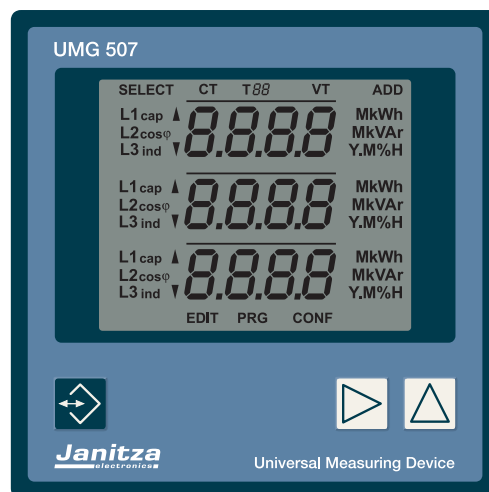


Universal Measuring Device

UMG507

Functional description Applications



Generals

The UMG507 supports the protocols Modbus RTU, Modbus TCP/IP, Modbus over TCP/IP (Modbus Gateway) or Profibus DP V0, depending in the version. This functional description is an addition to the manual and describes the configuration of the corresponding function step by step.

More functional descriptions can be found on the CD-ROM PSWbasic/professional. At present, the following functional descriptions are available:

- UMG507 used as remote data display for external Modbus slaves
- OPC Server Port 502
- OPC Server Port 8000 (Modbus Gateway Function)
- The webserver of UMG507
- Description of the storage of UMG507
- Description of Profibus with examples

Issue Note:

17.02.2005

07.03.2005

First edition / Wagner

Correction

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Data types

The UMG507 uses the following data types in Modbus Master Mode:

Higbyte before Lowbyte

UMG507 description	Type	Size	Range
float	float	4 Byte	$\pm 3.8 \cdot 10^{-38}$ to $3.4 \cdot 10^{38}$ (floating point format)
short	short	2 Byte	-32768 to 32767
u_short	unsigned short	2 Byte	0 to 65535
int	int	4 Byte	-2147483648 to 2157583647
u_int	unsigned int	4 Byte	0 to 4294967296
char	char	1 Byte	-128 to +127
bit	Bit always reads a complete register (16Bit)		

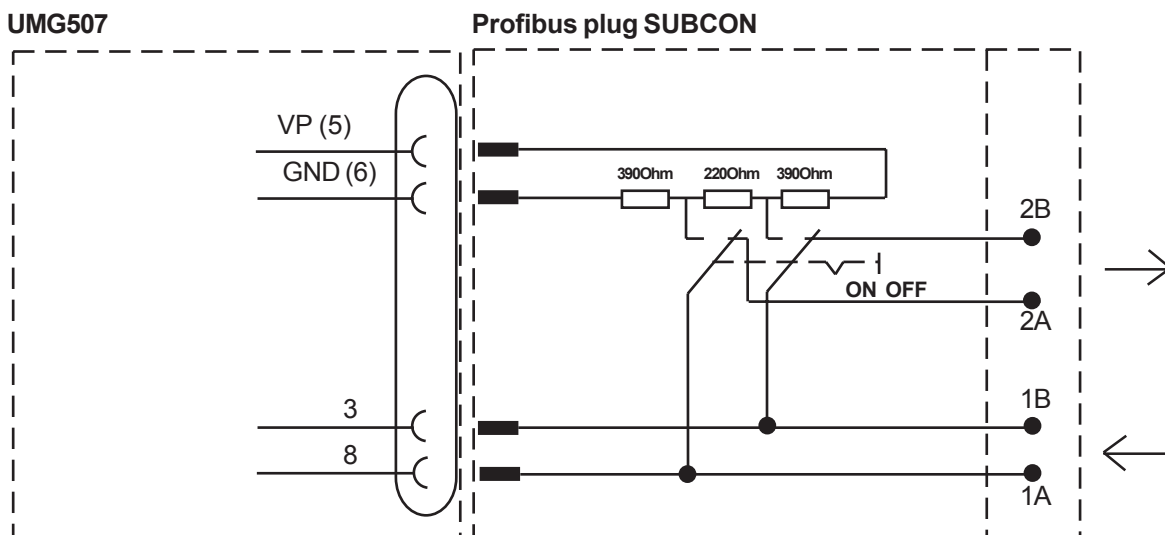
Lowbyte before Highbyte

UMG507 description	Type	Size	Range
float.l	float	4 Byte	$\pm 3.8 \cdot 10^{-38}$ to $3.4 \cdot 10^{38}$ (floating point format)
short.l	short	2 Byte	-32768 to 32767
u_short.l	unsigned short	2 Byte	0 to 65535
int.l	int	4 Byte	-2147483648 to 2157583647
u_int.l	unsigned int	4 Byte	0 to 4294967296
char.l	char	1 Byte	-128 to +127
bit.l	Bit always reads a complete register (16Bit)		

l = inverted

RS485 connection

The RS485 connection of the UMG507 is designed as a 9 pole Sub D sleeve. We recommend a 9 pole Profibus plug for connection (Type: SUBCON-PLUS-ProfiB/AX/SC Producer: Phoenix part.No.: 27 44 38 0 or comparable).



Connection of the bus cables:

Connect the incoming bus cables always to the terminals 1A/1B (Also at the beginning of the bus system!) The outgoing bus cable is connected to the terminals 2A/2B. The terminal resistors are activated via the slide switch at the beginning and end of the bus system. The terminals for the outgoing bus cable (2A/2B) are disconnected simultaneously.

Application 1: Energy rates

Task: Real energy consumption shall be counted in different rates according to the respective daytime. The rate times have to be programmed for winter and summer time separately. The place of installation is IRAN.

The following times have been fixed:

Summer time:

Tariff 1 (T1) from 00:00 - 10.00 h

Tariff 2 (T2) from 10:00 - 24.00 h

Energy meter T0 is the addition of T1+T2.

Winter time:

Tariff 1 (T1) from 00:00 - 12.00 h

Tariff 2 (T2) from 12:00 - 24.00 h

Strategy:

1. Fixing of the time zone offset
2. Programming of the weekly switching clock for the corresponding tariff times
3. Programming of the time zone comparator
4. Programming of the logical combinations
5. Fixing of the I/O configuration

Step 1:

The time base of UMG507 is based on UTC. The standard time in Iran is GMT+3,5h for winter time and GMT+4,5h for summer time. This corresponds to a time zone offset of 12600sec in winter and 16200sec in summer.

The summer/winter time changeover in Iran is as follows:

Winter/summer time changeover = First day in Farvardin

Summer/winter time changeover = End of 30th day in Shahrivar

This means, a calculation from the Persian calendar to the Gregorian calendar must be carried out.

The changeover according to the Gregorian calendar would be:

Winter/summer changeover = Third Monday in March at 23:59h (20:29 UTC)

Summer/winter changeover = Third Wednesday in September 23:59h (20:29 UTC)

Those data can be programmed via PSW.

Step 2:

Programming of the weekly switching clock channels

Switching clock channel No.1 (for summer Tariff 1)

Weekday first : **Monday**
Weekday first : **Sunday**
Hours: **00:00**
Minutes: **10:00**

Switching clock channel No.2 (summer Tariff 2)

Weekday first : **Monday**
Weekday first : **Sunday**
Hours: **10:00**
Minutes: **23:59**

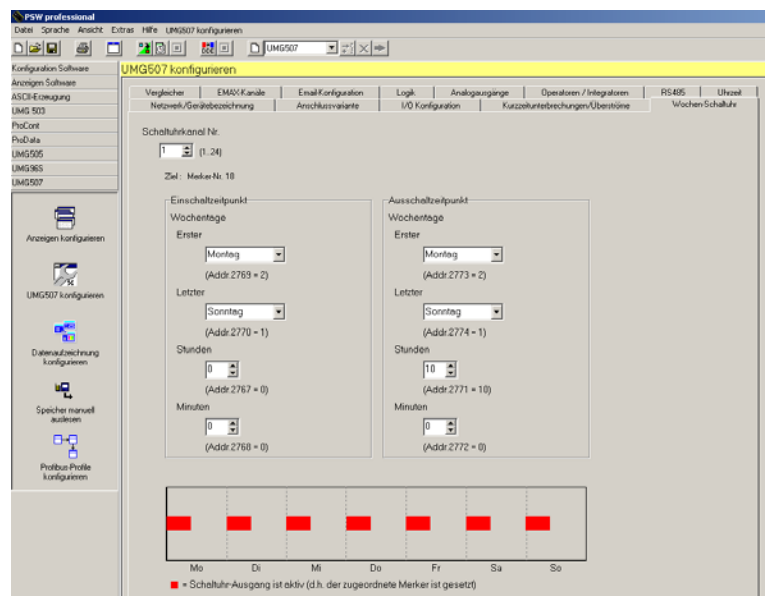
Switching clock channel No.3 (for winter Tariff 1)

Weekday first : **Monday**
Weekday first : **Sunday**
Hours: **00:00**
Minutes: **12:00**

Switching clock channel No.4 (winter Tariff 2)

Weekday first : **Monday**
Weekday first : **Sunday**
Hours: **12:00**
Minutes: **23:59**

Programming of the function combinations in panel „Logic operations for maker flags“

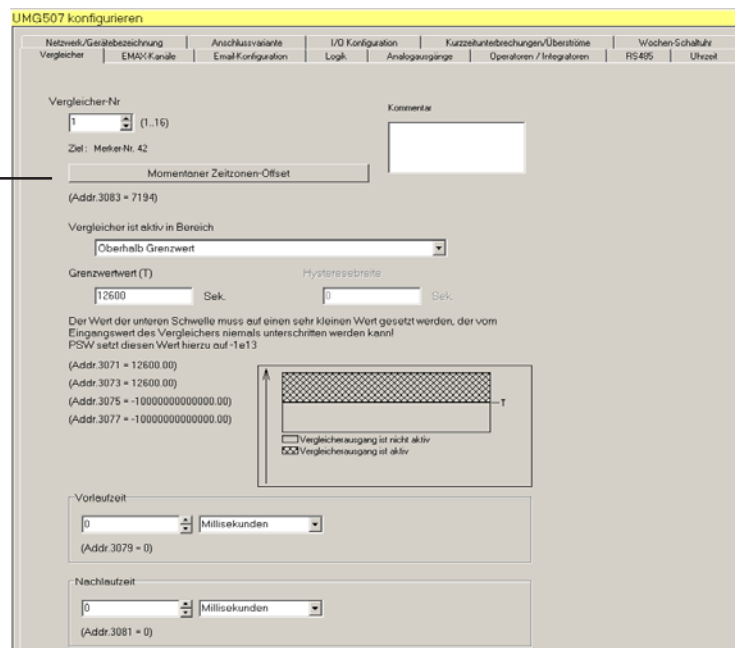


Step 3:

Programming of the time zone offset comparator.

The UMG507 saves the actual time zone offset on address Adresse **7194**. This offset is **12600sec** during winter and 16200 sec during summer. The comparator contains the actual status after programming. If the time zone offset is > 12600sec the output of the comparator is active.

Input parameter 7194 .



Step 4:

Programming of the logic.

In the logic is checked, which switching clock channel is active, and if it is summer or winter.

The combinations would be as follows:

Time switch channel 1	AND	Comparator 1	= Flag 82	//Summer Tariff 1
Time switch channel 2	AND	Comparator 2	= Flag 83	//Summer Tariff 2
permanent active	NOT AND	Comparator 1	= Flag 84	//Inverting comparator
Time switch channel 3	AND	Flag 84	= Flag 85	//Winter Tariff 1
Time switch channel 4	AND	Flag 84	= Flag 86	//Winter Tariff 2
Flag 82	OR	Flag 85	= Flag 87	// Result Tariff 1 Active
Flag 83	OR	Flag 86	= Flag 88	// Result Tariff 2 Active

Programming of the function combinations in panel „Logic operations for maker flags“

UMG507 konfigurieren

Netzwerk/Gerätebezeichnung	Anschlussvariante	I/O Konfiguration	Kurzzeitunterbrechungen/Überströme	Wochen-Schaltuhr
Vergleicher	EMA-Kanäle	Email-Konfiguration	Logik	Analogausgänge
Operatoren / Integratoren				
RS485				
Uhrzeit				

Achtung:
Die unten konfigurierten Verknüpfungen werden vom UMG507 in der Reihenfolge Verknüpfungs-Nummern 1, 2...128 abgearbeitet. Der Zustand von mehrfach belegten Ziel-Merkern wird durch das Ergebnis der zuletzt abgearbeiteten Verknüpfung bestimmt.

Nr.	Quelle 1	Operator	Quelle 2	Ziel-Merkern (82-144)		
1/128	Schaltuhr-Kanal	1	AND	Vergleicher	1	82
2/128	Schaltuhr-Kanal	2	AND	Vergleicher	1	83
3/128	Dauerhaft aktiv		Not AND	Vergleicher	1	84
4/128	Schaltuhr-Kanal	3	AND	übrige Merker (82-144)	84	85
5/128	Schaltuhr-Kanal	4	AND	übrige Merker (82-144)	84	86
6/128	übrige Merker (82-144)	82	OR	übrige Merker (82-144)	85	87
7/128	übrige Merker (82-144)	83	OR	übrige Merker (82-144)	86	88
8/128	Nicht belegt		AND	Nicht belegt		82
9/128	Nicht belegt		AND	Nicht belegt		82
10/128	Nicht belegt		AND	Nicht belegt		82
11/128	Nicht belegt		AND	Nicht belegt		82
12/128	Nicht belegt		AND	Nicht belegt		82
13/128	Nicht belegt		AND	Nicht belegt		82
14/128	Nicht belegt		AND	Nicht belegt		82
15/128	Nicht belegt		AND	Nicht belegt		82

Step 5:

Programming of the output configuration

The flags are assigned to the energy meters in the I/O assignment.

Programming of the function combinations in panel „Output channels“

JMG507 konfigurieren

Vergleicher	EMA-Kanäle	Email-Konfiguration	Logik	Analogausgänge	Operatoren / Integratoren	RS485	Uhrzeit
Netzwerk/Gerätebezeichnung	Anschlussvariante	I/O Konfiguration	Kurzzeitunterbrechungen/Überströme	Wochen-Schaltuhr			

I/O Konfiguration

Kanal Nr.
1 (1..64)

Quelle
übrige Merker (82-144)

Merker Nr.
87 (82..144)
(Quelle-Merker : 87)

Ziel oder Aktion
Tarif Wirkarbeit aktivieren

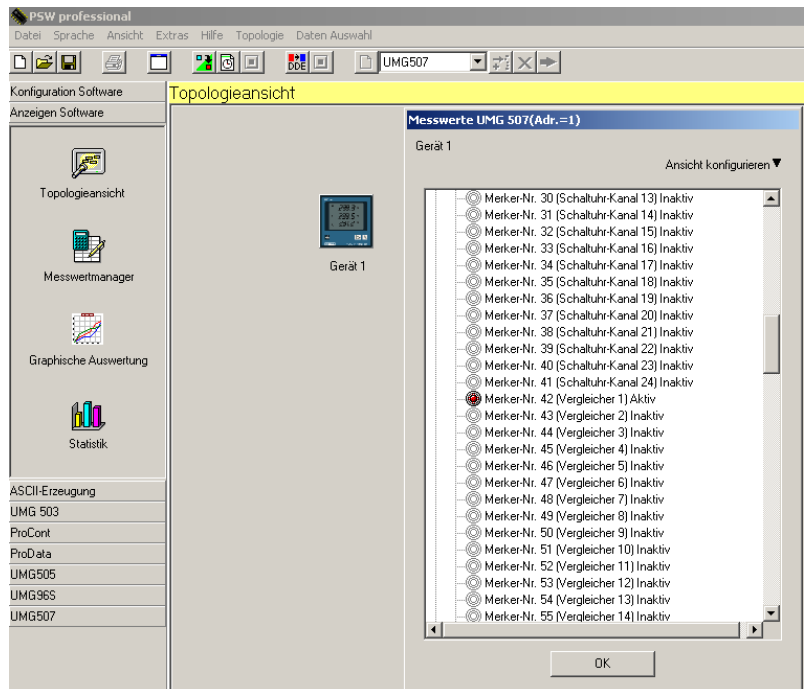
Tarif
1 (1..4)

Step 6:

Check functions

The function check can be carried out via the display of the UMG 507 or aided by PSWprofessional. In PSWprofessional the topology is used for that purpose. All actual flag and switching clock conditions are displayed here.

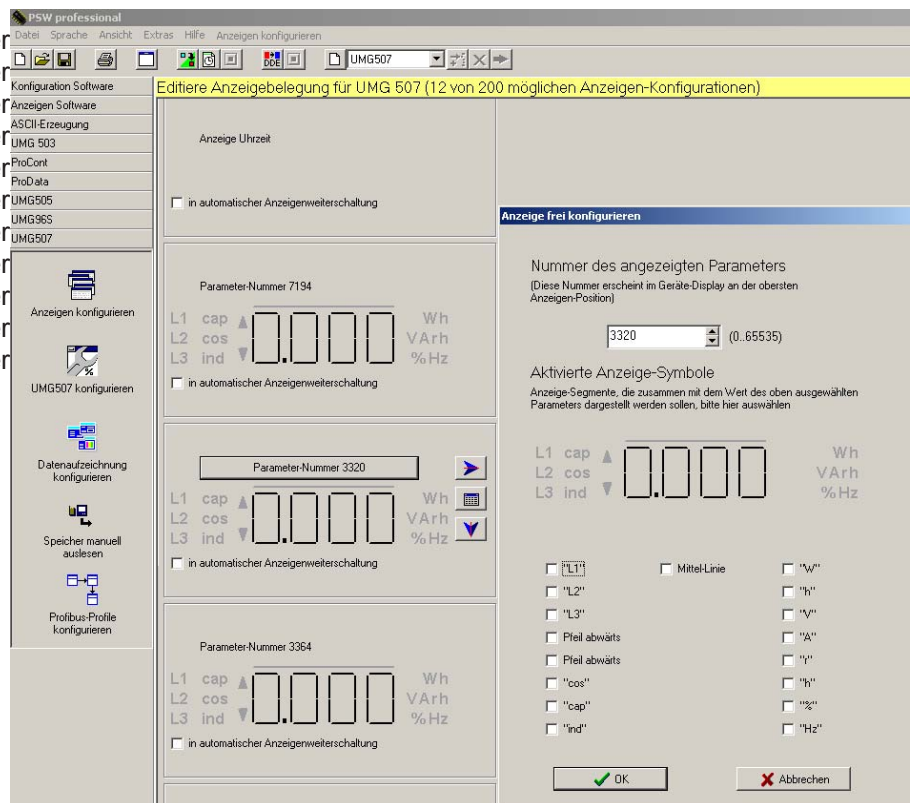
Use right mousekey on the device in topology and select function "show all measured values". The topology must be „online“.



One more possibility is to drag all important parameters into the display of UMG507.

The following parameters are useful:

Time channel 1	=	Parameter
Time channel 2	=	Parameter
Time channel 3	=	Parameter
Time channel 4	=	Parameter
Comparator 1	=	Parameter
Flag 82	=	Parameter
Flag 83	=	Parameter
Flag 84	=	Parameter
Flag 85	=	Parameter
Flag 86	=	Parameter
Flag 87	=	Parameter



Application 2: Email for short interruptions

Task: An Email must be sent after a trigger event (e.g. short interruption). The email shall transmit the starting and ending time of the short interruption. Starting and ending time shall be deposited in the parameter memory additionally. The status of the short interruption must be provided on a digital output.

The following conventions have been made:

1. Digital output 1 active = Short interruption active
2. Digital output 1 chopped = Short interruption was active
3. Digital input 2 resets the status of the digital output

Steps:

1. Input DNS address.
2. Email configuration.
3. Fixing the limits.
4. Programming of the logical combinations.
5. Fixing of the I/O configuration.

Step 1:

Enter the IP address of your DNS servers first. Please ask your system administrator for the corresponding settings.

Step 2:

For the Email Account configuration, you need the following data from your system administrator

1. Server name = Post output (SMTP)
2. Account name
3. Password for your Email account
4. Authentication (Login, Plain, Cram-MD5)
5. Email address of UMG507 (Mail from)
6. Subject
5. User address

Note:

If several recipients must receive the same email, the email addresses must be separated by a semicolon.

Example: email1@yourname.de;email2@yourname.de

The following short descriptions are entered within the Email text (see address list):

<ul1min> = Minimum value of voltage in phase L1.
 <ul2min> = Minimum value of voltage in phase L2.
 <ul3min> = Minimum value of voltage in phase L3.
 <tsu1minon_s> + <tsu1minon_m> = Start of short interruption in UTC time (Seconds + Milliseconds).
 <tsu1minoff_s> + <tsu1minoff_m> = End of short interruption in UTC time (Seconds + Milliseconds).

The short interruptions are set to the actual values while creating the email. The minimum values have the average of 10 periods. More exact data are saved in the trigger memory (True RMS values over 128 periods) and can be read with PSWbasic/professional. If the clock of the UMG507E/EP is synchronized by a NTP Server, the accuracy of the time is about 10 to 20ms. Three emails are required.

Email text No. 1 for phase L1:

L1 <ul1min> V
 L2 <ul2min> V
 L3 <ul3min> V
 from <tsu1minon_s>sec + <tsu1minon_m>ms
 to <tsu1minoff_s>sec + <tsu1minoff_m>ms

Email text No. 2 for phase L2:

L2 <ul2min> V
 L3 <ul3min> V
 L1 <ul1min> V
 from <tsu2minon_s>sec + <tsu2minon_m>ms
 to <tsu2minoff_s>sec + <tsu2minoff_m>ms

Email text No. 3 for phase L3:

L3 <ul3min> V
 L1 <ul1min> V
 L2 <ul2min> V
 from <tsu3minon_s>sec + <tsu3minon_m>ms
 to <tsu3minoff_s>sec + <tsu3minoff_m>ms

Step 3:

Fix limits for short interruptions for each phase in window „Short interruptions / Overcurrents“.

Saving the true RMS values within the trigger memory.

Low voltage phase L1

Low voltage phase L2

Low voltage phase L3

Step 4:

In window „Logic“, the functional combinations are programmed.

No.:	Source 1	Operator	Source 2	Target flag
1	Permanently inactive	AND	Permanently inactive	= 82
2	Short low voltage UL1	Neg. edge	Permanently active	= 82
3	Permanently inactive	AND	Permanently inactive	= 83
4	Short low voltage UL1	Pos. edge	Permanently active	= 83
5	Permanently inactive	AND	Permanently inactive	= 84
6	Short low voltage UL2	Neg. edge	Permanently active	= 84
7	Permanently inactive	AND	Permanently inactive	= 85
8	Short low voltage UL2	Pos. edge	Permanently active	= 85
9	Permanently inactive	AND	Permanently inactive	= 86
10	Short low voltage UL3	Neg. edge	Permanently active	= 86
11	Permanently inactive	AND	Permanently inactive	= 87
12	Short low voltage UL3	Pos. edge	Permanently active	= 87
// Combinations for email sending.				
13	Short low voltage UL1	Pos. edge	Permanently active	= 88
14	Short low voltage UL2	Pos. edge	Permanently active	= 89
15	Short low voltage UL3	Pos. edge	Permanently active	= 90
16	Flag 91	XOR	Permanently active	= 91
// By this assignment, the flag flashes cyclically every 200ms				
17	Flag 88	OR	Flag 89	= 92
18	Flag 92	OR	Flag 90	= 93
// if short interruption is active in one phase, flag 93 is set				
19	Flag 93	AND	Flag 91	= 94
// if short interruption is active in one phase and flag 91 is active, flag 94 should flash				
20	Flag 94	OR	Short low voltage UL1	= 95
21	Flag 95	OR	Short low voltage UL2	= 96
22	Flag 96	OR	Short low voltage UL3	= 97
// the flag is active while short interruption and flashes after short interruption				
23	Digital input 2	Pos. edge	Permanently inactive	= 88
24	Digital input 2	Pos. edge	Permanently inactive	= 89
25	Digital input 2	Pos. edge	Permanently inactive	= 90
// Resets the flashing				

Description of the flags (only for information):

Flag 82 = Send Email No. 1 when short interruption L1 ends.

Flag 84 = Send Email No. 2 when short interruption L2 ends.

Flag 86 = Send Email No. 3 when short interruption L3 ends.

Flag 82 = Save parameter 5139 (time of short interruption L1 Stop)

Flag 84 = Save parameter 5145 (time of short interruption L1 Stop)

Flag 86 = Save parameter 5151 (time of short interruption L1 Stop)

Flag 83 = Save parameter 5136 (time of short interruption L1 Start)

Flag 85 = Save parameter 5142 (time of short interruption L2 Start)

Flag 87 = Save parameter 5148 (time of short interruption L3 Start)

Flag 97 = Set digital output 1 / flash.

Programming of the logical combinations No.: 1 - 15

UMG507 konfigurieren

Netzwerk/Gerätebezeichnung		Anschlussvariante		I/O Konfiguration		Kurzzeitunterbrechungen/Überströme		Wochen-Schaltuhr	
Vergleicher	EMAX-Kanäle	Email-Konfiguration	Logik	Analogausgänge	Operatoren / Integratoren	RS485	Uhrzeit		

Achtung :
Die unten konfigurierten Verknüpfungen werden vom UMG507 in der Reihenfolge Verknüpfungs-Nummern 1, 2,...128 abgearbeitet. Der Zustand von mehrfach belegten Ziel-Merkern wird durch das Ergebnis der zuletzt abgearbeiteten Verknüpfung bestimmt

Nr.	Quelle 1	Operator	Quelle 2	Ziel-Merker (82-144)
1/128	Dauerhaft inaktiv	AND	Dauerhaft inaktiv	82
2/128	Kurzzeitunterbrechung (Unter U L1	Neg. Flanke	Dauerhaft aktiv	82
3/128	Dauerhaft inaktiv	AND	Dauerhaft inaktiv	83
4/128	Kurzzeitunterbrechung (Unter U L1	Pos. Flanke	Dauerhaft aktiv	83
5/128	Dauerhaft inaktiv	AND	Dauerhaft inaktiv	84
6/128	Kurzzeitunterbrechung (Unter U L2	Neg. Flanke	Dauerhaft aktiv	84
7/128	Dauerhaft inaktiv	AND	Dauerhaft inaktiv	85
8/128	Kurzzeitunterbrechung (Unter U L2	Pos. Flanke	Dauerhaft aktiv	85
9/128	Dauerhaft inaktiv	AND	Dauerhaft inaktiv	86
10/128	Kurzzeitunterbrechung (Unter U L3	Neg. Flanke	Dauerhaft aktiv	86
11/128	Dauerhaft inaktiv	AND	Dauerhaft inaktiv	87
12/128	Kurzzeitunterbrechung (Unter U L3	Pos. Flanke	Dauerhaft aktiv	87
13/128	Kurzzeitunterbrechung (Unter U L1	Pos. Flanke	Dauerhaft aktiv	88
14/128	Kurzzeitunterbrechung (Unter U L2	Pos. Flanke	Dauerhaft aktiv	89
15/128	Kurzzeitunterbrechung (Unter U L3	Pos. Flanke	Dauerhaft aktiv	90

Programming of the logical combinations No. : 15 - 25

UMG507 konfigurieren

Netzwerk/Gerätebezeichnung		Anschlussvariante		I/O Konfiguration		Kurzzeitunterbrechungen/Überströme		Wochen-Schaltuhr	
Vergleicher	EMAX-Kanäle	Email-Konfiguration	Logik	Analogausgänge	Operatoren / Integratoren	RS485	Uhrzeit		

Achtung :
Die unten konfigurierten Verknüpfungen werden vom UMG507 in der Reihenfolge Verknüpfungs-Nummern 1, 2,...128 abgearbeitet. Der Zustand von mehrfach belegten Ziel-Merkern wird durch das Ergebnis der zuletzt abgearbeiteten Verknüpfung bestimmt

Nr.	Quelle 1	Operator	Quelle 2	Ziel-Merker (82-144)	
14/128	Kurzzeitunterbrechung (Unter U L2	Pos. Flanke	Dauerhaft aktiv	89	
15/128	Kurzzeitunterbrechung (Unter U L3	Pos. Flanke	Dauerhaft aktiv	90	
16/128	übrige Merker (82-144)	91	Excl. OR	Dauerhaft aktiv	91
17/128	übrige Merker (82-144)	88	OR	übrige Merker (82-144)	89
18/128	übrige Merker (82-144)	92	OR	übrige Merker (82-144)	90
19/128	übrige Merker (82-144)	93	AND	übrige Merker (82-144)	91
20/128	übrige Merker (82-144)	94	OR	Kurzzeitunterbrechung (Unter U L1	95
21/128	übrige Merker (82-144)	95	OR	Kurzzeitunterbrechung (Unter U L2	96
22/128	übrige Merker (82-144)	96	OR	Kurzzeitunterbrechung (Unter U L3	97
23/128	Digitaleingang	2	Pos. Flanke	Dauerhaft inaktiv	88
24/128	Digitaleingang	2	Pos. Flanke	Dauerhaft inaktiv	89
25/128	Digitaleingang	2	Pos. Flanke	Dauerhaft inaktiv	90
26/128	Nicht belegt		OR	Nicht belegt	82
27/128	Nicht belegt		OR	Nicht belegt	82
28/128	Nicht belegt		OR	Nicht belegt	82

Step 5:

Within the „I/O configuration“ actions are assigned to the flags.
The assignment is as follows:

Channel No. 1**Source**

Other flags (82-144)

Target or action

Send Email

Flag No.

82

No. 1

Channel No. 2**Source**

Other flags (82-144)

Target or action

Send Email

Flag No.

82

No. 2

Channel No. 3**Source**

Other flags (82-144)

Target or action

Send Email

Flag No.

82

No. 3

Channel No. 4**Source**

Other flags (82-144)

Target or action

Save parameter

Flag No.

83

No. 5139

Channel No. 6**Source**

Other flags (82-144)

Target or action

Save parameter

Flag No.

86

No. 5151

Channel No. 8**Source**

Other flags (82-144)

Target or action

Save parameter No.

Flag No.

85

5142

Channel No.10**Source**

Other flags (82-144)

Target or action

Digital output

Flag No.

97

1

Channel No.12**Source**

Short interruption

Target or action

Reset Minimum values

Flag No.

Low volt. L2

Channel No. 5**Source**

Other flags (82-144)

Target or action

Save parameter

Flag No.

84

No. 5145

Channel No.7**Source**

Other flags (82-144)

Target or action

Save parameter

Flag No.

83

No. 5136

Channel No.9**Source**

Other flags (82-144)

Target or action

Save parameter

Flag No.

87

No. 5148

Channel No.11**Source**

Short interruption

Target or action

Reset minimum values

Flag No.

Low volt. L1

Channel No.13**Source**

Short interruption

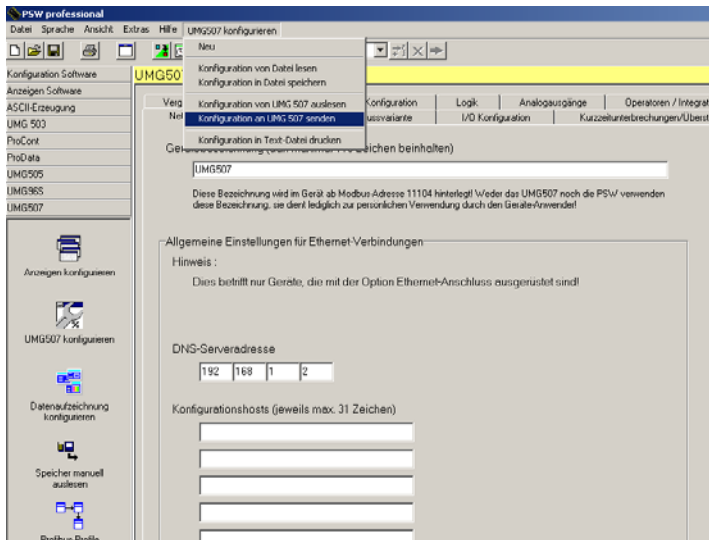
Target or action

Reset minimum values

Flag No.

Low volt. L3

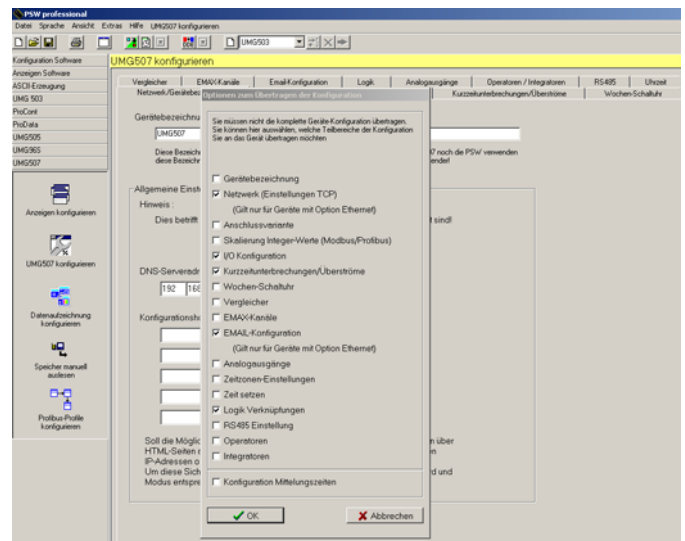
With the channels 11-13 the saved minimum values are reset at the beginning of the short interruption. The average of the minimum values is taken over 10 periods. More exact data are saved in the trigger memory (true RMS values over 128 periods) and can be evaluated with PSWbasic/professional.



Press key „Configure UMG507“ and send programming to UMG 507.

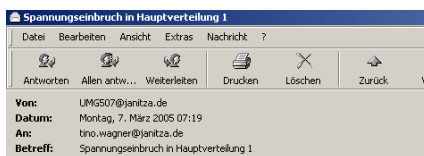
The following options for transmission of the configuration must be selected:

- Network
- I/O configuration
- Short interruptions
- Email configuration
- Logical combinations

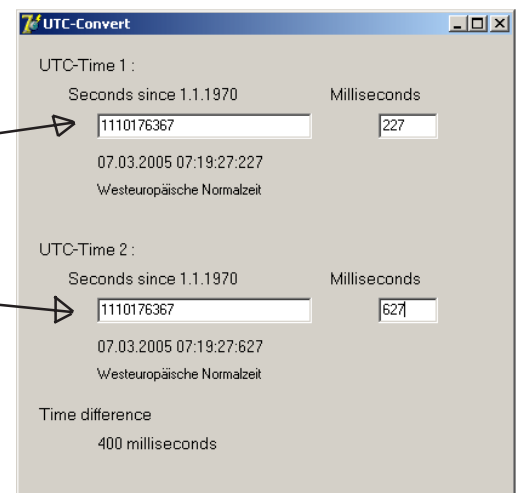


Email transmission

While breakdown of voltage, the actual dropping time including the minimum values (over 10 periods) are sent. The dropping time is given in UTC and can be converted into standard time with the program UTC Convert. (This program can be found on CD ROM PSWbasic/professional).



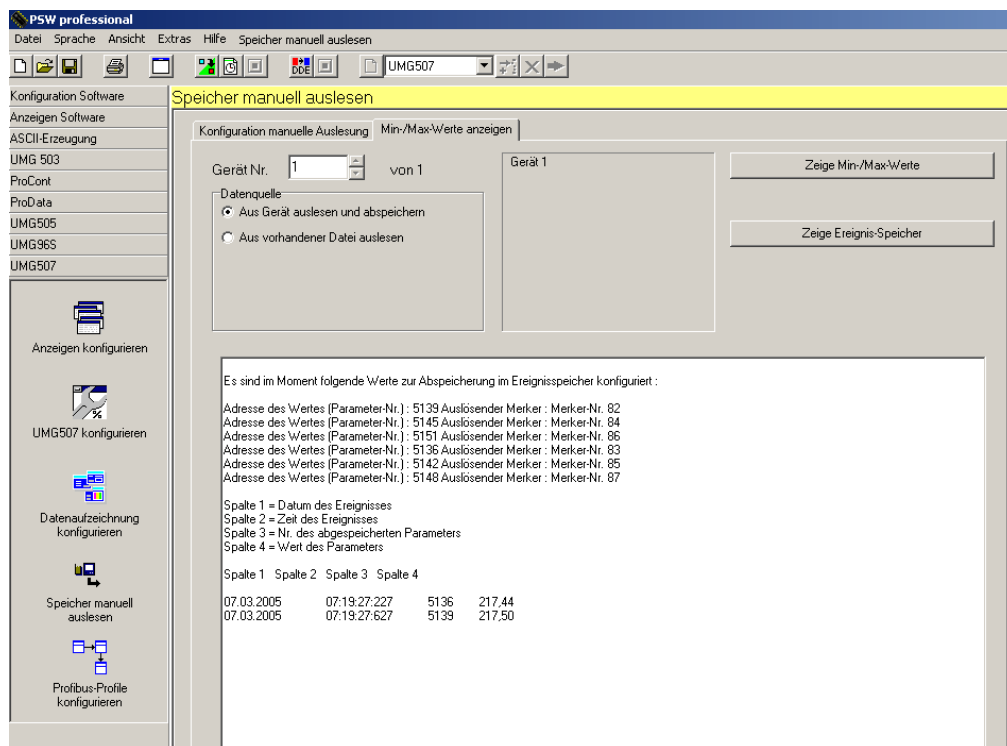
L1 117.4 V
L2 68.3 V
L3 68.3 V
von 1110176367sec + 227ms
bis 1110176367sec + 627ms



Copy the starting and ending time of the short interruption into the input windows of the program UTC Convert. The calculation into western European time including time gap is done automatically.

Parameter memory

Via the menu of UMG507 „Read out memory manually“ under window „Min-/Max values“ the event memory (Parameter memory) can be read. The data are saved as a text file. The voltage value behind the dropping time is only slightly related to the real voltage drop, but is the last voltage value over 10 periods at the time, when it is written into the parameter memory. This is why the voltage value within the email and within the parameter memory can be different.



The minimum values within the email are measured over 10 periods. More exact data are saved within the trigger memory (true RMS values over 128 periods) and can be read with Software PSWbasic/professional. While moving onto the measured curve with the mouse pointer, the effective measured dropping depth is indicated. In the example below it is 117,5V. The graphical evaluation is possible with PSWprofessional only (option). In software PSWbasic the data are saved as Text File.



Application 3: Integration of an external temperature value

Task:

The temperature value of an external temperature sensor (KTY83) shall be integrated over time and saved in the parameter memory.

Steps:

1. Connection of the temperature sensor to the temperature input of the UMG507AD/E/EP/P
2. Select temperature sensor
3. Configuration of the integrator
4. Program comparator
5. Fixing of I/O configuration.

The following conventions have been made

1. The temperature sensor is of the type KTY83-110.
2. The integration time is 15 minutes.
3. After 15 minutes the mean value must be saved in the parameter memory.

Description:

The external temperature value of KTY83-110 is measured over 15 minutes average. The integral value of the integrator no. 1 can be found in parameter address 3449 and must be reset and saved after 15 minutes. This is done with a second timer, which is supervised by a comparator.

Step 1:

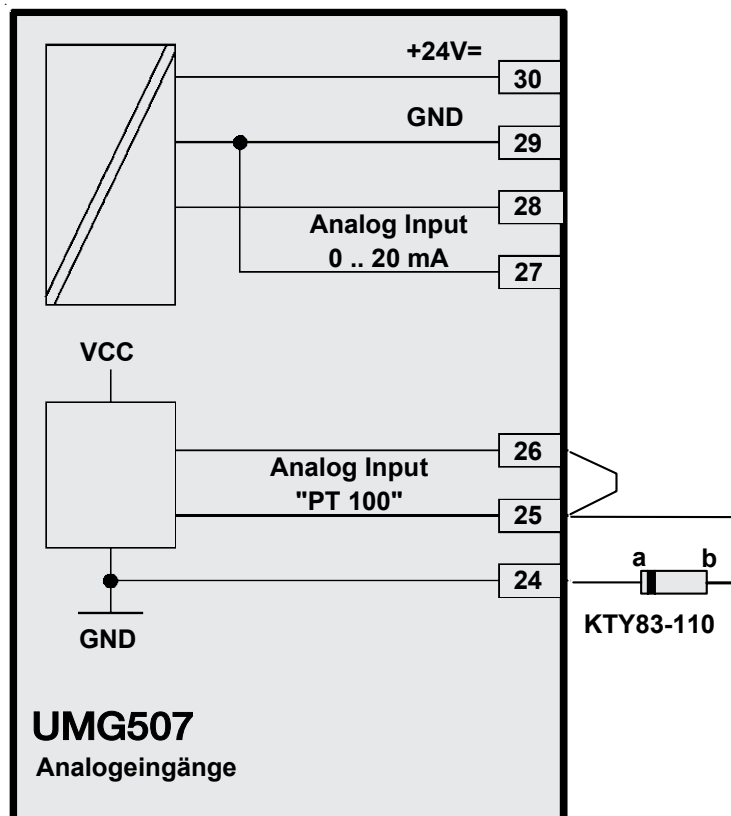
The following temperature sensors can be used:

- KTY83 (-55 to +175°C)
- KTY84 (-40 to +300°C)
- PT100 (-99 to +500°C)
- PT1000 (-99 to +500°C)

Important:

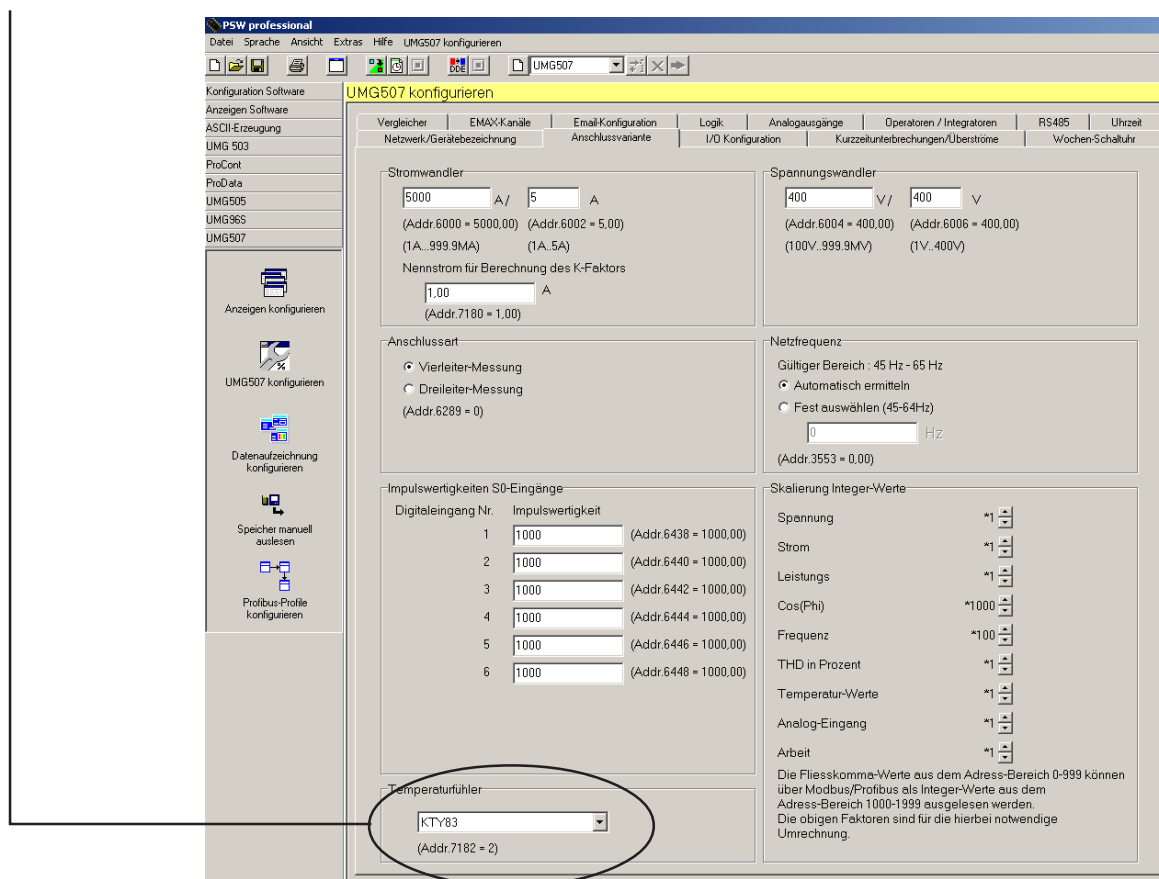
- The total load must not exceed 4kOhm!
- Please note, that the negative pole must be connected to terminal 24 while connecting KTY.

The following example shows the connection of a KTY83-110.



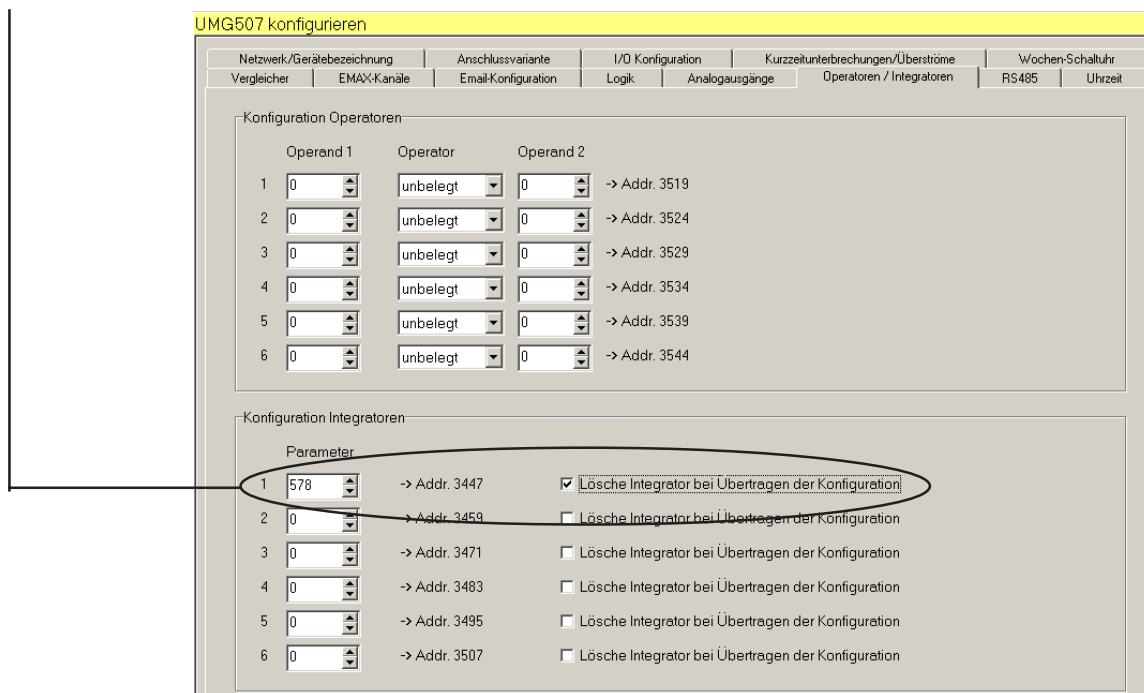
Step 2:

Set the connection configuration of the temperature sensor to KTY83



Step 3:

The parameter address (see address list UMG507) of the external temperature sensor is assigned to integrator no. 1.



Step 4:

Via a comparator the running time of the second timer no. 1 is supervised. Enter the limit of 900 seconds. The comparator must be active above the limit.

UMG507 konfigurieren

Netzwerk/Gerätebezeichnung | Anschlussvariante | I/O Konfiguration | Kurzzeiteinstellungen/Überströme | Wochen-Schaltuhr

Vergleichen | EMAN-Kanäle | Email-Konfiguration | Logik | Analogausgänge | Operatoren / Integratoren | RS485 | Uhrzeit

Vergleichen-Nr. 1 (1..16)

Kommentar

Ziel-Merkmal: 42

Laufzeit Sekunden-Timer 1

(Addr. 3083 = 3423)

Vergleichen ist aktiv in Bereich: Oberhalb Grenzwert

Grenzwert (T): 900 Sek.

Hysteresbreite: 0 Sek.

Der Wert der unteren Schwelle muss auf einen sehr kleinen Wert gesetzt werden, der vom Eingangswert des Vergleichers niemals unterschritten werden kann! PSW setzt diesen Wert hierzu auf -1e13

(Addr. 3071 = 900.00)
(Addr. 3073 = 900.00)
(Addr. 3075 = -1000000000000.00)
(Addr. 3077 = -1000000000000.00)

Vorlaufzeit: 0 Millisekunden (Addr. 3079 = 0)

Nachlaufzeit: 0 Millisekunden (Addr. 3081 = 0)

Step 5:

In the „I/O configuration“ the actions are assigned as follows.

Channel No. 1

Source

Permanently active (Flag 2)

Target or action

Run Sec-Timer No. 1

Channel No. 2

Source

Comparator No. 1

Target or action

Reset Sec-Timer No. 1

Channel No. 3

Source

Permanently active (Flag 2)

Target or action

Run Integrator No. 1

Channel No. 4

Source

Comparator No. 1

Target or action

Save parameter 3449

Channel No. 5

Source

Comparator No. 1

Target or action

Reset Integrator No. 1

UMG507 konfigurieren

Vergleichen | EMAN-Kanäle | Email-Konfiguration | Logik | Analogausgänge | Operatoren / Integratoren | RS485 | Uhrzeit

I/O Konfiguration

Kanal Nr. 1 (1..64)

Quelle: Dauerhaft aktiv (Merkmal-Nr. 2)

Ziel oder Aktion: Run Sec-Timer

Sekunden-Timer Nr. 1 (1..8)

Note:

The channels are worked out subsequently by UMG507 beginning with channel no. 1. Therefore it is necessary to save parameter 3449 before the reset of the integrator. If saving would be carried out on channel no. 5 and the reset on channel no. 4, no temperature value was saved.

Parameter memory

Via menu of UMG 507 „Read memory manually“ the event memory can be read in window „Min-/Max values“ . The data are saved as text file.

Speicher manuell auslesen

Konfiguration manuelle Auslesung Min-/Max-Werte anzeigen

Gerät Nr. 1 von 1 Gerät 1

Datenquelle:
☒ Aus Gerät auslesen und abspeichern
☐ Aus vorhandener Datei auslesen

Zeige Min-/Max-Werte

Zeige Ereignis-Speicher

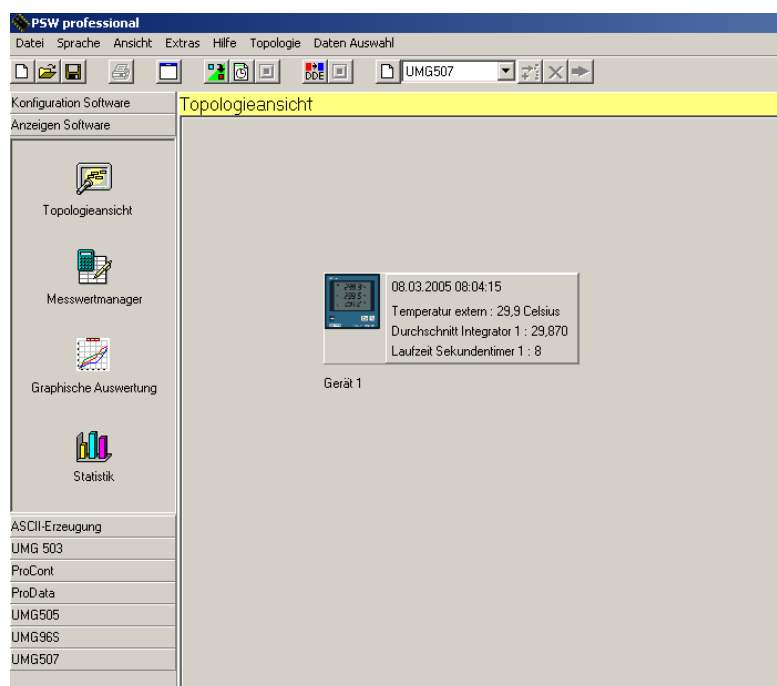
08.03.2005	08:16:39:125	3449	29.88
08.03.2005	08:16:46:129	3449	29.88
08.03.2005	08:16:57:133	3449	29.89
08.03.2005	08:17:08:132	3449	29.88
08.03.2005	08:17:19:136	3449	29.88
08.03.2005	08:17:30:138	3449	29.89
08.03.2005	08:17:41:140	3449	29.88
08.03.2005	08:17:52:144	3449	29.88
08.03.2005	08:18:03:146	3449	29.89
08.03.2005	08:18:14:143	3449	29.88
08.03.2005	08:18:25:145	3449	29.89
08.03.2005	08:18:36:147	3449	29.89
08.03.2005	08:18:47:151	3449	29.89
08.03.2005	08:18:58:151	3449	29.89
08.03.2005	08:19:09:151	3449	29.88
08.03.2005	08:19:20:150	3449	29.88
08.03.2005	08:19:31:152	3449	29.90
08.03.2005	08:19:42:154	3449	29.89
08.03.2005	08:19:53:152	3449	29.89
08.03.2005	08:20:04:150	3449	29.89
08.03.2005	08:20:15:148	3449	29.89
08.03.2005	08:20:26:145	3449	29.88
08.03.2005	08:20:37:143	3449	29.89
08.03.2005	08:20:48:141	3449	29.90

Date Time Measured value

Parameter

Topology view (Only with PSWprofessional)

In topology view of PSWprofessional the measured values can be displayed additionally.



Application 4: Double tariffs

Task: With a digital input it shall be changedover between tariff 1 and tariff 2. This means, if the digital input is active, energy is measured in energy meter 2. If the digital input is not active, energy is measured in energy meter 1.

Steps:

1. Configuration of the logical combinations
2. Fixing of the I/O configuration.

Step 1:

The digital input 1 is inverted within the logical combinations and given out on flag 82, which means if digital input 1 is inactive, flag 82 is active

No.:	Source 1	Operator	Source 2	Target flag
1	Permanently active	AND	Permanently inactive	= 82
2	Permanently active	/AND	Digital input 1	= 82

Step 2:

In the „I/O configuration“ the actions are assigned as follows.

Channel No. 1

Source

Digital input 1

Target or action

Activate tariff real energy 1

Channel No. 2

Source

Flag No. 82

Target or action

Activate tariff real energy 2

Programming logic

UMG507 konfigurieren

Netzwerk/Geratebezeichnung	Anschlussvariante	I/O Konfiguration	Kurzzeitunterbrechungen/Überströme	Wochen-Schaltuhr
Vergleicher	EMAX-Kanäle	Email-Konfiguration	Logik	Analogausgänge
			Operatoren / Integratoren	RS485
				Uhrzeit
<p>Achtung :</p> <p>Die unten konfigurierten Verknüpfungen werden vom UMG507 in der Reihenfolge Verknüpfungs-Nummern 1, 2,...128 abgearbeitet. Der Zustand von mehrfach belegten Ziel-Merkern wird durch das Ergebnis der zuletzt abgearbeiteten Verknüpfung bestimmt</p>				
Nr.	Quelle 1	Operator	Quelle 2	Ziel-Merkel (82-144)
1/128	Dauerhaft inaktiv	AND	Dauerhaft inaktiv	82
2/128	Dauerhaft aktiv	Not AND	Digitaleingang	82
3/128	Nicht belegt	AND	Nicht belegt	82

Programming of I/O configuration

UMG507 konfigurieren

Vergleicher	EMAX-Kanäle	Email-Konfiguration	Logik	Analogausgänge	Operatoren / Integratoren	RS485	Uhrzeit
Netzwerk/Geratebezeichnung	Anschlussvariante	I/O Konfiguration	Kurzzeitunterbrechungen/Überströme	Wochen-Schaltuhr			
<p>I/O Konfiguration</p> <p>Kanal Nr. 1 (1..64)</p> <p>Quelle: Digitaleingang (Merkel-Nr. 3-8) 1 (1..6) (Quell-Merkel : 3)</p> <p>Ziel oder Aktion: Tarif Wirkarbeit aktivieren 1 (1..4)</p>							

Appendix

An extraction from the address list. The most important flags are listed. The flags have the format 8 Bit integer.

ADDR	Flag	Abbreviations	Description
3279	Flag No.: 1	tag_1	Permanently inactive
3280	Flag No.: 2	tag_2	Permanently active
3281	Flag No.: 3	tag_3	Digital input No. 1
3282	Flag No.: 4	tag_4	Digital input No. 2
3283	Flag No.: 5	tag_5	Digital input No. 3
3284	Flag No.: 6	tag_6	Digital input No. 4
3285	Flag No.: 7	tag_7	Digital input No. 5
3286	Flag No.: 8	tag_8	Digital input No. 6
3287	Flag No.: 9	tag_9	Short interruption UL1-N min active
3288	Flag No.: 10	tag_10	Short interruption UL2-N min active
3289	Flag No.: 11	tag_11	Short interruption UL3-N min active
3290	Flag No.: 12	tag_12	Short interruption UL1-N max active
3291	Flag No.: 13	tag_13	Short interruption UL2-N max active
3292	Flag No.: 14	tag_14	Short interruption UL3-N max active
3293	Flag No.: 15	tag_15	Short interruption IL1 max active
3294	Flag No.: 16	tag_16	Short interruption IL2 max active
3295	Flag No.: 17	tag_17	Short interruption IL3 max active
3296	Flag No.: 18	tag_18	Switching clock channel1
3297	Flag No.: 19	tag_19	Switching clock channel 2
3298	Flag No.: 20	tag_20	Switching clock channel 3
3299	Flag No.: 21	tag_21	Switching clock channel 4
3300	Flag No.: 22	tag_22	Switching clock channel 5
3301	Flag No.: 23	tag_23	Switching clock channel 6
3302	Flag No.: 24	tag_24	Switching clock channel 7
3303	Flag No.: 25	tag_25	Switching clock channel 8
3304	Flag No.: 26	tag_26	Switching clock channel 9
3305	Flag No.: 27	tag_27	Switching clock channel 10
3306	Flag No.: 28	tag_28	Switching clock channel11
3307	Flag No.: 29	tag_29	Switching clock channel12
3308	Flag No.: 30	tag_30	Switching clock channel 13
3309	Flag No.: 31	tag_31	Switching clock channel14
3310	Flag No.: 32	tag_32	Switching clock channel 15
3311	Flag No.: 33	tag_33	Switching clock channel16
3312	Flag No.: 34	tag_34	Switching clock channel17
3313	Flag No.: 35	tag_35	Switching clock channel18
3314	Flag No.: 36	tag_36	Switching clock channel 19
3315	Flag No.: 37	tag_37	Switching clock channel 20
3316	Flag No.: 38	tag_38	Switching clock channel 21
3317	Flag No.: 39	tag_39	Switching clock channel 22
3318	Flag No.: 40	tag_40	Switching clock channel 23
3319	Flag No.: 41	tag_41	Switching clock channel 24
3320	Flag No.: 42	tag_42	Comparator1
3321	Flag No.: 43	tag_43	Comparator 2
3322	Flag No.: 44	tag_44	Comparator 3
3323	Flag No.: 45	tag_45	Comparator 4
3324	Flag No.: 46	tag_46	Comparator 5
3325	Flag No.: 47	tag_47	Comparator 6
3326	Flag No.: 48	tag_48	Comparator 7
3327	Flag No.: 49	tag_49	Comparator 8
3328	Flag No.: 50	tag_50	Comparator 9
3329	Flag No.: 51	tag_51	Comparator 10
3330	Flag No.: 52	tag_52	Comparator 11
3331	Flag No.: 53	tag_53	Comparator 12
3332	Flag No.: 54	tag_54	Comparator 13
3333	Flag No.: 55	tag_55	Comparator 14
3334	Flag No.: 56	tag_56	Comparator 15
3335	Flag No.: 57	tag_57	Comparator 16

3336	Flag No.: 58	tag_58	Digital EMAX channel 1
3337	Flag No.: 59	tag_59	Digital EMAX channel 2
3338	Flag No.: 60	tag_60	Digital EMAX channel 3
3339	Flag No.: 61	tag_61	Digital EMAX channel 4
3340	Flag No.: 62	tag_62	Digital EMAX channel 5
3341	Flag No.: 63	tag_63	Digital EMAX channel 6
3342	Flag No.: 64	tag_64	Digital EMAX channel 7
3343	Flag No.: 65	tag_65	Digital EMAX channel 8
3344	Flag No.: 66	tag_66	Digital EMAX channel 9
3345	Flag No.: 67	tag_67	Digital EMAX channel 10
3346	Flag No.: 68	tag_68	Digital EMAX channel 11
3347	Flag No.: 69	tag_69	Digital EMAX channel 12
3348	Flag No.: 70	tag_70	Digital EMAX channel 13
3349	Flag No.: 71	tag_71	Digital EMAX channel 14
3350	Flag No.: 72	tag_72	Digital EMAX channel 15
3351	Flag No.: 73	tag_73	Digital EMAX channel 16
3352	Flag No.: 74	tag_74	Profibus flag 1
3353	Flag No.: 75	tag_75	Profibus flag 2
3354	Flag No.: 76	tag_76	Profibus flag 3
3355	Flag No.: 77	tag_77	Profibus flag 4
3356	Flag No.: 78	tag_78	Profibus flag 5
3357	Flag No.: 79	tag_79	Profibus flag 6
3358	Flag No.: 80	tag_80	Profibus flag 7
3359	Flag No.: 81	tag_81	Profibus flag 8
3360	Flag No.: 82	tag_82	Free flag for logical combinations
3361	Flag No.: 83	tag_83	Free flag for logical combinations
3362	Flag No.: 84	tag_84	Free flag for logical combinations
3363	Flag No.: 85	tag_85	Free flag for logical combinations
3364	Flag No.: 86	tag_86	Free flag for logical combinations
3365	Flag No.: 87	tag_87	Free flag for logical combinations
3366	Flag No.: 88	tag_88	Free flag for logical combinations
3367	Flag No.: 89	tag_89	Free flag for logical combinations
3368	Flag No.: 90	tag_90	Free flag for logical combinations
3369	Flag No.: 91	tag_91	Free flag for logical combinations
3370	Flag No.: 92	tag_92	Free flag for logical combinations
3371	Flag No.: 93	tag_93	Free flag for logical combinations
3372	Flag No.: 94	tag_94	Free flag for logical combinations
3373	Flag No.: 95	tag_95	Free flag for logical combinations
3374	Flag No.: 96	tag_96	Free flag for logical combinations
3375	Flag No.: 97	tag_97	Free flag for logical combinations
3376	Flag No.: 98	tag_98	Free flag for logical combinations
3377	Flag No.: 99	tag_99	Free flag for logical combinations
3378	Flag No.: 100	tag_100	Free flag for logical combinations
3379	Flag No.: 101	tag_101	Free flag for logical combinations
3380	Flag No.: 102	tag_102	Free flag for logical combinations
3381	Flag No.: 103	tag_103	Free flag for logical combinations
3382	Flag No.: 104	tag_104	Free flag for logical combinations
3383	Flag No.: 105	tag_105	Free flag for logical combinations
3384	Flag No.: 106	tag_106	Free flag for logical combinations
3385	Flag No.: 107	tag_107	Free flag for logical combinations
3386	Flag No.: 108	tag_108	Free flag for logical combinations
3387	Flag No.: 109	tag_109	Free flag for logical combinations
3388	Flag No.: 110	tag_110	Free flag for logical combinations
3389	Flag No.: 111	tag_111	Free flag for logical combinations
3390	Flag No.: 112	tag_112	Free flag for logical combinations
3391	Flag No.: 113	tag_113	Free flag for logical combinations
3392	Flag No.: 114	tag_114	Free flag for logical combinations
3393	Flag No.: 115	tag_115	Free flag for logical combinations
3394	Flag No.: 116	tag_116	Free flag for logical combinations
3395	Flag No.: 117	tag_117	Free flag for logical combinations
3396	Flag No.: 118	tag_118	Free flag for logical combinations

3397	Flag	No.: 119	tag_119	Free flag for logical combinations
3398	Flag	No.: 120	tag_120	Free flag for logical combinations
3399	Flag	No.: 121	tag_121	Free flag for logical combinations
3400	Flag	No.: 122	tag_122	Free flag for logical combinations
3401	Flag	No.: 123	tag_123	Free flag for logical combinations
3402	Flag	No.: 124	tag_124	Free flag for logical combinations
3403	Flag	No.: 125	tag_125	Free flag for logical combinations
3404	Flag	No.: 126	tag_126	Free flag for logical combinations
3405	Flag	No.: 127	tag_127	Free flag for logical combinations
3406	Flag	No.: 128	tag_128	Free flag for logical combinations
3407	Flag	No.: 129	tag_129	Free flag for logical combinations
3408	Flag	No.: 130	tag_130	Free flag for logical combinations
3409	Flag	No.: 131	tag_131	Free flag for logical combinations
3410	Flag	No.: 132	tag_132	Free flag for logical combinations
3411	Flag	No.: 133	tag_133	Free flag for logical combinations
3412	Flag	No.: 134	tag_134	Free flag for logical combinations
3413	Flag	No.: 135	tag_135	Free flag for logical combinations
3414	Flag	No.: 136	tag_136	Free flag for logical combinations
3415	Flag	No.: 137	tag_137	Free flag for logical combinations
3416	Flag	No.: 138	tag_138	Free flag for logical combinations
3417	Flag	No.: 139	tag_139	Free flag for logical combinations
3418	Flag	No.: 140	tag_140	Free flag for logical combinations
3419	Flag	No.: 141	tag_141	Free flag for logical combinations
3420	Flag	No.: 142	tag_142	Free flag for logical combinations
3421	Flag	No.: 143	tag_143	Free flag for logical combinations
3422	Flag	No.: 144	tag_144	Free flag for logical combinations

The free data arrays start with address 9000 and have the format 32bit float

ADDR	Description	Abbreviation
9000	Data array 1	darray_1
9002	Data array 2	darray_2
9004	Data array 3	darray_3
9006	Data array 4	darray_4
9008	Data array 5	darray_5
9010	Data array 6	darray_6
9012	Data array 7	darray_7
9014	Data array 8	darray_8
9016	Data array 9	darray_9
9018	Data array 10	darray_10
9020	Data array 11	darray_11
9022	Data array 12	darray_12
9024	Data array 13	darray_13
9026	Data array 14	darray_14
9028	Data array 15	darray_15
9030	Data array 16	darray_16
9032	Data array 17	darray_17
9034	Data array 18	darray_18
9036	Data array 19	darray_19
9038	Data array 20	darray_20
9040	Data array 21	darray_21
9042	Data array 22	darray_22
9044	Data array 23	darray_23
9046	Data array 24	darray_24
9048	Data array 25	darray_25
9050	Data array 26	darray_26
9052	Data array 27	darray_27
9054	Data array 28	darray_28
9056	Data array 29	darray_29
9058	Data array 30	darray_30
9060	Data array 31	darray_31
9062	Data array 32	darray_32

9064	Data array 33	darray_33
9066	Data array 34	darray_34
9068	Data array 35	darray_35
9070	Data array 36	darray_36
9072	Data array 37	darray_37
9074	Data array 38	darray_38
9076	Data array 39	darray_39
9078	Data array 40	darray_40
9080	Data array 41	darray_41
9082	Data array 42	darray_42
9084	Data array 43	darray_43
9086	Data array 44	darray_44
9088	Data array 45	darray_45
9090	Data array 46	darray_46
9092	Data array 47	darray_47
9094	Data array 48	darray_48
9096	Data array 49	darray_49
9098	Data array 50	darray_50
9100	Data array 51	darray_51
9102	Data array 52	darray_52
9104	Data array 53	darray_53
9106	Data array 54	darray_54
9108	Data array 55	darray_55
9110	Data array 56	darray_56
9112	Data array 57	darray_57
9114	Data array 58	darray_58
9116	Data array 59	darray_59
9118	Data array 60	darray_60
9120	Data array 61	darray_61
9122	Data array 62	darray_62
9124	Data array 63	darray_63
9126	Data array 64	darray_64

