

MODBUS Address-table MMI7000 - V1.3
Function code 3 (Register 3000)

| Address | | | Register name | Info / Range of values | | | | | | | | | | | | | | |
|---------|---------|--------------------------------|--------------------------------|---|----------------------|--|--------------------------------|-----|---------|--------|-----|-----------|--------|------|-------|--------|------|-----------|
| DEC | HEX | H/L | | | | | | | | | | | | | | | | |
| 2996 | 0B B4 | W | L1 | Unsigned 16bit integer. Valid values: 0..1000. Unit ‰ $\frac{I_{MAX}}{I_{eff}} \cdot 1000$ (per measuring interval of 1s) | | | | | | | | | | | | | | |
| 2997 | 0B B5 | W | L2 Current difference | | | | | | | | | | | | | | | |
| 2998 | 0B B6 | W | L3 | | | | | | | | | | | | | | | |
| 2999 | 0B B7 | W | Record interval | Unsigned 16bit integer. Valid values 0, 1, 10, 60, 900 . Unit sec 0= Stopped, > 0 recording interval in sec | | | | | | | | | | | | | | |
| 3000 | 0B B8 | H | Software version | Divide by 10 to get software version. exp: 10 = V1.0 | | | | | | | | | | | | | | |
| | | L | Device type | | 70 = MC7000 / 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 | Unsigned 16bit integer. Unit var Exp.: 1000 * PSF = 10000var (If PSF = 10) | | | | | | | | | | | | | | |
| 3003 | 0B BB | W | L2 Reactive power | | | | | | | | | | | | | | | |
| 3004 | 0B BC | W | L3 | | | | | | | | | | | | | | | |
| 3005 | 0B BD | W | SUM | | | | | | | | | | | | | | | |
| 3006 | 0B BE | W | L1 | Signed 16bit integer. Unit W Exp.: 1000 * PSF = 10000W (If PSF = 10) Negative values: supply (4-quadrant-mode) | | | | | | | | | | | | | | |
| 3007 | 0B BF | W | L2 Active power | | | | | | | | | | | | | | | |
| 3008 | 0B C0 | W | L3 | | | | | | | | | | | | | | | |
| 3009 | 0B C1 | W | SUM | | | | | | | | | | | | | | | |
| 3010 | 0B C2 | W | L1 | Unsigned 16bit integer. Unit VA Exp.: 1000 * PSF = 10000VA (If PSF = 10) | | | | | | | | | | | | | | |
| 3011 | 0B C3 | W | L2 Apparent power | | | | | | | | | | | | | | | |
| 3012 | 0B C4 | W | L3 | | | | | | | | | | | | | | | |
| 3013 | 0B C5 | W | SUM | | | | | | | | | | | | | | | |
| 3014 | 0B C6 | W | L1 | Unsigned 16bit integer. Unit var Exp.: 1000 * PSF = 10000var (If PSF = 10) | | | | | | | | | | | | | | |
| 3015 | 0B C7 | W | L2 Differential reactive power | | | | | | | | | | | | | | | |
| 3016 | 0B C8 | W | L3 | | | | | | | | | | | | | | | |
| 3017 | 0B C9 | W | SUM | | | | | | | | | | | | | | | |
| 3018 | 0B CA | W | L1 | Unsigned 16bit integer. Unit V Exp.: 230 = 230V | | | | | | | | | | | | | | |
| 3019 | 0B CB | W | L2 Measuring voltage | | | | | | | | | | | | | | | |
| 3020 | 0B CC | W | L3 | | | | | | | | | | | | | | | |
| 3021 | 0B CD | W | L1 | Unsigned 16bit integer. Unit A Exp.: 1000 = 1000A | | | | | | | | | | | | | | |
| 3022 | 0B CE | W | L2 Measuring current | | | | | | | | | | | | | | | |
| 3023 | 0B CF | W | L3 | | | | | | | | | | | | | | | |
| 3024 | 0B D0 | W | L1 | signed 16bit integer. Unit 1. Examples: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2">Value</th> <th rowspan="2">Value of powerfactor / 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> Valid decimal range -999 .. 0 .. 1000 | Value | | Value of powerfactor / Cos-phi | Hex | Decimal | 0h0320 | 800 | 0.800 ind | 0h03E8 | 1000 | 1.000 | 0hFCE0 | -800 | 0.800 cap |
| Value | | Value of powerfactor / Cos-phi | | | | | | | | | | | | | | | | |
| Hex | Decimal | | | | | | | | | | | | | | | | | |
| 0h0320 | 800 | 0.800 ind | | | | | | | | | | | | | | | | |
| 0h03E8 | 1000 | 1.000 | | | | | | | | | | | | | | | | |
| 0hFCE0 | -800 | 0.800 cap | | | | | | | | | | | | | | | | |
| 3025 | 0B D1 | W | L2 Powerfactor | | | | | | | | | | | | | | | |
| 3026 | 0B D2 | W | L3 Cos-phi | | | | | | | | | | | | | | | |
| 3027 | 0B D3 | W | SUM | | | | | | | | | | | | | | | |

| 3028 | 0B D4 | L | L1 | Unsigned 8bit byte. Unit Hz Exp: 50 = 50Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------|-------|----------------------|---|---|---------------|-------|--------------|-------|--------------|----------------------|--------|------|--------------|-------|--------|-------|---|---|---|----|---|---|----|---|--|----|---|--------------|-----|---|---------------|
| 3029 | 0B D5 | L | L2 Frequency | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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>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> </tbody> </table> | Hex value | Temp. | Hex value | Temp. | 0h000A | 10°C | 0hFFFF | -1°C | 0h0001 | 1°C | 0hFFF6 | -10°C | | | | | | | | | | | | | | | |
| Hex value | Temp. | Hex value | Temp. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0h000A | 10°C | 0hFFFF | -1°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0h0001 | 1°C | 0hFFF6 | -10°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3032 | 0B D8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3033 | 0B D9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3034 | 0B DA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3035 | 0B DB | L | Output relays | <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>Stage</td> <td>-</td> <td>-</td> <td>-</td> <td>4</td> <td>3</td> <td>2</td> <td>1</td> <td>-</td> </tr> </tbody> </table> 0 = Relay off / 1 = Relay on | Bit | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Stage | - | - | - | 4 | 3 | 2 | 1 | - | | | | | | | | | |
| Bit | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| Stage | - | - | - | 4 | 3 | 2 | 1 | - | | | | | | | | | | | | | | | | | | | | | | | |
| 3036 | 0B DC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3037 | 0B DD | H L | L2 Error L1 | <table border="1"> <thead> <tr> <th>Decimal value</th> <th>Bit</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0</td> <td>No measuring voltage</td> </tr> <tr> <td>2</td> <td>1</td> <td>Over voltage</td> </tr> <tr> <td>4</td> <td>2</td> <td></td> </tr> <tr> <td>8</td> <td>3</td> <td></td> </tr> <tr> <td>16</td> <td>4</td> <td></td> </tr> <tr> <td>32</td> <td>5</td> <td></td> </tr> <tr> <td>64</td> <td>6</td> <td>Over current</td> </tr> <tr> <td>128</td> <td>7</td> <td>Under voltage</td> </tr> </tbody> </table> | Decimal value | Bit | Description | 1 | 0 | No measuring voltage | 2 | 1 | Over voltage | 4 | 2 | | 8 | 3 | | 16 | 4 | | 32 | 5 | | 64 | 6 | Over current | 128 | 7 | Under voltage |
| Decimal value | Bit | Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 0 | No measuring voltage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 1 | Over voltage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 64 | 6 | Over current | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 128 | 7 | Under voltage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3038 | 0B DE | H L | SUM Error L3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3039 | 0B DF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3040 | 0B E0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3041 | 0B E1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3042 | 0B E2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3043 | 0B E3 | H L | Internal Clock - Minute Internal Clock - Second | Unsigned 8bit byte. Valid values: 1 .. 59 – Unit min Unsigned 8bit byte. Valid values: 1 .. 59 – Unit sec | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3044 | 0B E4 | H L | Intern. Calendar - Day Internal Clock - Hour | Unsigned 8bit byte. Valid values: 1 .. 31 – Unit d Unsigned 8bit byte. Valid values: 0 .. 24 – Unit hr | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3045 | 0B E5 | H L | Intern. Calendar - Year Intern. Calendar - Month | Unsigned 8bit byte. Valid values: 00 .. 99 – Unit yr Add 2000 to get real Year. exp: 10 = 2010 Unsigned 8bit byte. Valid values: 1 .. 12 – Unit mm | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3046 | 0B E6 | W | Last pressed key -1- | <table border="1"> <thead> <tr> <th>Value</th> <th>Key</th> </tr> </thead> <tbody> <tr> <td>1234</td> <td>AUTO</td> </tr> <tr> <td>2345</td> <td>ENTER</td> </tr> <tr> <td>3456</td> <td>HELP</td> </tr> <tr> <td>4567</td> <td>ESC</td> </tr> </tbody> </table> | Value | Key | 1234 | AUTO | 2345 | ENTER | 3456 | HELP | 4567 | ESC | | | | | | | | | | | | | | | | | |
| Value | Key | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1234 | AUTO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2345 | ENTER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3456 | HELP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4567 | ESC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3047 | 0B E7 | L | Last pressed key -2- | <table border="1"> <thead> <tr> <th>Value</th> <th>Key</th> </tr> </thead> <tbody> <tr> <td>Reg.Value +1</td> <td>PLUS</td> </tr> <tr> <td>Reg.Value -1</td> <td>MINUS</td> </tr> </tbody> </table> | Value | Key | Reg.Value +1 | PLUS | Reg.Value -1 | MINUS | | | | | | | | | | | | | | | | | | | | | |
| Value | Key | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Reg.Value +1 | PLUS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Reg.Value -1 | MINUS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| 3048 | 0B E8 | L | Test state | <table border="1"> <thead> <tr> <th>Bit</th> <th>Taste</th> </tr> </thead> <tbody> <tr> <td>6</td> <td>After manual-calibration</td> </tr> <tr> <td>7</td> <td>After calibration at test stand</td> </tr> </tbody> </table> <p>Register value 0 = main-reset executed</p> | Bit | Taste | 6 | After manual-calibration | 7 | After calibration at test stand | | | | |
|----------------|--------------------------------------|----|--|---|-------|-------------|---------|--------------------------------------|----------|---------------------------------|----------|-------|----------|------------------------------|
| Bit | Taste | | | | | | | | | | | | | |
| 6 | After manual-calibration | | | | | | | | | | | | | |
| 7 | After calibration at test stand | | | | | | | | | | | | | |
| 3073.. 3087 | 0C 01 0C 0F | W | L1 Voltage | Unsigned 16bit integer * 0.1 . Unit % Exp.: 100 * 0.1 = 10.0% | | | | | | | | | | |
| 3088.. 3102 | 0C 10 0C 1E | W | L2 3 rd .. 31 st | | | | | | | | | | | |
| 3103.. 3117 | 0C 1F 0C 2D | W | L3 Harmonics | | | | | | | | | | | |
| 3118.. 3132 | 0C 2E 0C 3C | W | L1 Current | | | | | | | | | | | |
| 3133.. 3147 | 0C 3D 0C 4B | W | L2 3 rd .. 31 st | Unsigned 16bit integer * 0.1 . Unit % Exp.: 100 * 0.1 = 10.0% | | | | | | | | | | |
| 3148.. 3162 | 0C 4C 0C 5A | W | L3 Harmonics | | | | | | | | | | | |
| 3163 | 0C 5B | W | L1 | | | | | | | | | | | |
| 3164 | 0C 5C | W | L2 Voltage THD | Unsigned 16bit integer * 0.1 . Unit % Exp.: 100 * 0.1 = 10.0% | | | | | | | | | | |
| 3165 | 0C 5D | W | L3 | | | | | | | | | | | |
| 3166 | 0C 5E | W | L1 | Unsigned 16bit integer * 0.1 . Unit % Exp.: 100 * 0.1 = 10.0% | | | | | | | | | | |
| 3167 | 0C 5F | W | L2 Current THD | | | | | | | | | | | |
| 3168 | 0C 60 | W | L3 | | | | | | | | | | | |
| 3169.. 3213 | 0C 61 0C 8D | | Controller Settings | | | | | | | | | | | |
| 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 | | | | | | | | | | | | | |
| 0 | EPC | | | | | | | | | | | | | |
| 1 | EBE | | | | | | | | | | | | | |
| 2 | MDL | | | | | | | | | | | | | |
| 3 | ESK | | | | | | | | | | | | | |
| 3215.. 3217 | 0C 8F 0C 91 | | | | | | | | | | | | | |
| 3218 | 0C 92 | W | Number of Harmonics | Unsigned 16bit integer * 2 + 1 . Unit 1 Exp.: 7 * 2 + 1 = 15 → Measuring 3..15 Harmonic | | | | | | | | | | |
| 3219.. 3226 | 0C 93 0C 9A | | | | | | | | | | | | | |
| 3226 | 0C 9A | WW | L1 Timestamp | <table border="1"> <thead> <tr> <th>Bit</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0 .. 16</td> <td>Time in seconds per Day (0 .. 86399)</td> </tr> <tr> <td>17 .. 21</td> <td>Day</td> </tr> <tr> <td>22 .. 25</td> <td>Month</td> </tr> <tr> <td>26 .. 31</td> <td>Year + 2000 (Exp: 10 → 2010)</td> </tr> </tbody> </table> | Bit | Description | 0 .. 16 | Time in seconds per Day (0 .. 86399) | 17 .. 21 | Day | 22 .. 25 | Month | 26 .. 31 | Year + 2000 (Exp: 10 → 2010) |
| Bit | Description | | | | | | | | | | | | | |
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| 17 .. 21 | Day | | | | | | | | | | | | | |
| 22 .. 25 | Month | | | | | | | | | | | | | |
| 26 .. 31 | Year + 2000 (Exp: 10 → 2010) | | | | | | | | | | | | | |
| 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 | | | | | | | | | | | |

| | | | | <i>Bit</i> | <i>Description</i> | | | | | | | | | | | | |
|-----------|-------|-----------|-------|-------------------------------------|--|-----------|-------|-----------|-------|--------|------|--------|------|--------|-----|--------|-------|
| 3250 | 0C B2 | WW | L1 | Timestamp | 0 .. 16 Time in seconds per Day (0 .. 86399) 17 .. 21 Day 22 .. 25 Month 26 .. 31 Year + 2000 (Exp: 10 → 2010) | | | | | | | | | | | | |
| 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 Exp.: 230 = 230V | | | | | | | | | | | | |
| 3277 | 0C CD | W | L2 | | | | | | | | | | | | | | |
| 3278 | 0C CE | W | L3 | | | | | | | | | | | | | | |
| 3279 | 0C CF | W | L1 | Maximum Voltage | Unsigned 16bit integer. Unit V Exp.: 230 = 230V | | | | | | | | | | | | |
| 3280 | 0C D0 | W | L2 | | | | | | | | | | | | | | |
| 3281 | 0C D1 | W | L3 | | | | | | | | | | | | | | |
| 3282 | 0C D2 | W | L1 | Maximum Current | Unsigned 16bit integer. Unit A Exp.: 100 = 100V | | | | | | | | | | | | |
| 3283 | 0C D3 | W | L2 | | | | | | | | | | | | | | |
| 3284 | 0C D4 | W | L3 | | | | | | | | | | | | | | |
| 3285 | 0C D5 | W | | Maximum 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 Exp.: 1000 * MPSF = 10000var (If MPSF = 10) | | | | | | | | | | | | |
| 3287 | 0C D7 | W | L2 | | | | | | | | | | | | | | |
| 3288 | 0C D8 | W | L3 | | | | | | | | | | | | | | |
| 3289 | 0C D9 | | | | | | | | | | | | | | | | |
| 3290 | 0C DA | W | L1 | Maximum Active power | Unsigned 16bit integer. Unit W Exp.: 1000 * MPSF = 10000W (If MPSF = 10) | | | | | | | | | | | | |
| 3291 | 0C DB | W | L2 | | | | | | | | | | | | | | |
| 3292 | 0C DC | W | L3 | | | | | | | | | | | | | | |
| 3293 | 0C DD | | | | | | | | | | | | | | | | |
| 3294 | 0C DE | W | L1 | Maximum Apparent power | Unsigned 16bit integer. Unit VA Exp.: 1000 * MPSF = 10000VA (If MPSF = 10) | | | | | | | | | | | | |
| 3295 | 0C DF | W | L2 | | | | | | | | | | | | | | |
| 3296 | 0C E0 | W | L3 | | | | | | | | | | | | | | |
| 3297 | 0C E1 | | | | | | | | | | | | | | | | |
| 3298 | 0C E2 | W | | Maximum Temperature | Signed 16bit integer. Unit °C. Examples: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Hex value</th> <th>Temp.</th> <th>Hex value</th> <th>Temp.</th> </tr> </thead> <tbody> <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> </tbody> </table> | Hex value | Temp. | Hex value | Temp. | 0h000A | 10°C | 0hFFFF | -1°C | 0h0001 | 1°C | 0hFFF6 | -10°C |
| Hex value | Temp. | Hex value | Temp. | | | | | | | | | | | | | | |
| 0h000A | 10°C | 0hFFFF | -1°C | | | | | | | | | | | | | | |
| 0h0001 | 1°C | 0hFFF6 | -10°C | | | | | | | | | | | | | | |

| | | | | | | |
|--------|----|----|----|-----|---|--|
| 3299 | 0C | E3 | W | L1 | | |
| 3300 | 0C | E4 | W | L2 | Maximum Voltage THD | Unsigned 16bit integer * 0.1 . Unit % Exp.: 100 * 0.1 = 10.0% |
| 3301 | 0C | E5 | W | L3 | | |
| 3302 | 0C | E6 | W | L1 | | |
| 3303 | 0C | E7 | W | L2 | Maximum Current THD | Unsigned 16bit integer * 0.1 . Unit % Exp.: 100 * 0.1 = 10.0% |
| 3304 | 0C | E8 | W | L3 | | |
| 3305 | 0C | E9 | WW | IND | Reactive Energy | Unsigned 32bit long. Unit kvarh Exp.: 100 = 100kvarh |
| 3307 | 0C | EB | WW | CAP | | |
| 3309 | 0C | ED | WW | + | Energy | Unsigned 32bit long. Unit kWh Exp.: 100 = 100kWh |
| 3311 | 0C | EF | WW | - | | |
| 3841.. | 0F | 01 | W | L1 | Voltage | Unsigned 16bit integer * 0.1 . Unit % Exp.: 100 * 0.1 = 10.0% |
| 3850 | 0F | 0A | W | L2 | | |
| 3851.. | 0F | 0B | W | L2 | 33 rd .. 51 st Harmonics | |
| 3860 | 0F | 14 | W | L2 | | |
| 3861 | 0F | 15 | W | L3 | | |
| 3870 | 0F | 1E | W | L3 | | |
| 3871.. | 0F | 1F | W | L1 | Current | |
| 3880 | 0F | 28 | W | L1 | | |
| 3881.. | 0F | 29 | W | L2 | 33 rd .. 51 st Harmonics | |
| 3890 | 0F | 32 | W | L2 | | |
| 3891 | 0F | 33 | W | L3 | | |
| 3900 | 0F | 3C | W | L3 | | |

Energy values, new at devices with firmware version 1.10

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 1.8

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 Powerfactor | 32bit single Unit 1 Range: 0... 1, positive values → ind, negative values → cap |
| 8032 | 1F 60 | WW | L2 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 | 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> </tbody> </table> | Valid values | Start | End | Step width | 1 .. 50 | 5A | 250A | 5A | | | | | | | | | | | | |
| Valid values | Start | End | Step width | | | | | | | | | | | | | | | | | | | | | |
| 1 .. 50 | 5A | 250A | 5A | | | | | | | | | | | | | | | | | | | | | |
| 3174 | 102 | H | L2 Primary current converter | <table border="1"> <tbody> <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> | 51 .. 175 | 260A | 1.5kA | 10A | 176 .. 185 | 1.55kA | 2kA | 50A | 186 .. 245 | 2.1kA | 8kA | 100A | 246 .. 255 | 8.5kA | 13kA | 500A | | | | |
| | | 51 .. 175 | 260A | 1.5kA | 10A | | | | | | | | | | | | | | | | | | | |
| 176 .. 185 | 1.55kA | 2kA | 50A | | | | | | | | | | | | | | | | | | | | | |
| 186 .. 245 | 2.1kA | 8kA | 100A | | | | | | | | | | | | | | | | | | | | | |
| 246 .. 255 | 8.5kA | 13kA | 500A | | | | | | | | | | | | | | | | | | | | | |
| 3175 | 103 | H | Secondary current converter | Valid values: 0 = 1A / 1 = 5A | | | | | | | | | | | | | | | | | | | | |
| | | L | Measuring voltage L-L | Byte, valid range: 10 .. 152 - Unit 5V Range: 50V .. 760V E.g.: Byte * 5V = Measuring voltage → 100 * 5V = 500V | | | | | | | | | | | | | | | | | | | | |
| 3176 | 104 | H | 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 | 79kV | 1000V |
| | | Valid values | Start | End | Step width | | | | | | | | | | | | | | | | | | | |
| 0 | not used | | | | | | | | | | | | | | | | | | | | | | | |
| 1 .. 59 | 410 | 1kV | 10V | | | | | | | | | | | | | | | | | | | | | |
| 60 .. 189 | 1.1kV | 14kV | 100V | | | | | | | | | | | | | | | | | | | | | |
| 190 .. 255 | 15kV | 79kV | 1000V | | | | | | | | | | | | | | | | | | | | | |
| 3177 | 105 | L | Maximal harmonic ordinal number | Byte, valid range: 3 .. 25 - Unit 1 Range: 7 th – 51 th harmonic E.g.: Byte = 7 → 2 * 7 + 1 = 15 th | | | | | | | | | | | | | | | | | | | | |
| | | H | Clock – Hour | Not used | | | | | | | | | | | | | | | | | | | | |
| 3178 | 106 | L | Clock – Minute | Not used | | | | | | | | | | | | | | | | | | | | |
| | | H | Calendar – Day | Not used | | | | | | | | | | | | | | | | | | | | |
| 3179 | 107 | L | Calendar – Month | Not used | | | | | | | | | | | | | | | | | | | | |
| | | H | Calendar – Year | Not used | | | | | | | | | | | | | | | | | | | | |
| 3180 | 108 | L | Frequency range | Byte, valid range: 0..2 0= 42..80Hz; 1= 50Hz; 2= 60Hz | | | | | | | | | | | | | | | | | | | | |
| | | H | Display contrast | Byte, valid range: 1..10 | | | | | | | | | | | | | | | | | | | | |
| 3181 | 109 | L | Basic settings | Not used (0) | | | | | | | | | | | | | | | | | | | | |
| | | H | 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 | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | EPC | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | EBE | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | MDL | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | ESK | | | | | | | | | | | | | | | | | | | | | | | |
| | | L | Not used | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | |
|----------------|--------------|---|----------------------------|--|---|--------------------|-------------------|--------------------|
| 3182 | 110 | | Not used | | | | | |
| 3183 | 111 | H | Function | <i>Byte</i> | <i>Function</i> | <i>Byte</i> | <i>Function</i> | |
| | | L | Relays | 0 | OFF | 20 | Active power Sum | |
| 3184 | 112 | H | Trigger level ON | 1 | Voltage L1-N | 21 | Apparent power L1 | |
| | | L | 1 | Trigger level OFF | 2 | Voltage L2-N | 22 | Apparent power L2 |
| 3185 | 113 | H | Delay | 3 | Voltage L3-N | 23 | Apparent power L3 | |
| | | L | 2 | Function | 4 | Volt. asymmetrical | 24 | Apparent power Sum |
| 3186 | 114 | H | Relays | 5 | Current L1 | 25 | Frequency L1 | |
| | | L | 2 | Trigger level ON | 6 | Current L2 | 26 | Frequency L2 |
| 3187 | 115 | H | 1 | Trigger level OFF | 7 | Current L3 | 27 | Frequency L3 |
| | | L | 2 | Delay | 8 | Cur. asymmetrical | 28 | Temperature |
| 3188 | 116 | H | 2 | Function | 9 | cos phi L1 | 29 | THD-V L1 |
| | | L | 3 | Trigger level ON | 10 | cos phi L2 | 30 | THD-V L2 |
| 3189 | 117 | H | 3 | Trigger level OFF | 11 | cos phi L3 | 31 | THD-V L3 |
| | | L | 4 | Delay | 12 | cos phi Sum | 32 | THD-V L1..L3 max |
| 3190 | 118 | H | 4 | Function | 13 | Reactive power L1 | 33 | THD-I L1 |
| | | L | 5 | Trigger level ON | 14 | Reactive power L2 | 34 | THD-I L2 |
| 3191 | 119 | H | 5 | Trigger level OFF | 15 | Reactive power L3 | 35 | THD-I L3 |
| | | L | 4 | Delay | 16 | Reactive power Sum | 36 | THD-I L1..L3 max |
| 3192 | 120 | H | 5 | Function | 17 | Active power L1 | 37 | ON |
| | | L | 5 | Trigger level ON | 18 | Active power L2 | | |
| 3193 | 121 | H | 5 | Trigger level OFF | 19 | Active power L3 | | |
| | | L | 5 | Delay | | | | |
| 3194.. 3202 | 122.. 130 | H | 4 | Trigger level OFF | Trigger ON / OFF: Byte, valid range: 0..200, Unit: 0.5%, +/-1% of max. value | | | |
| | | L | 5 | Delay | Delay: Byte, valid range: 1..255, Unit: 1sec, E.g.: Byte = 10 → 10 sec | | | |
| 3191 | 119 | H | Transistor output | Byte, Valid range: 0..5 | | | | |
| | | L | Energy scaling factor | <i>Byte</i> | <i>Function</i> | | | |
| 3192 | 120 | H | Function of input 1 | 0 | OFF | | | |
| | | L | Function of input 2 | 1 | Reactive power IND, Unit: kvarh (+) | | | |
| 3193 | 121 | H | Function of input 3 | 2 | Reactive power CAP, Unit: kvarh (-) | | | |
| | | L | Function of input 4 | 3 | Active power, Unit: kWh (+) | | | |
| 3203 | 131 | H | REC – Interval | 4 | Active power supply, Unit: kWh (-) | | | |
| | | L | REC – Mode | 5 | ON | | | |
| 3204 | 132 | H | REC – Starting time hour | Byte, Valid range: 0..2 | | | | |
| | | L | REC – Starting time minute | <i>Byte</i> | <i>Function</i> | | | |
| 3205 | 133 | H | REC – Starting time day | 0 | 1Impulse per 1 kWh or 1 kvarh | | | |
| | | L | REC – Starting time month | 1 | 1Impulse per 10 kWh or 10 kvarh | | | |
| 3192 | 120 | H | Function of input 1 | 2 | 1Impulse per 100 kWh or 100 kvarh | | | |
| | | L | Function of input 2 | 0= No function, 1= 2 nd energy meter, 3= operating time counter | | | | |
| 3193 | 121 | H | Function of input 3 | 0= No function, 1= operating time counter | | | | |
| | | L | Function of input 4 | | | | | |
| 3203 | 131 | H | REC – Interval | Byte, valid values: 0= 1sec, 1= 10sec, 2= 60sec, 3= 15min | | | | |
| | | L | REC – Mode | Byte, valid values: 0= Stop, 1= Start, 2= Timer, 3= Series | | | | |
| 3204 | 132 | H | REC – Starting time hour | Unsigned 8bit byte. Valid values: 0 .. 24 – Unit hr | | | | |
| | | L | REC – Starting time minute | Unsigned 8bit byte. Valid values: 1 .. 59 – Unit min | | | | |
| 3205 | 133 | H | REC – Starting time day | Unsigned 8bit byte. Valid values: 1 .. 31 – Unit d | | | | |
| | | L | REC – Starting time month | Unsigned 8bit byte. Valid values: 1 .. 12 – Unit mm | | | | |

| 3206 | 134 | H | REC – Starting time year | Unsigned 8bit byte. Valid values: 00 .. 99 – Unit yr Add 2000 to get real Year. exp: 10 = 2010 | | | | | | | | | | | |
|--------------|----------------------|---|-----------------------------------|---|--------------|-------|--------|----------------------|--------|----------------|--------|----------------------|--------|--------------|--|
| | | L | REC – Stop time hour | Unsigned 8bit byte. Valid values: 0 .. 24 – Unit hr | | | | | | | | | | | |
| 3207 | 135 | H | REC – Stop time minute | Unsigned 8bit byte. Valid values: 1 .. 59 – Unit min | | | | | | | | | | | |
| | | L | REC – Stop time day | Unsigned 8bit byte. Valid values: 1 .. 31 – Unit d | | | | | | | | | | | |
| 3208 | 136 | H | REC – Stop time month | Unsigned 8bit byte. Valid values: 1 .. 12 – Unit mm | | | | | | | | | | | |
| | | L | REC – Stop time year | Unsigned 8bit byte. Valid values: 00 .. 99 – Unit yr Add 2000 to get real Year. exp: 10 = 2010 | | | | | | | | | | | |
| | 137.. 199 | | | | | | | | | | | | | | |
| - | 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>Max. grid parameters</td> </tr> <tr> <td>0x5555</td> <td>Operation time</td> </tr> <tr> <td>0xAAAA</td> <td>Max. grid parameters</td> </tr> <tr> <td>0xCCCC</td> <td>Energy meter</td> </tr> </tbody> </table> | Valid values | Reset | 0x3333 | Max. grid parameters | 0x5555 | Operation time | 0xAAAA | Max. grid parameters | 0xCCCC | Energy meter | |
| Valid values | Reset | | | | | | | | | | | | | | |
| 0x3333 | Max. grid parameters | | | | | | | | | | | | | | |
| 0x5555 | Operation time | | | | | | | | | | | | | | |
| 0xAAAA | Max. grid parameters | | | | | | | | | | | | | | |
| 0xCCCC | Energy meter | | | | | | | | | | | | | | |

History

V1.0

- Initial Version

V1.1

- Update read-register 3177... 3182

- Update write-register 105...1110

V1.2

- Add new register range (8000) with floating point numbers

V1.3

- Add new register range (6000) with Energy in kW/Kvar and ws/vars