

20 C0 Weather station 8F 905202

Use of the application program

Product family: Physical sensors
 Product type: Weather station for 8 sensors
 Manufacturer: Siemens
 Name: Weather station AP 257/01
 for 8 sensors
 Order no.: 5WG1 257-3AB01

Functional description

With this application program, it is possible to use the weather station for 8 sensors as a shutter control system with switching and alarm functions. The output of measured data recorded by the controller in EIS 5 or EIS 6 format is also supported.

Communication objects

Phys.Addr.		Program	
No.	Object name	Function	Type
01.01.001	20 CO Weather station 8F 905202		
0	Safety 1	Safety	1 Bit
1	Safety 2	Safety	1 Bit
2	Safety 3	Safety	1 Bit
3	Safety 4	Safety	1 Bit
4	Switch 1	On / Off	1 Bit
5	Switch 2	On / Off	1 Bit
6	Switch 3	On / Off	1 Bit
7	Switch 4	On / Off	1 Bit
8	Switch 5	On / Off	1 Bit
9	Switch 6	On / Off	1 Bit
10	Switch rain	On / Off	1 Bit
11	Activate safety 1-4	On / Off	1 Bit
12	Automatic Off	Automatic On / Off	1 Bit
13	Logic module 1, Input 1	AND / OR function	1 Bit
14	Logic module 1, Input 2	AND / OR function	1 Bit
15	Logic module 2, Input 1	AND / OR function	1 Bit
16	Logic module 2, Input 2	AND / OR function	1 Bit
18	Channel 2, Wind velocity	m/s-Value (EIS5)	2 Byte
19	Channel 3, Temperature	°C-Value (EIS5)	2 Byte
20	Channel 4, Dusk	Lux-Value (EIS5)	2 Byte
21	Channel 5, Light	Lux-Value (EIS5)	2 Byte
22	Channel 6, Light	Lux-Value (EIS5)	2 Byte
23	Channel 7, Light	Lux-Value (EIS5)	2 Byte
24	Channel 8, Light	Lux-Value (EIS5)	2 Byte

Max. number of group addresses: 31

Max. number of associations: 32

Obj	Object name	Function	Type	Flags
0	Safety 1	Safety	1 Bit	CT
1	Safety 2	Safety	1 Bit	CT
2	Safety 3	Safety	1 Bit	CT
3	Safety 4	Safety	1 Bit	CT
4	Switch 1	On / Off	1 Bit	CT
5	Switch 2	On / Off	1 Bit	CT
6	Switch 3	On / Off	1 Bit	CT
7	Switch 4	On / Off	1 Bit	CT
8	Switch 5	On / Off	1 Bit	CT
9	Switch 6	On / Off	1 Bit	CT
10	Switch rain	On / Off	1 Bit	CT
11	Activate safety 1-4	On / Off	1 Bit	CWTU
12	Automatic Off	Automatic On / Off	1 Bit	CWTU

Active safety channels send a "1" telegram if the set switching condition has been met and a "0" telegram if the condition has not been met.
 The switching condition consists of an "OR" logical connection of up to 3 sensors. Apart from the rain detector, two further freely selectable sensors can be monitored.
 The cyclical sending of the safety telegrams can be set.
 If no wind is detected for a period of 60 hours, all the safety functions (1-4) are triggered (check the wind rotor).

Active switching channels send a "1" telegram if the set switching condition has been met and a "0" telegram if the condition has not been met.
 The switching condition consists of a logical connection of two threshold comparators whose threshold value, switching direction and sensor assignment can be configured as required.
 Switch objects can be directly or indirectly linked to the logic modules.
 Each switch object can also be freely linked to safety objects. A connection guarantees that the current switching state is immediately resent when the safety function is enabled.

Depending on the parameter settings, this object sends a "1" telegram or a "0" telegram in the event of rain.

A "1" telegram triggers the safety function at the output objects 'Safety 1-4', provided that they are linked to this input object.

A "1" telegram prevents the output objects 'Switch 1-6' from generating telegrams until they are enabled by a "0" telegram, provided that they are linked with this input object.

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Obj	Object name	Function	Type	Flags
13	Logic module 1, Input 1	AND / OR function	1 Bit	CRTU
14	Logic module 1, Input 2	AND / OR function	1 Bit	CRTU
Inputs for logic module 1.				
If a switch object is directly linked with a logic module (AND/OR function), the current status of the switch object is determined from a logical connection between the output of the switching condition and the output of the logic module. If a switch object is indirectly linked with a logic module (extended logic function), the status of the switching condition and the type of extended logic function determines whether a change in the status of the switch object is sent on the bus.				
15	Logic module 2, Input 1	AND / OR function	1 Bit	CRTU
16	Logic module 2, Input 2	AND / OR function	1 Bit	CRTU
Inputs for logic module 2.				
If a switch object is directly linked with a logic module (AND/OR function), the current status of the switch object is determined from a logical connection between the output of the switching condition and the output of the logic module. If a switch object is indirectly linked with a logic module (extended logic function), the status of the switching condition and the type of extended logic function determines whether a change in the status of the switch object is sent on the bus.				
18	Channel 2, Wind velocity	m/s Value (EIS 5)	2 Byte	CRT
This communication object contains the EIS 5 value of the wind velocity that has been measured by the weather station.				
19	Channel 3, Temperature	°C Value (EIS 5)	2 Byte	CRT
This communication object contains the EIS 5 value of the temperature that has been measured by the weather station.				
20	Channel 4, Dusk	Lux Value (EIS 5)	2 Byte	CRT
This communication object contains the EIS 5 value of the lux value recorded by the dusk sensor.				
21	Channel 5, Brightness	Lux Value (EIS 5)	2 Byte	CRT
22	Channel 6, Brightness	Lux Value (EIS 5)	2 Byte	CRT
23	Channel 7, Brightness	Lux Value (EIS 5)	2 Byte	CRT
24	Channel 8, Brightness	Lux Value (EIS 5)	2 Byte	CRT
These communication objects contain the EIS 5 value of the lux value recorded by the relevant light sensor.				

Parameters

Input objects

Objects of measured values			
Input objects	Output objects	Behaviour on bus voltage recovery	Measuring channels
Safety 1-4 triggerable via object (11)	disabled		
automatic mode via object (12)	disabled		
Logic module 1	disabled		

Parameters	Settings
Safety 1-4 triggerable via object (11)	disabled enabled
It should be set via this parameter whether the safety functions can be triggered externally (e.g. emergency UP). In the setting "enabled", communication object 11 is available but it is no longer displayed if "disabled" is selected.	
Note: So that safety functions can be triggered via this object, the parameters "Linked with object (11) Trigger safety 1-4" of the required safety channel must also be set to "enabled".	
automatic mode via object (12)	disabled enabled
It should be set in this parameter whether the generation of telegrams by the output objects 'Switch 1-6' should be blocked externally. In the setting "enabled", communication object 12 is available but it is no longer displayed if "disabled" is selected.	
Note: So that the generation of telegrams by the switching channels can be disabled via this object, the parameters "Linked with object (12) Automatic mode off" of the required switching channel must also be set to "enabled".	
Logic module 1	disabled enabled
Logic module 1 can be enabled or disabled via this parameter.	
Logic module 2	disabled enabled
Logic module 2 can be enabled or disabled via this parameter.	

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Output objects

Input objects		Output objects	Behaviour on bus voltage recovery	Measuring channels
Safety 1	(SA 1)	disabled		
Safety 2	(SA 2)	disabled		
Safety 3	(SA 3)	disabled		
Safety 4	(SA 4)	disabled		
Switch 1	(SWI 1)	disabled		
Switch 2	(SWI 2)	disabled		
Switch 3	(SWI 3)	disabled		
Switch 4	(SWI 4)	disabled		
Switch 5	(SWI 5)	disabled		
Switch 6	(SWI 6)	disabled		

Parameters	Settings
Safety 1 (SA 1)	disabled enabled
Safety 2 (SA 2)	disabled enabled
Safety 3 (SA 3)	disabled enabled
Safety 4 (SA 4)	disabled enabled
The safety objects can be enabled or disabled via these parameters. The respective parameter pages and associated communication object (objects 0 to 3) are displayed if "enabled" is selected and removed if "disabled" is selected.	
Switch 1 (SWI 1)	disabled enabled
Switch 2 (SWI 2)	disabled enabled
Switch 3 (SWI 3)	disabled enabled
Switch 4 (SWI 4)	disabled enabled
Switch 5 (SWI 5)	disabled enabled
Switch 6 (SWI 6)	disabled enabled
The switch objects can be enabled or disabled via these parameters. The respective parameter pages and associated communication object (objects 4 to 9) are displayed if "enabled" is selected and removed if "disabled" is selected.	

Behaviour on bus voltage failure

Note:

The view of the parameters can be arranged individually.

Behaviour on bus voltage recovery 2	Logic configuration	SA 1	SA 1 A	SA 2	SA 2 A
Input objects	Output objects	Behaviour on bus voltage recovery			
Delay of init. telegrams after bus voltage recovery for Safety objects					
Safety objects	do not send at bus voltage recovery				
Switch objects	do not send at bus voltage recovery				
Objects of measured values	do not send at bus voltage recovery				
Behaviour of inputs					
Trigger safety objects 1-4	enabled				
Scan group address of Trigger safety 1-4 after bus voltage recovery	enabled				
Automatic mode	enabled				
Scan group address of Automatic off after bus voltage recovery	enabled				

Parameters	Settings
Delay of init. telegrams after bus voltage recovery for Safety objects	do not send at bus voltage recovery 10 sec, 11 sec, 12 sec , 13 sec, 14 sec, 15 sec, 16 sec, 17 sec, 18 sec, 19 sec, 20 sec, 21 sec, 22 sec, 23 sec, 24 sec
With this parameter, the delay for the initialisation telegrams after bus voltage recovery can be set for the enabled safety objects between 10 seconds and 24 seconds. It is also possible to suppress the transmission of the telegrams.	
Delay of init. telegrams after bus voltage recovery for Switch objects	do not send at bus voltage recovery 10 sec, 11 sec, 12 sec, 13 sec, 14 sec, 15 sec, 16 sec , 17 sec, 18 sec, 19 sec, 20 sec, 21 sec, 22 sec, 23 sec, 24 sec
With this parameter, the delay for the initialisation telegrams after bus voltage recovery can be set for the enabled switch objects between 10 seconds and 24 seconds. It is also possible to suppress the transmission of the telegrams.	
Delay of init. telegrams after bus voltage recovery for Objects of measured values	do not send at bus voltage recovery 10 sec, 11 sec, 12 sec, 13 sec, 14 sec, 15 sec, 16 sec, 17 sec, 18 sec, 19 sec, 20 sec , 21 sec, 22 sec, 23 sec, 24 sec
With this parameter, the delay for the initialisation telegrams after bus voltage recovery can be set for the enabled measured value objects between 10 seconds and 24 seconds. It is also possible to suppress the transmission of the telegrams.	

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Parameters	Settings
Behaviour of inputs Trigger safety objects 1-4	enabled disabled
If this parameter is enabled, the safety function is triggered after bus voltage recovery at all the enabled safety channels which are linked with this input. If the conditions for the triggering of the safety function are not met, the safety functions of these safety channels remain activated until the "Off" delay has elapsed. This corresponds to the behaviour on receipt of a "1" telegram at communication object 11.	
This parameter is only visible if input object 11 has been enabled with the parameter.	
Behaviour of inputs Scan group address of Trigger safety 1-4 after bus voltage recovery	enabled disabled
If this parameter is enabled, the current value of communication object 11 is requested by the bus after initialisation and thus updated to the current status once initialisation has been completed. This parameter is only visible if input object 11 "Safety 1-4 triggerable via object (11)" has been enabled. In the setting "disabled", the current value of communication object 11 is not requested by the bus.	
Behaviour of inputs Automatic mode	enabled disabled
If this parameter is enabled, the generation of telegrams is enabled after bus voltage recovery for all the enabled switching channels which are linked with this input. This corresponds to the behaviour on receipt of a "0" telegram at communication object 12. This parameter can only be set if input object 12 has been enabled. Switching channels whose logical connection is blocked by object 12 "Automatic Off", always operate in automatic mode.	
Behaviour of inputs Scan group address of Automatic off after bus voltage recovery	enabled disabled
If this parameter is enabled, the current value of communication object 12 is requested by the bus after initialisation and thus updated to the current status once initialisation has been completed. This parameter is only visible if input object 12 has been enabled. In the setting "disabled", the current value of communication object 12 is not requested by the bus.	

Behaviour on bus voltage recovery 2

Note:

This parameter window is only visible if logic module 1 has been enabled under "Input objects". The view of the parameters can be arranged individually.

Input objects	Output objects	Behaviour on bus voltage recovery
Measuring channels		Objects of measured values
SWI 3 A	SWI 4	SWI 4 A
SA 3	SA 3 A	SA 4
		SA 4 A
		SWI 1
		SWI 1 A
		SWI 2
		SWI 2 A
		SWI 3
Behaviour on bus voltage recovery 2		Logic configuration
Initialization inputs Logic module 1		E1 = logical 0 (Off), E2 = logical 0 (Off) <input checked="" type="checkbox"/>
Scan group addresses of Logic module 1 after bus voltage recovery		disabled <input checked="" type="checkbox"/>
Initialization inputs Logic module 2		E1 = logical 0 (Off), E2 = logical 0 (Off) <input checked="" type="checkbox"/>
Scan group addresses of Logic module 2 after bus voltage recovery		disabled <input checked="" type="checkbox"/>

Parameters	Settings
Initialization inputs Logic module 1	E1 = logical 0 (Off), E2 = disabled E1 = logical 1 (On), E2 = disabled
With this parameter, the objects of inputs 1+2 of logic module 1 (objects 13 + 14) are initialised with the indicated values after bus voltage recovery. If logic module 1 is only configured to evaluate an input channel, only the initialisation value for input 1 (object 13) can be parameterised.	
Scan group addresses of Logic module 1 after bus voltage recovery	disabled enabled
In the setting "enabled", the object values of the two inputs of logic module 1 can be queried by the bus after bus voltage recovery. The values sent by the bus overwrite the initialisation values for logic module 1 indicated above. If "disabled" is selected, the object values of the two inputs of logic module 1 are not queried by the bus after bus voltage recovery.	
Initialization inputs Logic module 2	E1 = logical 0 (Off), E2 = disabled E1 = logical 1 (On), E2 = disabled
With this parameter, the objects of inputs 1+2 of logic module 2 (objects 15 + 16) are initialised with the indicated values after bus voltage recovery. If logic module 2 is only configured to evaluate an input channel, only the initialisation value for input 1 (object 15) can be parameterised.	

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Parameters	Settings
Scan group addresses of Logic module 2 after bus voltage recovery	disabled enabled

In the setting "enabled", the object values of the two inputs of logic module 2 can be queried by the bus after bus voltage recovery. The values sent by the bus overwrite the initialisation values for logic module 2 indicated above. If "disabled" is selected, the object values of the two inputs of logic module 2 are not queried by the bus after bus voltage recovery.

Logic configuration

Note:

The view of the parameters can be arranged individually.

Input objects	Output objects	Behaviour on bus voltage recovery
Measuring channels	Objects of measured values	
SWI 3 A SWI 4 SWI 4 A SWI 5 SWI 5 A SWI 6 SWI 6 A,B SA 3 SA 3 A SA 4 SA 4 A SWI 1 SWI 1 A SWI 2 SWI 2 A SWI 3		
Behaviour on bus voltage recovery 2	Logic configuration	SA 1 SA 1 A SA 2 SA 2 A

Logic module 1

Configuration of inputs/Logic operation: 2 Channels AND

Input 1 of module: not invert

Input 2 of module: not invert

Logic module 2

Configuration of inputs/Logic operation: 2 Channels OR

Input 1 of module: not invert

Input 2 of module: not invert

Parameters	Settings
Logic module 1	

Configuration of inputs/Logic operation: 1 Channel
2 Channels AND
2 Channels OR
2 Channels XOR

The number of channels for logic module 1 can be defined with this parameter. If a 2-channel configuration is selected, the additional function is set where the output of logic module 1 is calculated from the two input objects.

Input 1 of module: not invert
invert

It can be defined with this parameter whether input 1 should be inverted by logic module 1 prior to processing.

Input 2 of module: not invert
invert

It can be defined with this parameter whether input 2 should be inverted by logic module 1 prior to processing.

Parameters	Settings
Logic module 2	
Configuration of inputs/Logic operation	1 Channel 2 Channels AND 2 Channels OR 2 Channels XOR
Input 1 of module	not invert invert
Input 2 of module	not invert invert

The number of channels for logic module 2 can be defined with this parameter. If a 2-channel configuration is selected, the additional function is set where the output of logic module 2 is calculated from the two input objects.

Input 1 of module: not invert
invert

It can be defined with this parameter whether input 1 should be inverted by logic module 2 prior to processing.

Input 2 of module: not invert
invert

It can be defined with this parameter whether input 2 should be inverted by logic module 2 prior to processing.

SA 1

Input objects	Output objects	Behaviour on bus voltage recovery
Measuring channels	Objects of measured values	
SWI 3 A SWI 4 SWI 4 A SWI 5 SWI 5 A SWI 6 SWI 6 A,B SA 3 SA 3 A SA 4 SA 4 A SWI 1 SWI 1 A SWI 2 SWI 2 A SWI 3		
Behaviour on bus voltage recovery 2	Logic configuration	SA 1 SA 1 A SA 2 SA 2 A

Number of monitored measuring channels: 1 Channel (Comparator A)

Rain triggers Safety: enabled

On delay: 3 sec

Off delay: 15 min

Bus voltage recovery triggers safety: disabled

Linked with object (11) Trigger safety 1-4: enabled

Interval for cyclical sending of safety telegrams: 4 min

Transmit following switch objects if safety is cleared: none

Parameters	Settings
Number of monitored measuring channels	Only rain detector 1 Channel (Comparator A) 2 Channels (Comparator A,B)
Rain triggers Safety	enabled disabled

It can be defined with this parameter how many measuring channels are used to evaluate the current safety function. As soon as more than one comparator is evaluated, the outputs of the threshold comparators and an enabled rain detector are linked with a logic "OR" function.

It can be selected here whether the respective safety object should be triggered in the event of rain.

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Parameters	Settings
On delay	1 sec, 2 sec, 3 sec , 4 sec, 5 sec, 7 sec, 9 sec, 11 sec, 13 sec, 15 sec, 18 sec, 21 sec, 24 sec, 27 sec, 30 sec, 35 sec, 40 sec, 45 sec, 50 sec, 1 min, 1 min 30 sec, 2 min, 3 min, 4 min, 5 min, 10 min, 15 min, 20 min, 30 min, 1 hr
This parameter defines the minimum duration of a limit violation until the safety function is triggered. Transient violations whose duration is shorter than the set "On" delay do not cause the safety function to be triggered.	
Off delay	1 min, 2 min, 3 min, 4 min, 5 min, 7 min, 9 min, 11 min, 13 min, 15 min , 18 min, 21 min, 24 min, 27 min, 30 min, 35 min, 40 min, 45 min, 50 min, 1 hr, 1 hr 30 min, 2 hr, 2 hr 30 min, 3 hr, 4 hr, 8 hr, 12 hr, 16 hr, 20 hr, 24 hr
If the respective safety function is triggered, it is only enabled again once the "Off" delay specified in this parameter has elapsed. Limit violations within the set "Off" delay cause the "Off" delay to be restarted. The "Off" delay thus applies each time from the point of the last limit violation.	
Bus voltage recovery triggers safety	enabled disabled
It can be set with this parameter whether the safety function should be triggered after bus voltage recovery	
Linked with object (11) Trigger safety 1-4	enabled disabled
If the logic function is enabled, a "1" telegram at object "Activate safety 1-4" (object 11) triggers the safety function. To do so, the parameter "Activate safety 1-4" must however first be enabled on the "Input objects" parameter page.	
Interval for cyclical sending of safety telegrams	no cyclical sending, 1 min, 2 min, 3 min, 4 min , 5 min, 7 min, 9 min, 11 min, 13 min, 15 min, 18 min, 21 min, 24 min, 27 min, 30 min, 35 min, 40 min, 45 min, 50 min, 1 hr, 1 hr 30 min, 2 hr, 2 hr 30 min, 3 hr, 4 hr, 8 hr, 12 hr, 16 hr, 20 hr, 24 hr
If an interval is selected, a telegram with the current value of the safety object is sent cyclically once the period set in this parameter has elapsed.	

Parameters	Settings
Transmit following switch objects if safety is cleared	<p>none</p> <p>1 / 1,2 / 1,2,3 / 1,2,3,4 / 1,2,3,4,5 / 1,2,3,4,5,6 / 1,2,3,4,6 / 1,2,3,5 / 1,2,3,5,6 / 1,2,3,6 / 1,2,4 / 1,2,4,5 / 1,2,4,5,6 / 1,2,4,6 / 1,2,5 / 1,2,5,6 / 1,2,6 / 1,3 / 1,3,4 / 1,3,4,5 / 1,3,4,5,6 / 1,3,4,6 / 1,3,5 / 1,3,5,6 / 1,3,6 / 1,4 / 1,4,5 / 1,4,5,6 / 1,4,6 / 1,5 / 1,5,6 / 1,6 / 2 / 2,3 / 2,3,4 / 2,3,4,5 / 2,3,4,5,6 / 2,3,4,6 / 2,3,5 / 2,3,5,6 / 2,3,6 / 2,4 / 2,4,5 / 2,4,5,6 / 2,4,6 / 2,5 / 2,5,6 / 2,6 / 3,4 / 3,4,5 / 3,4,5,6 / 3,4,6 / 3,5 / 3,5,6 / 3,6 / 4 / 4,5 / 4,5,6 / 4,6 / 5 / 5,6 / 6</p>

If the safety object changes from "1" to "0", the current value of the switch objects selected here is sent once the safety telegram has been transmitted.

If this is carried out by several safety objects simultaneously, the telegram for the switch object is only sent once after the last safety telegram has been transmitted.

SA 1 A

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Parameters	Settings
Detection on	Measuring channel 1, terminals 4,5,6 Measuring channel 2, terminals 7,8,9 Measuring channel 3, terminals 10,11,12 Measuring channel 4, terminals 13,14,15 Measuring channel 5, terminals 16, 17,18 Measuring channel 6, terminals 19, 20, 21 Measuring channel 7, terminals 22,23,24 Measuring channel 8, terminals 25,26,27
	This parameter defines which measuring channel is evaluated by the respective comparator. It is possible to configure both comparators on the same measuring channel to enable for example an area to be checked with only one safety object.
Detector	Wind Temperature Dusk Light Voltage Percent
	The same detector as the one entered on the "Measuring channels" parameter page should be selected. If this is not carried out, the indicated threshold values do not match the sensor outputs.
Threshold	4 km/h, 1.1 m/s 38 km/h, 10.6 m/s (textile sun blind) 58 km/h, 16.1 m/s (shutter) 110 km/h, 30.6 m/s
	Once the correct detector type has been entered, the required threshold value can be selected. The value indicated is the starting value. Depending on the switching direction, the finishing value lies under (measured value > threshold) or above (measured value < threshold) the indicated value. The displayed threshold values and units vary depending on the selected detector.
A changes on logical 1 (On) if	Measured value < Threshold Measured value > Threshold
	It can be defined with this parameter whether the comparator switches to logical 1 if the measured value is less than or greater than the threshold. In the case of the safety objects, the switching direction can only be freely selected for comparator A.

SWI 1

Note:

The functions and parameters of switching channels SWI 1 A to SWI 6 A are identical.

Behaviour on bus voltage recovery 2	Logic configuration	SA 1	SA 1 A	SA 2	SA 2 A
Input objects	Output objects	Behaviour on bus voltage recovery			
Measuring channels		Objects of measured values			
SWI 3 A	SWI 4	SWI 4 A	SWI 5	SWI 5 A	SWI 6
SA 3	SA 3 A	SA 4	SA 4 A	SWI 1	SWI 1 A
		SWI 2 SWI 2 A SWI 3			
Number of evaluated measuring channels		2 Channel (Comparator A)			
On delay		5 min			
Off delay		15 min			
Linked with object Automatic mode off		enabled			
Logic operation switch function with logic 1 (if logic module 1 enabled)		no logic operation			
Logic operation switch function with logic 2 (if logic module 2 enabled)		no logic operation			

Parameters	Settings
Number of evaluated measuring channels	1 Channel (Comparator A) 2 Channels (Comparator A, B)
It can be defined with this parameter how many measuring channels are used to evaluate the switch function.	
Logic operation between the comparators	A AND B A OR B
The type of logic operation between comparators A and B can be defined with this parameter.	
On delay	1 min, 2 min, 3 min, 4 min, 5 min , 7 min, 9 min, 11 min, 13 min, 15 min, 18 min, 21 min, 24 min, 27 min, 30 min, 35 min, 40 min, 45 min, 50 min, 1 hr, 1 hr 30 min, 2 hr, 2 hr 30 min, 3 hr, 4 hr, 8 hr, 12 hr, 16 hr, 20 hr, 24 hr
This parameter defines the minimum duration of a limit violation until the switch function is set. Transient violations whose duration is shorter than the set "On" delay do not lead to a change in the status to "1" (On).	

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Parameters	Settings
Off delay	1 min, 2 min, 3 min, 4 min, 5 min , 7 min, 9 min, 11 min, 13 min, 15 min, 18 min, 21 min, 24 min, 27 min, 30 min, 35 min, 40 min, 45 min, 50 min, 1 hr, 1 hr 30 min, 2 hr, 2 hr 30 min, 3 hr, 4 hr, 8 hr, 12 hr, 16 hr, 20 hr, 24 hr
If the current switching state is "1" (On), it only reverts to the "0" (Off) state once the "Off" delay has elapsed. Limit violations within the set "Off" delay cause the "Off" delay to be restarted. The "Off" delay thus applies each time from the point of the last limit violation.	
Linked with object (12) Automatic mode off	enabled disabled
If the logic operation is enabled, a "1" telegram at the object "Automatic Off" (object 12) prevents the generation of telegrams for the respective switch object until the receipt of a "0" telegram. To do so, the object "Automatic Off" must however first be enabled on the "Input objects" parameter page.	
Logic operation switch function with logic 1 (if logic module 1 is enabled)	no logic operation extended AND function OR function
Logic operation switch function with logic 2 (if logic module 2 is enabled)	no logic operation extended AND function OR function
no logic operation: The status of the respective logic module is not taken into consideration. extended: The output of the respective logic module is not linked to the object status but determines whether and which telegrams should be sent (see subsequent parameters). OR, AND function: The output of the respective logic module is logically connected to the output value of the switch object. Delay times are not used for the states of the logic modules. If there is a change in the status of the value produced by the logic operation, the new value is immediately adopted and sent as a telegram, provided that the generation of telegrams has not been blocked by the object "Automatic Off" and the extended logic operation has not been disabled.	

Parameters	Settings
Logic module 1 – output blocks switch telegrams	logical 1 blocks logical 0 telegrams logical 1 blocks logical 1 telegrams logical 1(0) blocks logical 1(0) telegrams logical 1 blocks logical 0 and 1 telegrams
Logic module 2 – output blocks switch telegrams	logical 1 blocks logical 0 telegrams logical 1 blocks logical 1 telegrams logical 1(0) blocks logical 1(0) telegrams logical 1 blocks logical 0 and 1 telegrams
	logical 1 blocks logical 0 telegrams: If the output of the logic module is "1", any "0" telegrams of the respective switching channel are suppressed. logical 1 blocks logical 1 telegrams: If the output of the logic module is "1", any "1" telegrams of the respective switching channel are suppressed. logical 1(0) blocks logical 1(0) telegrams: If the output of the logic module is "1", any "1" telegrams of the respective switching channel are suppressed. If the output of the logic module is "0", any "0" telegrams of the respective switching channel are suppressed. logical 1 blocks logical 0 and 1 telegrams: If the output of the logic module is "1", both "0" and "1" telegrams of the respective switching channel are suppressed. This corresponds to the effect produced by the input object "Automatic Off". Additional "Automatic Off" functions can therefore be made available for switch objects.

SWI 1 A

Note:

The functions and parameters of switching channels SWI 1 A to SWI 6 A are identical.

Behaviour on bus voltage recovery 2	Logic configuration	SA 1	SA 1 A	SA 2	SA 2 A
Input objects	Output objects	Behaviour on bus voltage recovery			
Measuring channels		Objects of measured values			
SWI 3 A	SWI 4	SWI 4 A	SWI 5	SWI 5 A	SWI 6
SA 3	SA 3 A	SA 4	SA 4 A	SWI 1	SWI 1 A
***** Comparator A *****					
Detection on		Measuring channel 5, terminals 16,17,18			
Detector		Brightness			
Threshold		27000 Lux			
A changes on logical 1 (On) if		Measured value > Threshold			

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Parameters	Settings
Detection on	Measuring channel 1, terminals 4,5,6 Measuring channel 2, terminals 7,8,9 Measuring channel 3, terminals 10,11,12 Measuring channel 4, terminals 13,14,15 Measuring channel 5, terminals 16, 17,18 Measuring channel 6, terminals 19, 20, 21 Measuring channel 7, terminals 22,23,24 Measuring channel 8, terminals 25,26,27
	This parameter defines which measuring channel is evaluated by the respective comparator. It is possible to configure both comparators on the same measuring channel to enable for example an area to be checked with only one switch object.
Detector	Wind Temperature Dusk Light Voltage Percent
	The same detector as the one entered on the "Measuring channels" parameter page should be selected. If this is not carried out, the indicated threshold values do not match the sensor outputs.
Threshold	1000 Lux, 1500 Lux, 2000 Lux, 2500 Lux, 3000 Lux, 3500 Lux, 4000 Lux, 4500 Lux, 5000 Lux, 6000 Lux, 7000 Lux, 8000 Lux, 9000 Lux, 10000 Lux, 11500 Lux 13000 Lux 14500 Lux, 16000 Lux 17500 Lux, 19000 Lux, 20500 Lux, 22000 Lux, 23500 Lux, 25000 Lux, 27000 Lux, 29000 Lux, 31000 Lux, 33000 Lux, 35000 Lux, 37000 Lux
	Once the correct detector type has been entered, the required threshold value can be selected. The value indicated is the starting value. Depending on the switching direction, the finishing value lies under (measured value > threshold) or above (measured value < threshold) the indicated value. The displayed threshold values and units vary depending on the selected detector.
A changes on logical 1(On) if	Measured value < Threshold Measured value > Threshold
	It can be defined with this parameter whether the comparator switches to logical 1 if the measured value is less than or greater than the threshold.

Objects of measured values

Input objects	Output objects	Behaviour on bus voltage recovery
Measuring channels		
Objects of measured values		
Object of measured value, Channel 1	<input checked="" type="checkbox"/> disabled	
Switch object for rain	<input checked="" type="checkbox"/> disabled	
Object of measured value, Channel 2	<input checked="" type="checkbox"/> disabled	
Object of measured value, Channel 3	<input checked="" type="checkbox"/> disabled	
Object of measured value, Channel 4	<input checked="" type="checkbox"/> disabled	
Object of measured value, Channel 5	<input checked="" type="checkbox"/> disabled	
Object of measured value, Channel 6	<input checked="" type="checkbox"/> disabled	
Object of measured value, Channel 7	<input checked="" type="checkbox"/> disabled	
Object of measured value, Channel 8	<input checked="" type="checkbox"/> disabled	
Interval for cyclical sending of active objects of measured values	<input checked="" type="checkbox"/> no cyclical sending	

Parameters	Settings
Object of measured value, Channel 1	<input checked="" type="checkbox"/> disabled enabled
	enabled: Measured value object for measuring channel 1 is used. Only possible if measuring channel 1 is not configured for the rain detector. disabled: Measured value object for measuring channel 1 is not used or measuring channel 1 is configured for the rain detector. The associated communication object is no longer displayed.
Switch object for rain	<input checked="" type="checkbox"/> disabled sends logical 1 (On) – telegram if rain sends logical 1 (Off) – telegram if rain
	disabled: Switch object is not used. The associated communication object is no longer displayed. sends logical 1 (On) – telegram if rain sends logical 0 (Off) – telegram if rain: Switch object should be used for rain. The associated communication object is displayed. Depending on the setting, a "0" or "1" telegram is produced in the event of rain. When the rain stops, the switch object is reset after a delay.
Object of measured value, Channel 2	<input checked="" type="checkbox"/> disabled enabled
Object of measured value, Channel 3	<input checked="" type="checkbox"/> disabled enabled
Object of measured value, Channel 4	<input checked="" type="checkbox"/> disabled enabled
Object of measured value, Channel 5	<input checked="" type="checkbox"/> disabled enabled
Object of measured value, Channel 6	<input checked="" type="checkbox"/> disabled enabled
Object of measured value, Channel 7	<input checked="" type="checkbox"/> disabled enabled

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Parameters	Settings
Object of measured value, Channel 8	disabled enabled
enabled: The detector that is assigned to the measuring channel can send its measured values via a measured value object on the bus. The respective communication object is displayed. disabled: The sending of the respective measured value on the bus is not required. The respective communication object is not displayed.	

Interval for cyclical sending of enabled objects of measured values

no cyclical sending
1 min, 2 min, 3min, 4min, 5min, 7 min, 9 min, 11 min, 13 min, 15 min, 18 min, 21 min, 24 min, 27 min, 30 min, 35 min, 40 min, 45 min, 50 min, 1 hr, 1 hr 30 min, 2 hr, 2 hr 30 min, 3 hr, 4 hr, 8 hr, 12 hr, 16 hr, 20 hr, 24 hr

Each enabled measured value object is updated cyclically (approx. every 5 seconds) based on the current measurements. The setting "no cyclical sending" only disables the automatic generation of telegrams and not the update of enabled measured value objects. The selection of a period causes the enabled measured value objects to be sent cyclically at the interval selected.

Parameters	Settings
Measuring channel 2, detector	disabled Rain Wind 0:35 m/s Temperature -20:40 °C Dusk 0:255 Lux Light 0:40 KLux Voltage 0:10V Percent 0:100%
Measuring channel 3, detector	disabled Rain Wind 0:35 m/s Temperature -20:40 °C Dusk 0:255 Lux Light 0:40 KLux Voltage 0:10V Percent 0:100%
Measuring channel 4, detector	disabled Rain Wind 0:35 m/s Temperature -20:40 °C Dusk 0:255 Lux Light 0:40 KLux Voltage 0:10V Percent 0:100%
Measuring channel 5, detector	disabled Rain Wind 0:35 m/s Temperature -20:40 °C Dusk 0:255 Lux Light 0:40 KLux Voltage 0:10V Percent 0:100%
Measuring channel 6, detector	disabled Rain Wind 0:35 m/s Temperature -20:40 °C Dusk 0:255 Lux Light 0:40 KLux Voltage 0:10V Percent 0:100%
Measuring channel 7, detector	disabled Rain Wind 0:35 m/s Temperature -20:40 °C Dusk 0:255 Lux Light 0:40 KLux Voltage 0:10V Percent 0:100%
Measuring channel 8, detector	disabled Rain Wind 0:35 m/s Temperature -20:40 °C Dusk 0:255 Lux Light 0:40 KLux Voltage 0:10V Percent 0:100%

Measuring channels

Input objects	Output objects	Behaviour on bus voltage recovery
Measuring channels		
Measuring channel 1, detector	Rain	
Measuring channel 2, detector	Wind 0:35 m/s	
Measuring channel 3, detector	Temperature -20:40 °C	
Measuring channel 4, detector	Dusk 0:255 Lux	
Measuring channel 5, detector	Brightness 0:40 KLux	
Measuring channel 6, detector	Brightness 0:40 KLux	
Measuring channel 7, detector	Brightness 0:40 KLux	
Measuring channel 8, detector	Brightness 0:40 KLux	

Parameters	Settings
Measuring channel 1, detector	disabled Rain Wind 0:35 m/s Temperature -20:40 °C Dusk 0:255 Lux Light 0:40 KLux Voltage 0:10V Percent 0:100%

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Parameters	Settings
<p>The corresponding detector must be set for each measuring channel.</p> <p>Note:</p> <ol style="list-style-type: none">1. If a rain detector is used, it <u>must</u> be connected to channel 1.2. Channel 2 of the weather station is configured in terms of hardware at the factory (jumper + DIP switch) so that it can <u>only</u> be used for a digitally operated wind rotor (accessories). Digital wind rotors (accessories) <u>must</u> therefore be connected to channel 2. Analogue wind rotors could be connected to channel 1 or channels 3-8.3. The associated parameter entry "Detection on" should be noted and modified for the comparators of the switching and safety channels.	

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Notes