MODBUS- Adress-table BR7000-I version 2.4 (issue 01/14)

Functioncode 6

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
				PROGRAM MEMORY
0	1	0	0…9	**LANGUAGE** 0 = DEUTSCH 1 = ENGLISH 2 = ESPANOL 3 = NEDERLANDS 4 = RUSSISCH 5 = CZECH 6 = POLSKI 7 = FRENCH 8 = PORTUGUES 9 = TÜRKCE
0	2	0	1…255	**Current transformer - primary** 1…..50 = 5…250A (5A steps) 51…175 = 260...1500A (10A steps) 176…185 = 1550....2000A (50A steps) 186…245 = 2100…8000A (100A steps) 246…255 = 8500…13000A (500A steps)
0	3	0	0…1	**Current transformer - secondary** 0 = 1A 1 = 5A
0	4	0	1…13	**END-STOPP**
0	5	0	1…21	**CONTROL SERIES** 1 = ControlSeries 1: 1 , 1 , 1 , 1 , 1 , 1 , 1 , 1 , 1 , 1 , 1 , 1 2 = ControlSeries 2: 1 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 3 = ControlSeries 3: 1 , 2 , 3 , 3 , 3 , 3 , 3 , 3 , 3 , 3 , 3 , 3 4 = ControlSeries 4: 1 , 2 , 3 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 5 = ControlSeries 5: 1 , 2 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 6 = ControlSeries 6: 1 , 2 , 3 , 6 , 6 , 6 , 6 , 6 , 6 , 6 , 6 , 6 7 = ControlSeries 7: 1 , 2 , 4 , 8 , 8 , 8 , 8 , 8 , 8 , 8 , 8 , 8 8 = ControlSeries 8: 1 , 1 , 1 , 1 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 9 = ControlSeries 9: 1 , 1 , 1 , 1 , 1 , 6 , 6 , 6 , 6 , 6 , 6 , 6 10 = ControlSeries 10: 1 , 1 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 11 = ControlSeries 11: 1 , 1 , 2 , 2 , 2 , 4 , 4 , 4 , 4 , 4 , 4 , 4 12 = ControlSeries 12: 1 , 1 , 2 , 2 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 13 = ControlSeries 13: 1 , 1 , 1 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 14 = ControlSeries 14: 1 , 1 , 2 , 3 , 3 , 3 , 3 , 3 , 3 , 3 , 3 , 3 15 = ControlSeries 15: 1 , 1 , 2 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 16 = ControlSeries 16: 1 , 1 , 2 , 4 , 8 , 8 , 8 , 8 , 8 , 8 , 8 , 8 17 = ControlSeries 17: 1 , 2 , 2 , 3 , 3 , 3 , 3 , 3 , 3 , 3 , 3 , 3 18 = ControlSeries 18: 1 , 2 , 3 , 4 , 4 , 8 , 8 , 8 , 8 , 8 , 8 , 8 19 = ControlSeries 19: 1 , 2 , 2 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 20 = ControlSeries 20: 1 , 2 , 2 , 2 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 21 = ControlSeries 21: CONTROL-SERIES EDITOR

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
0	6	0	0…3	**CONTROL PRINCIPLE** 0 = Sequential connection 1 = Loop connection 2 = Intelligent loop connection 3 = Combined choke
0	7	0	0…255	**POWER 1st STEP (pre-decimal point)** 0…255 = 0….255 kvar / 0….2550 kvar / 0…25500 kvar
0	8	0	0…99	**POWER 1st STEP (decimal place)** 0…99 = 0…0.99 kvar
0	9	0	10….190	**TARGET cos-phi** 10 = 0.10 CAP 100 = 1.00 190 = 0.10 IND
0	10	0	0…99	**MEASURING VOLTAGE** 0 = 30V (in steps of 5V) 99 = 525V
0	11	0	0…255	**VOLTAGE CONVERTER** 0 = without V-converter 1…77 = 230… 990V (10V steps) 78…187 = 1000…11000V (100V steps) 188…252 = 12kV…76kV (1000V steps) 253 = 110kV 254 = 220kV 255 = 380kV
0	12	0	1…138	**CONNECTING TIME** 1…120 = 1…120 s 121…138 = 3…20min
0	13	0	1…138	**DISCONNECTING TIME** 1…120 = 1…120 s 121…138 = 3…20min
0	14	0	1…138	**DISCHARGE TIME** 1…120 = 1…120 s 121…138 = 3…20min
0	15	0	40…85	**ALARM TEMPERATURE** 40…85 = 40…85°C

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
0	16	0	0…10	**ALARM RELAY** 0 = 13. STEP 1 = OFF 2 = ERROR 3 = ERROR inverse 4 = FAN 5 = DELIVERY 6 = UNDERCURRENT 7 = HARMONICS 8 = OVERCOMPENSATED 9 = UNDERCOMPENSATED 10 = NUMBER OF SWITCHING 11 = MODBUS-ERROR 12 = MMI-ERROR 13 = C-DEFECT (capacitor)
0	17	0	15…70	**FAN TEMPERATURE** 15…70 = 15…70°C
0	18	0	5…255	**THD-V-THRESHOLD** 0…255 = 0.1….25.5% / 0 = OFF
0	19	0	5…255	**THD-I-THRESHOLD** 0…255 = 0.1….25.5% / 0 = OFF
0	20	0	0…2	**HARMONICS** 0 = 3. 5. 7. …19. harmonic 1 = 3. 5. 7. ….33. harmonic 2 = 2. 3. 4. … 17. harmonic
0	21	0	5…10	**CONTRAST**
				2. PARAMETER SET
0	22	0	1…255	**CURRENT TRANSFORMER primary** Compare table adress 2
0	23	0	0…1	**CURRENT TRANSFORMER secondary** Compare table adress 3
0	24	0	1…13	**END-STOPP**
0	25	0	1…21	**CONTROL SERIES** Compare table adress 5
0	26	0	0…3	**CONTROL PRINCIPLE** Compare table adress 6

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
0	27	0	0…255	**POWER 1st STEP (pre decimal point)** 0…255 = 0….255 kvar / 0….2550 kvar
0	28	0	0…99	**POWER 1st STEP (decimal place)** 0…99 = 0…0.99 kvar
0	29	0	10….190	**TARGET cos-phi** 10 = 0.10 CAP 100 = 1.00 190 = 0.10 IND
0	30	0	1…138	**CONNECTING TIME** 1…120 = 1…120 s 121…138 = 3…20min
0	31	0	1…138	**DISCONNECTING TIME** 1…120 = 1…120 s 121…138 = 3…20min
0	32	0	1…138	**DISCHARGE TIME** 1…120 = 1…120 s 121…138 = 3…20min

Only for manufacturer:

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
0	33	0	0…5	**PICTURE (for manufacturer only)** 0 = EPC 1 = EBE 2 = NEU 3 = MOL 4 = ESK 5 = CHI

REMOTE-REGISTER:

Functioncode 6:

FUNCTION	Adress	Data HIGH-BYTE	Data LOW-BYTE
REMOTE-REGISTER	40	Number of switch.stages 1…4 (4 = factory setting EXPERT-MODE)	0 = no remote 1 = switching off of stages 2 = stopp 3 = switching ON of stages

SLAVE-MODE-REGISTER: (SLAVE-HYBRID, SLAVE-MODE-FUNCTION)

Delete UNDERCURRENT message

SEND	Adress	Data HIGH-BYTE	Data LOW-BYTE
REACTIVE POWER-TRANSFER-REGISTER	80	Difference-reactive power in kvar	Difference-reactive power in kvar

ANSWER	BYTE 3	BYTE 4	BYTE 5	BYTE 6
	H-part Difference-reactive power in kvar	L-part Difference-reactive power in kvar	ERROR-REGISTER *)	actual system-power in %

*)
BIT 0 = external input
BIT 1 = OVERVOLTAGE
BIT 2 = OVERCOMPENSATED
BIT 3 = UNDERCOMPENSATED
BIT 4 = HARMONICS
BIT 5 = ALARM-TEMPERATURE
BIT 6 = UNDERCURRENT
BIT 7 = UNDERVOLTAGE

Creating UNDERCURRENT Message

SEND	Adress	Data HIGH-BYTE	Data LOW-BYTE
REACTIVE POWER-TRANSFER-REGISTER	81	Difference-reactive power in kvar	Difference-reactive power in kvar

ANSWER	BYTE 3	BYTE 4	BYTE 5	BYTE 6
	H-part Difference-reactive power in kvar	L-part Difference-reactive power in kvar	ERROR-REGISTER *)	actual system-power in %

MODBUS-TARGET-COSPHI-REGISTER: temp. (RAM) TARGET-cosphi

Refresh-time : < 4 Minuten

FUNCTION	Adress	Data HIGH-BYTE	Data LOW-BYTE
TARGET-cosphi * 100	120	H-part TARGET-cosphi	L-part TARGET-cosphi

example: 100 = 1.00
90 = 0.90 IND
-90 = 0.90 CAP

RESET-REGISTER:

FUNCTION	Adress	Data HIGH-BYTE	Data LOW-BYTE
RESET-REGISTER	200	H = 51	L = 51 Reset of capacitor operation time 16 BIT-value = 13107
	200	H = 85	L = 85 Error memory RESET 16 BIT-value = 21845
	200	H = 170	L = 170 Max. value RESET 16 BIT-value = 43690
	200	H = 204	L = 204 Reset number of switchings 16 BIT-value = 52428

EXPERT MODE 1 (from adress 257 onwards)

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
				EXPERT MODE 1
1	1	0	-	- no function
1	2	0	-	- no function
1	3	0	-	- no function
1	4	0	-	- no function
1	5	0	-	- no function
1	6	0		- no function
1	7	0	-	- no function
1	8	0	1…255	**INTEGRATION TIME** 1…255 = 1…255 s
1	9	0	1….255	**Max. Switching power** 1…255 = 1…255 times power of C1
1	10	0	50…200	**Switch. trigger IND (Alpha-value)** 50…200 = 0.5…2
1	11	0	20…70	**Switch. trigger CAP (Beta-value)** 20…70 = 0.2…0.7
1	12	0	0…2	**KEY LOCK** 0 = no lock 1 = key lock 2 = key lock after 24 h automatically
1	13	0	1…255	**SWITCHING OPERATION WARNING** 1…255 = 10 000…2 550 000 operations
1	14	0	0…11	**FAST DISCHARGE** 0 = NO 1…11 = C1…C11
1	15	0	1…255	**FAST DISCHARGE TIME** 1…255 = 1…255 s
1	16	0	1…3	**PHASE CURRENT TRANSFORMER** 1…3 = L1…L3

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
1	17	0	0….11	**PHASE MEASURING VOLTAGE** 0 = 0° 1 = 330° 2 = 300° 3 = 270° 4 = 240° 5 = 210° 6 = 180° 7 = 150° 8 = 120° 9 = 90° 10 = 60° 11 = 30°
1	18	0	0…1	**CAPACITOR TEST** 0 = NO 1 = YES
1	19	0	10…100	**ERROR TOLERANCE positive variance** 10…100 = +10%....+100%
1	20	0	10…100	**ERROR TOLERANCE negative variance** 10…100 = -10%....-100%
1	21	0	2…9	**TEST ATTEMPTS**
1	22	0	0…1	**POWER 1st STAGE** 0 = 0……255kvar 1 = 0…. 2550kvar 2 = 0…25500kvar
1	23	0	0…5	**CONTROL (3-phase / 1-phase)** 0 = 1-phase CAP 1 = 3-phase CAP 2 = 1-phase IND 3 = 3-phase IND 4 = 1-phase IND / CAP 5 = 3-phase IND / CAP
1	24	0	0…3	**DELIVERY** 0 = No influence on stages 1 = switching off of stages 2 = all stages OFF 3 = 2nd cos-phi

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
1	25	0	0…1	**DISPLAY** 0 = cos-phi 1 = tan-phi
1	26	0	0…1	**CHANGING PASSWORD** 0 = NO 1 = YES
1	27	0	0….35	**CODE DIGIT 1** 0…35 = 0…9 / A….Z
1	28	0	0….35	**CODE DIGIT 2** 0…35 = 0…9 / A….Z
1	29	0	0….35	**CODE DIGIT 3** 0…35 = 0…9 / A….Z
1	30	0	0….35	**CODE DIGIT 4** 0…35 = 0…9 / A….Z
1	31	0	0…2	**ERROR-BACKLIGHT** 0 = OFF 1 = WHITE 2 = RED 3 = PINK

INTERFACE (from adress 513 on)

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
2	1	0	1…14	**MESSAGE-RELAY** 1 = OFF 2 = FAN 3 = DELIVERY 4 = UNDERCURRENT 5 = HARMONICS 6 = OVERCOMPENSATED 7 = UNDERCOMPENSATED 8 = NUMBER OF SWITCHING 9 = MODBUS-ERROR 10 = MMI-FEHLER 11 = C-DEFECT (capacitor error) 12 = FIX-STAGE OUTPUT 13 = ERROR (alarm-relay) 14 = ERROR inverse (alarmrelay inverse)
2	2	0	15…70	**FAN-TEMPERATURE** 15…70 = 15°C….70°C
2	3	0	0…5	**EXTERNAL INPUT** 0 = NO 1 = 2nd PARAMETER-SET 2 = EXTERNAL ERROR 3 = Q-OFFSET 4 = COUPLING OPERATION IN PARALLEL 5 = COUPLING OPERATION SERIAL 6 = INPUT FIX-STAGE (display only)
2	4	0	1…255	**POWER FIX-STAGE** 1…255 = 1…255 x C1 (1st step)
2	5	0	0…23	**CLOCK-HOUR**
2	6	0	0…59	**CLOCK-MINUTE**
2	7	0	1…31	**DATE-DAY**
2	8	0	1…12	**DATE-MONTH**
2	9	0	14…99	**DATE-YEAR**
2	10	0	0…8	**PROTOCOL** 0 = OFF 1 = MODBUS RTU with check (KTR) 2 = MODBUS RTU 3 = ASCII 4 = MASTER MMI (capacitor current monitoring) 5 = SLAVE HYBRID 6 = SLAVE MODE 7 = MASTER MODE

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
2	11	0	0…20	**BAUD RATE** 0 = 9600 / NONE 1 = 19200 / NONE 2 = 38400 / NONE 3 = 57600 / NONE 4 = 115200 / NONE 5 = 250000 / NONE 6 = 256000 / NONE '---------- 7 = 9600 / ODD 8 = 19200 / ODD 9 = 38400 / ODD 10 = 57600 / ODD 11 = 115200 / ODD 12 = 250000 / ODD 13 = 256000 / ODD '---------- 14 = 9600 / EVEN 15 = 19200 / EVEN 16 = 38400 / EVEN 17 = 57600 / EVEN 18 = 115200 / EVEN 19 = 250000 / EVEN 20 = 256000 / EVEN
2	12	0	1…255	**ADRESS (MODBUS)**
2	13	0	1…9	**NUMBER OF MMI**
2	14	0	0…2	**MEASURING DEVICE TYPE** 0 = MMI 6000 1 = MMI 7000 2 = UCM 5
2	15	0	1…4	**NUMBER OF BR7000-I (SLAVE)**
2	16	0	1…255	**ACSII-TRANSMIT. INTERVAL** 1…255 = 1…255 s
2	17	0	0…5	**ASCII-SEPARATOR** 0 = HT 1 = LF/CR 2 = SP 3 = CR/LF 4 = MINUS 5 = CSV

EXPERT-MODE 2 (from adress 769 on)

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
3	1	0	-	- no function
3	2	0	-	- no function
3	3	0	-	- no function
3	4	0	-	- no function
				ERROR STATUS 0 = OFF 1 = ON 2…255 = delay time in seconds
3	5	0	*	0/1/2…255 - MEAS. VOLTAGE
3	6	0	*	0/1/2…255 - OVERVOLTAGE
3	7	0	*	0/1/2…255 - OVERCOMPENSATED
3	8	0	*	0/1/2…255 - UNDERCOMPENSATED
3	9	0	*	0/1/2…255 - HARMONICS
3	10	0	*	0/1/2…255 - OVER TEMPERATURE
3	11	0	*	0/1/2…255 - OVERCURRENT
3	12	0	*	0/1/2…255 - UNDERVOLTAGE
3	13	0	*	0/1/2…255 - NUMBER OF SWITCHINGS
3	14	0	*	0/1/2…255 - UNDERCURRENT
3	15	0	*	0/1/2…255 - MODBUS-ERROR
3	16	0	*	0/1/2…255 - MMI-ERROR
3	17	0	*	0/1/2…255 - MODBUS-REMOTE
3	18	0	*	0/1/2…255 - CURRENT < ? (cap. current monitoring)
3	19	0	*	0/1/2…255 - BUS-ERROR-EXTERN
3	20	0	*	0/1/2…255 - C-DEFECT
3	21	0	*	0/1/2…255 - Current > 0 (capacitor current monitoring)
3	22	0	*	0/1/2…255 - OVERLOAD system (cap.current monitoring
3	23	0	*	0/1/2…255 - EXTERNAL-ERROR
3	24	0	*	0/1/2…255 - C-DEFECT-OFF (cap. current monitoring)
3	25	0	*	0/1/2…255 - AUTO-INIT-ERROR
3	26	0	*	**ALARMRELAY – DELAY-TIME** 1…255 = 1…255 minutes
3	27	0	*	**UNDERVOLTAGE (Trigger)** 20…95 = 20…95 %
3	28	0	*	**OVERVOLTAGE (Trigger)** 105…140 = 105…140 %
3	29	0	*	**MEAS. FREQUENCY** 0 = 42… 80 Hz 1 = 50 Hz 2 = 60 Hz 3 = 42…160 Hz 4 = 16,7 Hz