MODBUS BR7001-TH-S Functionscode 6 ab V4.9

18.03.21

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
0	1	0	0…9	**LANGUAGE** 0 = DEUTSCH 5 = CZECH 1 = ENGLISH 6 = POLSKI 2 = ESPANOL 7 = FRENCH 3 = NEDERLANDS 8 = PORTUGUES 4 = RUSSISCH 9 = TÜRKCE
0	2	0	0…4	**CONTROL-MODE** 0 = DYNAMIC 1…12 Transistor-Outputs 1 = HYBRID 1…12 Tr. / 1…12 Relais-Out. 2 = TSM-BUS 1…32 TSM-LC-S 3 = TSM-BUS/HYBRID 1…12 TSM-LC-S 1…12 Rel.
0	3	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	4	0	0…1	**Current transformer - secondary** 0 = 1A 1 = 5A
0	5	0	1…32	**END-STOPP (Dynamic-Stages)** 1…12 = DYNAMISCHER BETRIEB 1…12 = HYBRID-BETRIEB 1…32 = TSM-BUSSYSTEM 1…32 = TSM-BUSSYSTEM/HYBRID

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
0	6	0	1…21	**CONTROL SERIES (Dynamic-Stages)** 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
0	7	0	0..2	**CONTROL PRINCIPLE (Dynamic-Stages)** 0 = Sequential connection 1 = Loop connection 2 = Intelligent
0	8	0	0…255	**POWER 1st STEP (Integer) (Dynamic)** 0…255 = 0….255 kvar / 0….2550 kvar / 0…25500 kvar
0	9	0	0…99	**POWER 1st STEP (decimal place) (Dynamic-Stages)** 0…99 = 0…0.99 kvar 128 = 0…..2550kvar 129 = 0…25500kvar
0	10	0	10…190	**TARGET cos-phi** 10 = 0.10 CAP 100 = 1.00 190 = 0.10 IND

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
0	11	0	10…190	**TARGET cos-phi 2 (at external Input / Energy Supply)** 10 = 0.10 CAP 100 = 1.00 190 = 0.10 IND
0	12	0	0…99	**MEASURING VOLTAGE** 0 = 30V (in steps of 5V) 99 = 525V
0	13	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	14	0	0…1	**FREQUENCY** 0 = 50 Hz; 1 = 60 Hz
0	15	0	0…13	**CONNECTING TIME (Dynamic-Stages)** 0…13 = 20…1000ms
0	16	0	0…13	**DISCONNECTING TIME (Dynamic-Stages)** 0…13 = 20…1000ms
0	17	0	0…13	**DISCHARGE TIME (Dynamic-Stages)** 0…13 = 20…1000ms
0	18	0	40…85	**ALARM TEMPERATURE** 40…85 = 40…85°C

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
0	19	0	1…13	**ALARM RELAY** 1 = OFF 2 = ERROR 3 = / ERROR (inverse) 4 = FAN OPTION 5 = ENERGY SUPPLY 6 = UNDERCURRENT 7 = HARMONICS 8 = OVER-COMPENSATED 9 = UNDERCOMPENSATED 10 = NUMBER OF SWITCHING 11 = MODBUS-ERROR 12 = / MODBUS-ERROR (invers) 13 = TSM-ERROR 14 = C-DEFECT
0	20	0	15…70	**FAN TEMPERATURE** 15…70 = 15…70°C
0	21	0	0…255	**THD-V-THRESHOLD** 1…255 = 0.1….25.5% / 0 = OFF
0	22	0	0…255	**THD-I-THRESHOLD** 1…255 = 0.1….25.5% / 0 = OFF
	23	0	1…3	**HARMONICS** 0 = 3. 5. 7. …19. Harmonic 1 = 3. 5. 7. ….33. Harmonic 2 = 2. 3. 4. … 17. Harmonic
0	24	0	0…9	**CONTRAST**
				RELAY-Part (Static-Stages)
0	25	0	1…12	**END-STOPP (Static-Stages)** Compare table address 5
0	26	0	1…21	**CONTROL SERIES (Static-Stages)** Compare table address 106
0	27	0	0…2	**CONTROL PRINCIPLE (Static-Stages)** Compare table address 107
0	28	0	0…255	**POWER 1st STEP (integer) (Static-Stages)** 0…255 = 0….255 kvar / 0….2550 kvar

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
0	29	0	0…99	**POWER 1st STEP (decimal place) (Static-Stages)** 0…99 = 0…0.99 kvar
0	30	0	1…255	**CONNECTING TIME (Static-Stages)** 1…255 = 1…255 s
0	31	0	1…255	**DISCONNECTING TIME (Static-Stages)** 1…255 = 1…255 s
0	32	0	1…255	**DISCHARGE TIME (Static-Stages)** 1…255 = 1…255 s
0	33	0	0…255	**Q-OFFSET** 0…255 = 0 = OFF / 1…255 * Power of 1st Stage

REMOTE-REGISTER:

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

OUTPUT-TEST-REGISTER (Direct access - no stage-management / security)

Outupts	ADDRESS		HIGH-BYTE								LOW-BYTE							
	H	L	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Transistor-Stage	0	50	-	-	-	12	11	10	9	8	7	6	5	4	3	2	1	-
Relay-Stage	0	51	-	-	-	12	11	10	9	8	7	6	5	4	3	2	1	-

ALARM- / MESSAGERELYS-TEST-REGISTER

FUNCTION	ADDRESS		HIGH-BYTE								LOW-BYTE							
	H	L	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Register to set	0	55	-	-	-	-	-	-	-	-	-	-	-	-	-	MR	AR	-
RESET-Register	0	56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

SEND	Address		Data HIGH-BYTE	Data LOW-BYTE
REACTIVE POWER-TRANSFER-REGISTER **RESET** Undercurrent-Message	0	80	Difference-reactive power in kvar	Difference-reactive power in kvar
REACTIVE POWER-TRANSFER-REGISTER **SET** Undercurrent-Message	0	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	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	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

EXPERT-MODE 1

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
				EXPERTENMODE 1
1	5	0	1….255	**max. SWITCH. POWER (dynamic-stages)** 1…255 = 1…255 * Power of 1st Stage
1	6	0	1….255	**max. SWITCH. POWER (static-stages)** 1…255 = 1…255 fache Leistung von C1
1	7	0	50…200	**SWITCH. TRIGGER IND in %** 50…200 = 0.5…2
1	8	0	20…70	**SWITCH. TRIGGER CAP in %** 20…70 = 0.2…0.7
1	9	0	0…2	**KEYLOCK** 0 = NON 1 = Key-Lock 2 = Key-Lock after 24 h automatically
1	10	0	1…255	**SWITCHING OPERATION WARNING** (Static) 1…255 = 10 000…2 550 000 Switching-cycles
1	11	0	50…100	**HYBRID-SYMMETRIE** 50…100 = 50%...100%
1	12	0	1…3	**PHASE SHIFTING Current Transformer** 1…3 = L1…L3
1	13	0	0….11	**PHASE SHIFTING - VOLTAGE** 0 = 0° | 7 = 150° 1 = 330° | 8 = 120° 2 = 300° | 9 = 90° 4 = 270° | 10 = 60° 5 = 210° | 11 = 30° 6 = 180° |

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
1	14	0	0…2	**Max. Power of the 1st STAGE** 0 = 0……255kvar 1 = 0….2550kvar 2 = 0…25500kavr
1	15	0	0…1	**CONTROL** 0 = 1phase IND 1 = 3phase IND
1	16	0	0…3	**ENERGY SUPPLY** 0 = No influence on stages 1 = switch-off 2 = switch off immediately 3 = 2nd target cos phi
1	17	0	0…1	**DISPLAY** 0 = cosphi 1 = tanphi
1	18	0		-
1	19	0	0….35	**CODE NUMBER 1** 0…35 = 0…9 / A….Z
1	20	0	0….35	**CODE NUMBER 2**
1	21	0	0….35	**CODE NUMBER 3**
1	22	0	0….35	**CODE NUMBER 4**
1	23	0	0…2	**LCD-BACKLIGHT at ERROR** 0 = OFF 1 = RED 2 = WHITE 3 = PINK

INTERFACE

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
2	1	0	1…13	**MESSAGE RELAY** 1 = OFF 2 = ERROR 3 = / ERROR (inverse) 4 = FAN 5 = ENERGY SUPPLY 6 = UNDERCURRENT 7 = HARMONICS 8 = OVER-COMPENSATED 9 = UNDERCOMPENSATED 10 = NUMBER OF SWITCHINGS 11 = MODBUS-ERROR 12 = / MODBUS-ERROR 13 = TSM-ERROR 14 = C-DEFECT (capacitor error)
2	2	0	15…70	**FAN TEMPERATURE** 15…70 = 15°C….70°C
2	3	0	0…3	**EXTERNAL INPUT** 0 = NO 1 = 2nd Target cosphi 2 = EXTERNAL ERROR 3 = COUPLING COM1
2	4	0	0…23	**CLOCK-HOUR**
2	5	0	0…59	**CLOCK-MINUTE**
2	6	0	1…31	**CLOCK-DAY**
2	7	0	1…12	**CLOCK-MONTH**
2	8	0	14…99	**CLOCK-YEAR**
2	9	0	0…4	**PROTOCOL COM 1** 0 = OFF 1 = MODBUS RTU with control KTR 2 = MODBUS RTU 3 = ASCII 4 = TSM-BUSSYSTEM

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
2	10	0	0…20	**BAUD RATE COM 1** 0 = 9600 / NONE - 7 = ODD – 14 = EVEN 1 = 19200 / NONE - 8 = ODD – 15 = EVEN 2 = 38400 / NONE - 9 = ODD - 16 = EVEN 3 = 57600 / NONE -10 = ODD – 17 = EVEN 4 = 115200 / NONE - 11 = ODD – 18 = EVEN 5 = 250000 / NONE - 12 = ODD – 19 = EVEN 6 = 256000 / NONE - 13 = ODD – 20 = EVEN
2	11	0	1…255	**ADDRESS COM 1 (MODBUS)**
2	12	0	1…255	**ACSII-TRANSMITTING INTERVAL** 1…255 = 1…255 s
2	13	0	0…5	**ASCII-SEPARATOR** 0 = HT 1 = LF/CR 2 = SP 3 = CR/LF 4 = MINUS 5 = CSV
2	14	0	105…200	**C-FEHLER (+) TSM-BUSSYSTEM**
2	15	0	10…90	**C-FEHLER (-) TSM.BUSSYSTEM**
2	16	0	1…255	**FEHLERVERZÖGERUNG TSM-BUSSYSTEM**
2	17	0	0…255	**SPERRZEIT (Überstrom) TSM-BUSSYSTEM**
2	18	0	0…4	**PROTOCOL COM 2** 0 = OFF 1 = MODBUS RTU with control KTR 2 = MODBUS RTU 3 = CTI-BUS 4 = KOPPELBETRIEB
2	19	0	0…20	**BAUDRATE COM 2** See COM1
2	20	0	1…255	**ADDRESS COM 2 (MODBUS)**
2	21	0	30…80	**CTI-OVERTEMPERATURE** 30…80 = 30°C … 80°C
2	22	0	1…255	**CTI-TEST-TIME** Time in Seconds
2	23	0	0…255	**CTI-BLOCKING-TIME** Time in Seconds
2	24	0	1…4	**Number of BR7000-I-S**

EXPERTEN-MODE 2

Adress HIGH-BYTE	Adress LOW-BYTE	Data HIGH-BYTE	Data LOW-BYTE	DESCRIPTION
				ERROR STATUS 0 = OFF 1 = ON 2…255 = delay time in seconds
3	5	0	0…255	0/1/2…255 - MEAS. VOLTAGE
3	6	0	0…255	0/1/2…255 - OVERVOLTAGE
3	7	0	0…255	0/1/2…255 - OVERCOMPENSATED
3	8	0	0…255	0/1/2…255 - UNDERCOMPENSATED
3	9	0	0…255	0/1/2…255 - HARMONICS
3	10	0	0…255	0/1/2…255 - OVER TEMPERATURE
3	11	0	0…255	0/1/2…255 - OVERCURRENT
3	12	0	0…255	0/1/2…255 - UNDERVOLTAGE
3	13	0	0…255	0/1/2…255 - NUMBER OF SWITCHINGS
3	14	0	0…255	0/1/2…255 - UNDERCURRENT
3	15	0	0…255	0/1/2…255 - MODBUS- ERROR COM 1
3	16	0	0…255	0/1/2…255 - MODBUS- ERROR COM 2
3	17	0	0…255	0/1/2…255 - TSM-ERROR
3	18	0	0…255	0/1/2…255 - MODBUS-REMOTE
3	19	0	0…255	0/1/2…255 - CURRENT < ? (cap. current monitoring)
3	20	0	0…255	0/1/2…255 - BUS-ERROR-EXTERN
3	21	0	0…255	0/1/2…255 - C-DEFECT
3	22	0	0…255	0/1/2…255 - Current > 0 (capacitor current monitoring)
3	23	0	0…255	0/1/2…255 - OVERLOAD system (cap.current monitoring
3	24	0	0…255	0/1/2…255 - EXTERNAL-ERROR
3	25	0	0…255	0/1/2…255 - C-DEFECT-OFF (cap. current monitoring)
3	26	0	1…255	**ALARMRELAY – DELAY-TIME** 1…255 = 1…255 minutes
3	27	0	20…95	**UNDERVOLTAGE (Trigger)** 20…95 = 20…95 %
3	28	0	105…140	**OVERVOLTAGE (Trigger)** 105…140 = 105…140 %
3	29	0	10…100	**OVERCOMPENSATED** 100 = OFF / 99…10 = cosφ = 0.99…0.10 CAP
3	30	0	10…100	**UNDERCOMPENSATED** 100 = OFF / 99…10 = cosφ = 0.99…0.10 IND