td><td>Power 1st step(dec)</td></tr>
<tr><td>3203</td><td>131</td><td>H</td><td rowspan="2">SUM</td><td>Power 1st step (int.)</td></tr>
<tr><td></td><td></td><td>L</td><td>Power 1st step(dec)</td></tr>
<tr><td>3204</td><td>132</td><td>H</td><td colspan="2">Target cos phi</td><td colspan="2">See register 3184</td></tr>
<tr><td></td><td></td><td>L</td><td colspan="2">Enable 2nd target cos phi</td><td rowspan="2">See register 3185</td></tr>
<tr><td>3205</td><td>133</td><td>H</td><td colspan="2">2nd target cos phi</td></tr>
<tr><td></td><td></td><td>L</td><td colspan="2">Start timer - Hours</td><td rowspan="2">See register 3186</td></tr>
<tr><td>3206</td><td>134</td><td>H</td><td colspan="2">Start timer - Minutes</td></tr>
<tr><td></td><td></td><td>L</td><td colspan="2">Start timer - Weekday</td><td rowspan="2">See register 3187</td></tr>
<tr><td>3207</td><td>135</td><td>H</td><td colspan="2">End timer - Hours</td></tr>
</table>

<table>
<tr><td></td><td></td><td>L</td><td>End timer - Minutes</td><td rowspan="2">See register 3188</td></tr>
<tr><td rowspan="2">3208</td><td rowspan="2">136</td><td>H</td><td>End timer - Weekday</td></tr>
<tr><td>L</td><td>Switch-on time</td><td rowspan="2">See register 3190</td></tr>
<tr><td rowspan="2">3209</td><td rowspan="2">137</td><td>H</td><td>Switch-off time</td></tr>
<tr><td>L</td><td>Discharge time</td><td>See register 3191</td></tr>
<tr><td rowspan="2">3210</td><td rowspan="2">138</td><td>H</td><td>Threshold THD-V</td><td>Byte, valid range: 10 .. 255 - Unit 0.1%
Range: 1.0% .. 25.5%
E.g.: Byte * 0.1% = Threshold THD-V → 100 * 0.1% = 10.0%</td></tr>
<tr><td>L</td><td>-</td><td>Reserved</td></tr>
<tr><td>3211..
3213</td><td>139..
141</td><td></td><td></td><td>Reserved</td></tr>
<tr><td>3214</td><td>142</td><td>W</td><td>Start-up picture</td><td><table><tr><th>Valid values</th><th>Name</th></tr><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></table></td></tr>
<tr><td></td><td>142..
199</td><td></td><td></td><td>Reserved</td></tr>
<tr><td>-</td><td>200</td><td>W</td><td>Reset controller memory registers</td><td><table><tr><th>Valid values</th><th>Reset</th></tr><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></table></td></tr>
<tr><td></td><td>201..
254</td><td></td><td></td><td>Reserved</td></tr>
<tr><td>3048</td><td>255</td><td>L</td><td>“Hauptreset” /
Set Testmode</td><td><table><tr><th>Valid values</th><th>Function</th></tr><tr><td>55</td><td>“Hauptreset”</td></tr><tr><td>110</td><td>Testmode</td></tr></table>After “Hauptreset” the function will be disabled.</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
</table>

Remote (read / write)

Address *Code R= 3*	*Code W= 6*	***H/L***	***Register name***	***Description*** */ Range of values / Examples*
		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	Bit 7 6 5 4 3 2 1 0 Phase SUM L3 L2 L1 *Dec.* — *Description* 0 (0 0) - 1 (0 1) Switch-off 2 (1 0) Stop 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