# SIEMENS

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#### 07B0 A15 Switching Actuator 982003

#### Use of the application program

Product family:	Output
Product type:	Binary
Manufacturer:	Siemens
Name:	Switching Actuator N 513/11
Order no.:	5WG1 513-1AB11
Name:	Switching Actuator N 512/11
Order no.:	5WG1 512-1AB11
Name:	Switching Actuator N 562/11

5WG1 562-1AB11

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#### 1. Functional description

The N 513/11 switching actuator is a 3 MU (module units) wide device for DIN-rail mounting with N-system dimensions and 3 switching outputs (relay contacts for 230/400V AC, 20 AX, C-load, in each case with load current measuring and monitoring (load check).

The N 512/11 switching actuator is a 3 MU (module units) wide device for DIN-rail mounting with N-system dimensions and 3 switching outputs (relay contacts for 230/400V AC, 16 AX, C-load, in each case with load current measuring and monitoring (load check).

The N 562/11 switching actuator is a 3 MU (module units) wide device for DIN-rail mounting with N-system dimensions and 3 switching outputs (relay contacts for 230/400V AC, 10 AX, C-load, in each case with load current measuring and monitoring (load check).

Each switching actuator main module N 513/11, N 512/11 or N 562/11 can switch three groups of electrical consumers, independent of each other, via its three relay contact outputs. The bus is connected via a bus terminal block. The actuator electronics are supplied via the bus voltage.

Via a special jumper up to four (4) N 513/21 submodules (expansion modules) (with 3 switching outputs for AC 230/400 V, 20 AX, C-load, in each case with load current measuring and monitoring) or N 512/21 (with 3 switching outputs for AC 230/400 V, 16 AX, C-load, in each case with load current measuring and monitoring) or N 562/21 submodules (expansion modules) (with 3 switching outputs for AC 230/400 V, 10 AX, C-load, in each case with load current measuring and monitoring) or N 562/21 submodules (expansion modules) (with 3 switching outputs for AC 230/400 V, 10 AX, C-load, in each case with load current measuring and monitoring) can be connected in series to a switching actuator main module. This facilitates expansion of the switching actuator from 3 to a maximum of 15 switching outputs and accordingly matching it flexibly to the number of loads to be switched.



Figure 1:main module and submodule

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The electronics of the main module and of all submodules N 513/21, N 512/11 or N 562/21 connected to the main module are powered via the bus. The bus is connected to the main module exclusively via a bus connection block.

#### Bus mode / direct mode

5 green light-emitting diodes (LEDs) on the top of the main module (see figure 2, A5) indicate which module has been selected (LED = ON). To select a module, you tap the "Direct mode" button (see figure 2, A6) repetitively until the LED for the wanted module A...E lights up. If any of the LEDs A...E flash, then a fault is detected for this module. For example, this is the case if more modules are set than are actually connected or if the set module type does not correspond with the module actually connected or if a module was detected as faulty.



Figure 2:Indication and control elements

You switch between bus and direct mode with the direct mode button (see figure 2, A6) with an integrated yellow LED (see figure 2, A7). If this button is tapped, then which of the modules A to E (see figure 2, A5) was selected last is indicated for 30 seconds as well as the switching state of the relevant outputs by the red LEDs integrated in the buttons 1 to 3 (see figure 2, A9; contact closed: LED = ON, contact open: LED = OFF).

However, if the button to switch on direct mode is held down for at least 3 seconds, then the yellow LED to indicate direct mode comes on permanently. In direct mode, each output of the currently selected module can be switched via the allocated button on the top of the main module through a toggling function: a first press on a button switches on an output if it is switched off, a second press switches it off again. The switching state of the output is indicated by the red LED incorporated in the button. (Note: Buttons 4 to 6 and the incorporated LEDs are not used in the N 513/11, N 512/11 and N 562/11.) To change the switching state of the outputs of another module, this must be selected first. To do this, you must tap the direct mode button several times until the LED of the desired module A to E illuminates. You cannot select modules which are not configured as connected.

You use a parameter to set whether direct mode can be switched on permanently or for a given period of time. Direct mode is set in the factory to a time-limited on-time of 15 minutes. The timer limiting the on-time is restarted with the configured on-time each time the button is pressed. After the on-time has elapsed without a further key press, direct mode is switched off automatically and bus mode is re-enabled accordingly (if communication via the bus is possible). Alternatively, direct mode can be ended at any time by pressing the direct mode button for at least 3 seconds. The yellow LED for indicating direct mode then goes out and the actuator is again in bus mode. In bus mode, pressing the button for direct switching of an output off or on does not work. If direct mode is switched on via the bus, received switching and scene-recall commands are buffered and automatically rerun (i.e. executed) after switching back to bus mode.

#### Behavior on power failure / recovery

Because the actuator electronics are powered via the bus, a mains power failure leads only to functional failure of the actuator if the bus voltage also fails as a consequence of the mains power failure. However, the parameters for the switching state of each actuator output on bus voltage failure and after bus voltage recovery can be set individually: as before bus voltage failure, ON or OFF.

#### Application program

The switching actuator N 513/11, N 512/11 or N 562/11 needs the application program "07B0 A15 Switching actuator 982002". This controls the outputs both from the main module and all connected extensions.

In bus mode, for each actuator output a communication object can be available for switching, for manual override, for forced control, for a logic operation and for status request. Furthermore, if required, time-limited switching (e.g. for lighting while cleaning) instead of lights permanently on can be enabled for each output via an optional "Night mode" object, if need be with a warning before switching off by multiple switching the output on and off (flashing). You can also select whether all outputs of a module are to be configured jointly and thus identically or whether each output is to be configured separately and individually.

Amongst others, the application program includes optional measuring and monitoring of the load current for each output on load failure and/or overload, simultaneous switching of all 3 outputs (3-phase switching), converting a speed preset as a percentage into 1- to 3-stage switching commands (fan speed control), conversion of a valve position preset as a percentage into a pulse width modulated (PWM) switching command (thermal drive control), a switching cycle and operating hours count with threshold monitoring for each output and an inte-

grated 8-bit scene control, in which each output can be incorporated into up to 8 scenes.

Engineering Tool Software (ETS), version 3.0 f or higher, is needed to load the application program.

<u>Note</u>: If the N 513/11, N 512/11 or N 562/11 application program is "unloaded" with the ETS, then you will no longer be able to enable direct mode, i.e. the LED status display and local switching of the outputs using the buttons on the front panel of the actuator are disabled. Only after reloading the application program can you reenable the status display and direct mode.

#### "Device overview" parameter window

This parameter window indicates and sets the number and type of connected submodules. Ex works, the parameter "Number of connected submodules" in the N 513/11, N 512/11 or N 562/11 is set to "4". This ensures that every output of connected submodules can be switched locally in direct mode, even via a main module which has not yet been configured. For all unconnected submodules, the corresponding green LED on the front panel of the main module for indicating the selected device (see figure 2, A5) flashes to signal that the number configured is not the same as the actual number of connected submodules, or rather you detect a bug.

#### "Common functions" parameter window

You use this parameter window to set together for all modules and all outputs the direct mode on-time and the transmission blocking period for status objects. This also determines whether and when status and limit value objects are to be sent and whether the integrated 8-bit scene control is to be enabled.

#### "X: Presettings" parameter window"

You can select this parameter window (X means the module designation A...E) for each module (main module A and configured submodules B...E) respectively. Use this parameter window to allocate the wanted function to the outputs of the relevant module. Use the "Special function" parameter to set whether none or any of the following special functions is/are wanted:

- Configure all outputs identically
- 3-phase switching
- Fan speed control 1-stage
- Fan speed control 2-stage
- Fan speed control 3-stage

If you do not want any special function, then you can set one of the following modes for each output: Normal mode Timer mode Thermal drive control mode Figure 3 shows a block diagram of how an output is controlled in "Normal mode".



Figure 3: Block diagram of an output in normal mode

#### "X-n: Behavior normal mode" parameter window

The header (or name) of this window contains the corresponding module designation (X = A...E), the corresponding output designation (n = 1...3) and the designation of the allocated mode for this output. If a special function has been allocated to an output (or to several jointly), then the reference to the allocated special function is not contained in the parameter window header (name) but is written in the window itself above the first parameter.

You use this parameter window to set:

- whether the output is to work as a NO (normally open) contact or as an NC (normally closed) contact,
- whether a night mode with limited on-period is wanted and how long the on-period is to be,
- whether there is to be a warning in night mode before switching off,
- whether an ON delay is to be included,
- whether an OFF delay is to be included,
- whether a logic operation is wanted,
- whether there is to be a permanent or time-limited manual override option,
- whether a forced control is to be included,
- which switching status the output is to assume in the event of a bus voltage failure,

- which starting value the switching object and respectively a logic object (if available) are to assume after bus voltage recovery.

#### "X-n: Behavior timer mode" parameter window

If "Timer mode" has been allocated to an output, then you can set the following parameters via this window:

- whether receiving another ON command can retrigger a started ON time to the configured value,
- whether the output is to work as a NO contact or as an NC contact,

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- whether there is to be a warning before switching off,
- how long the output is to be switched on,
- whether a logic operation is wanted,
- whether a forced control is to be included,
- which switching status the output is to assume in the event of a bus voltage failure and which one the output and a logic object (if available) are to assume after bus voltage recovery.

# "X-n: Behavior thermal drive control mode" parameter window

If "Thermal drive control mode" has been allocated to an output, then you can set the following parameters via this window:

- whether the output is to be controlled by a 1-bit or an 8-bit object,
- whether the valve in the de-energised state is to be open or closed,
- up to which actuating variable value the valve is to remain closed,
- from which actuating variable value the valve is to be completely open already,
- to which least value (hysteresis) the actuating variable must be changed in order to compute a new ON or OFF time,
- which cycle time is to be included for pulse width modulation (PWM) ,
- whether the valve is to be opened once every 72 hours to avoid a blockage,
- which switching status the output is to assume in the event of a bus voltage failure and which after bus voltage recovery.

#### "X-n: Evaluation normal mode" parameter window

The header (or name) of this window contains the corresponding module designation (X = A...E), the corresponding output designation (n = 1...3) and the designation of the allocated mode for this output. If a special function has been allocated to an output (or to several jointly), then the reference to the allocated special function is not contained in the parameter window header (name) but is written in the window itself above the first parameter.

You use this parameter window to set:

- whether a switching status object is to be added to this output,
- whether a switching cycle count is to take place without or with monitoring of an upper limit,
- whether an operating hours count is to take place without or with monitoring of an upper limit,
- whether the load current is to be monitored for underload and/or overload,

- at which set point value the load current is to be monitored,
- from when a deviation (hysteresis) of the load current set point value is to be reported,
- whether and when the current load current value is to be sent via the bus,
- to which value the load current has to be changed before it is to be sent again and
- on which cycle time elapsing the load current is to be sent again.

#### "X-n: Evaluation timer mode" parameter window

See description for parameter window "X-n: Evaluation normal mode".

#### "X-n: Evaluation thermal drive control mode" parameter window

If the "Thermal drive control mode" function has been allocated to an output, then you use this window to select whether a switching status object is to be added to this output.

In this mode, all other parameters normally contained in the "Evaluation" parameter window are canceled.

#### "X-n: 8-bit scene control" parameter window

The header (or name) of this window contains the corresponding module designation (X = A...E) and the corresponding output designation (n = 1...3).

If 8-bit scene control has been enabled in the switching actuator main module, then you use this window to set in which scenes the corresponding output is to be integrated (max. 8 assignments possible).

#### **Special functions**

# Configure all outputs identically

If you select the special function "Configure all outputs identically", then only setting of the mode and the "Behavior" and "Evaluation" parameter windows will be offered for output 1, because both other outputs will automatically be configured identically to output 1.

#### 3-phase switching

If you select the special function "3-phase switching", then only setting of the mode and the "Behavior" parameter windows will be offered for output 1, because both other outputs will automatically be configured identically to output 1. In "3-phase switching", you can only select "Normal mode" and "Timer mode" as the mode for output 1. The parameter windows "Evaluation" and "8-bit scene control" (if enabled) are visible for all outputs.

#### Fan speed control 1...3-stage

If you select the special function "Fan speed control 1stage", then the mode for outputs 2 and 3 is still freely settable. If you select "Fan speed control 2-stage", then the mode for output 3 is still freely settable. In each case, the corresponding "Behavior", "Evaluation" and "8-bit scene control" (if enabled) parameter windows are then also added to the freely settable outputs automatically.

#### "X: Fan speed control" parameter window

If the "Fan speed control" function has been allocated to one or more outputs, then you can set the following parameters via this window:

- whether the actuating variables for heating and cooling mode are transferred via a joint object or via separate objects,
- from which control value in each case to switch from OFF to fan speed stage 1, from this to fan speed stage 2 and from this to fan speed stage 3,
- the difference by which one of the threshold values for the change-over to the next higher fan speed stage must be under-run in order for there to be an automatic switch-over to the next lower fan speed stage,
- whether in manual mode the wanted fan speed stage is set via a percentage or via the switching stages 0...3,
- at which fan speed stage to switch on a bus voltage failure and on bus voltage recovery and
- whether status objects are to be added for "Automatic mode" and to report the current fan speed stage.

# 2. Communication objects

The following 287 communication objects are available in the N 513/11, N 512/11 or N 562/11 switching actuator. Which of them are visible and can be linked with group addresses will be determined by setting the parameters.

Maximum number of group addresses:	511
Maximum number of assignments:	511

#### Note

The number and type of visible objects can vary. Never are all objects available together.

No.	Object name	Function	Number of bits	Flags
1	Status direct mode	On/Off	1 Bit	CRT
2	8-bit scene	Recall/program	1 Bvte	CRWT
	A-1, Switching/Actuating variable switch-		,	CRWT
3	ing	On/Off	1 Bit	
4	A-1, Night mode	On/Off	1 Bit	CRWT
5	A-1, Logic operation	On/Off	1 Bit	CW
6	A-1, Manual override	On/Off	1 Bit	CW
7	A-1, Forced control	On/Off	2 Bit	CRW
8	A-1. Actuating variable continuous	Percent value	1 Bvte	CW
	A, Fan actuating variable heating / Con-		,	CW
9	troller	Percent value	1 Byte	
10	A, Fan actuating variable cooling	Percent value	1 Byte	CW
11	A, Fan automatic operation mode	On	1 Bit	CW
	A, Fan speed stage in manual operation			CW
12	mode	Value 0255	1 Byte	
13	A-1, Status switching	On/Off	1 Bit	CRT
14	A-1, Threshold for switching cycles	Set	4 Bytes	CRWT
15	A-1, Number of switching cycles	Counter value	4 Bytes	CRWT
	A-1, Exceeding switching cycles thresh-			CRT
16	old	On/Off	1 Bit	
17	A-1, Threshold for operating hours	Set	4 Bytes	CRWT
18	A-1, Operating hours	Counter value	4 Bytes	CRWT
	A-1, Exceeding operating hours thresh-			CRT
19	old	On/Off	1 Bit	
	A-1, Exceeding load current set point			CRT
20	value	On/Off	1 Bit	
21	A-1, Load current set point value shortfall	On/Off	1 Bit	CRT
22	A-1, Save load current as set point value	On	1 Bit	CW
		Measured		CRT
23	A-1, Measured value of load current	value	2 Bytes	60T
24	A, Status fan automatic mode	On/Off	1 Bit	CRI
25	A, Status fan speed stage	Value 03	1 Byte	CRI
26	A-2, Switching/Actuating variable switch-	0.0/0#	1 04	CRWI
20	Ing A 2 Night mode	On/Off		CDM/T
27	A-2, Night mode	On/Off		CRWI
20	A-2, Logic operation		I BIL	CW
29	A-2, Manual override	On/Off	1 BIt	CW
30	A-2, Forced control	On/Off	2 Bit	CRW
31	A-2, Actuating variable continuous	Percent value	1 Byte	CW
32	A-2, Status switching	On/Off	1 Bit	CRI
33	A-2, Threshold for switching cycles	Set	4 Bytes	CRWT
34	A-2, Number of switching cycles	Counter value	4 Bytes	CRWI
05	A-2, Exceeding switching cycles thresh-	0-10#	4.04	CRT
35		Un/Uff	1 Bit	CDIAG
36	A-2, Inreshold for operating nours	Set	4 Bytes	CRWI
37	A-2, Operating nours	Counter value	4 Bytes	CRWI
20	A-2, Exceeding operating nours thresh-	On/Off	1 Dit	CRI
30	A 2 Exceeding load current act point	01/01	I BIL	CDT
30	A-2, Exceeding load current set point	On/Off	1 Bit	CKI
40	A-2 Load current set point value shortfall	On/Off	1 Bit	CRT
40	A-2, Save load current as set point value	On	1 Bit	CW
	A-2, Gave load current as set pollit value		i Dit	_ V V

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No.	Object name	Function	Num-	Flags
	-		ber of	-
			bits	
		Measured	2	CRT
42	A-2, Measured value of load current	value	Bytes	
	A-3, Switching/Actuating variable switch-			CRWT
43	ing	On/Off	1 Bit	
44	A-3, Night mode	On/Off	1 Bit	CRWT
45	A-3, Logic operation	On/Off	1 Bit	CW
46	A-3. Manual override	On/Off	1 Bit	CW
47	A-3. Forced control	On/Off	2 Bit	CRW
48	A-3 Actuating variable continuous	Percent value	1 Byte	CW
10	A 3 Status switching	Op/Off	1 Bit	CRT
43	A-3, Status switching	01/01	4	CRW/T
50	A-3 Threshold for switching cycles	Set	H Bytes	CRWI
50	A-5, Threahold for switching cycles	001	Dyic3	CDWT
51	A 3 Number of switching cycles	Counter value	4 Butos	CRWI
51	A 2 Exceeding switching cycles	Counter value	Dytes	CDT
52	A-3, Exceeding switching cycles thesh-	On/Off	1 Bit	CKI
02	014	01/01/	1 010	CDWT
53	A-3 Threshold for operating hours	Set	Bytes	CINVI
00	A o, miconola for operating hours	001	1	CDWT
54	A 3 Operating hours	Counter value	4 Butos	CRWI
54	A 3 Exceeding operating hours thresh		Dyico	CDT
55	old	On/Off	1 Bit	CRI
56	A 3 Exceeding load current set point	On/Off	1 Dit	CPT
50	A-3, Exceeding load current set point	01/01		CNT
57	A-3, Load current set point value shortfall	On/Off	1 Bit	CRI
58	A-3, Save load current as set point value	On	1 Bit	CW
		Measured		CRT
59	A-3, Measured value of load current	value	2 Bytes	
	B-1, Switching/Actuating variable switch-			CRWT
60	ing	On/Off	1 Bit	
61	B-1. Night mode	On/Off	1 Bit	CRWT
62	B-1 Logic operation	On/Off	1 Rit	CW
62	B 1, Manual override	On/Off	1 Dit	CW
05	B-1, Mariual Override	01/01		CW
64	B-1, Forced control	On/Off	2 BIT	CRW
65	B-1, Actuating variable continuous	Percent value	1 Byte	CW
66	B, Fan actuating variable heating/controller	Percent value	1 Byte	CW
67	B, Fan actuating variable cooling	Percent value	1 Byte	CW
68	B, Fan automatic operation mode	On	1 Bit	CW
	B, Fan speed stage in manual operation			CW
69	mode	Value 0255	1 Byte	
70	B-1, Status switching	On/Off	1 Bit	CRT
71	B-1 Switching cycles threshold	Set	4 Bytes	CRWT
72	B-1 Number of switching cycles	Counter value	4 Rytes	CRWT
72	P 1 Excooding switching cycles throshold	Op/Off	1 Dit	CPT
75	D 1. Threehold for an artist hours	011/011	4 Dut an	CDM/T
74	B 1 Operating hours	Set	4 Dytes	CRWI
/5	B-1, Operating nours	Counter value	4 Bytes	CRWI
/6	B-1, Exceeding operating hours threshold	On/Off	1 Bit	CRI
77	B-1, Exceeding load current set point value	On/Off	1 Bit	CRT
78	B-1, Load current set point value shortfall	On/Off	1 Bit	CRT
79	B-1, Save load current as set point value	On	1 Bit	CW
		Measured		CRT
80	B-1, Measured value of load current	value	2 Bytes	
81	B. Status fan automatic mode	On/Off	1 Bit	CRT
82	B Status fan speed stage	Value 0 3	1 Byte	CRT
02	B-2 Switching/Actuating variable switch	*ulue 05	ibyte	CRW/T
82	ing	On/Off	1 Pi+	CIVIT
0/	R 2 Night mode	On/Off	1 011	CDMT
ŏ4	D=2, NIGHT MODE		I BIT	CKWI
85	B-2, Logic operation	Un/Uff	1 Bit	CW
86	B-2, Manual override	On/Off	1 Bit	CW
87	B-2, Forced control	On/Off	2 Bit	CRW
88	B-2, Actuating variable continuous	Percent value	1 Byte	CW
89	B-2, Status switching	On/Off	1 Bit	CRT
90	B-2. Threshold for switching cycles	Set	4 Bytes	CRWT
91	B-2 Number for switching cycles	Counter value	4 Byter	CRWT
21	B 2. Eveneding switching system to be		1 D'+	CDT
92	b-2, Exceeding switching cycles threshold			CKI
93	B-2, Inreshold for operating hours	Set	4 Bytes	CRWI
94	B-2, Operating hours	Counter value	4 Bytes	CRWT
95	B-2, Exceeding operating hours threshold	On/Off	1 Bit	CRT
96	B-2, Exceeding load current set point value	On/Off	1 Bit	CRT
		0.1011	4.01	COT
9/	B-2, Load current set point value shortfall	On/Off	1 Bit	CRI
97 98	B-2, Load current set point value shortfall B-2. Save load current as set point value	On/Off On	1 Bit 1 Bit	CRI

No.	Object name	Function	Number of bits	Flags
99	B-2, Measured value of load current	Measured value	2 Bytes	CRT
100	B-3, Switching/Actuating variable switch-	On/Off	1 Bit	CRW T
				CRW
101	B-3, Night mode	On/Off	1 Bit	T
102	B-3, Logic operation	On/Off	1 Bit	CW
103	B-3, Manual override	On/Off	1 Bit	CW
104	B-3, Forced control	On/Off	2 Bit	CRW
105	B-3 Actuating variable continuous	Percent	1 Byte	CW
105	B-3 Status switching	On/Off	1 Bit	CRT
100	5 57 Status Striteining	01.011	1 510	CRW
107	B-3, Threshold for switching cycles	Set	4 Bytes	T
108	B-3. Number of switching cycles	Counter value	4 Bvtes	T
109	B-3, Exceeding switching cycles threshold	On/Off	1 Bit	CRT
				CRW
110	B-3, Threshold for operating hours	Set	4 Bytes	T
111	B-3, Operating hours	Counter value	4 Bytes	T
112	B-3, Exceeding operating hours threshold	On/Off	1 Bit	CRT
113	B-3, Exceeding load current set point value	On/Off	1 Bit	CRT
114	B-3, Load current set point value shortfall	On/Off	1 Bit	CRT
115	B-3, Save load current as set point value	On	1 Bit	CW
	· •	Measured		CRT
116	B-3, Measured value of load current	value	2 Bytes	
447	C-1, Switching/Actuating variable switch-	0-10#	4.04	CRW
117	ing	Un/Uff	1 Bit	
118	C-1 Night mode	On/Off	1 Bit	T
119	C-1 Logic operation	On/Off	1 Bit	CW
120	C-1 Manual override	On/Off	1 Bit	CW
121	C-1 Forced control	On/Off	2 Bit	CRW
122	C-1 Actuating variable continuous	Percent value	1 Byte	CW
122	C. Fan actuating variable heat-	T crocint value	1 Dyte	CW
123	ing/controller	Percent value	1 Byte	
124	C, Fan actuating variable cooling	Percent value	1 Byte	CW
125	C, Fan automatic operation mode	On	1 Bit	CW
	C, Fan speed stage in manual operation	Value		CW
126	mode	0255	1 Byte	
127	C-1, Status switching	On/Off	1 Bit	CRT
128	C-1, Threshold for switching cycles	Set	4 Byte	CRW T
				CRW
129	C-1,Number of switching cycles	Counter value	4 Byte	Т
130	C-1, Exceeding operating hours threshold	On/Off	1 Bit	CRT
131	C-1, Threshold for operating hours	Set	4 Bytes	CRW T
				CRW
132	C-1, Operating hours	Counter value	4 Bytes	Т
133	C-1, Exceeding operating hours threshold	On/Off	1 Bit	CRT
104	C-1, Exceeding load current set point	0.0/0#	1	CRI
104	C 1 Load current set point value abortfoll	On/Off	1 DIL 1 Dit	СРТ
130	C 1. Save load current as set point value	On	1 DIL 1 Dit	CNI
130	C-1, Save load current as set point value	Measured	I DIL	CRT
137	C-1, Measured value of load current	value	2 Bytes	CIVI
138	C, Status fan automatic mode	On/Off	1 Bit	CRT
139	C, Status fan speed stage	Value 03	1 Byte	CRT
140	C-2, Switching/Actuating variable switch- ing	On/Off	1 Bit	CRW T
141	C-2, Night mode	On/Off	1 Bit	CRW T
142	C-2, Logic operation	On/Off	1 Bit	CW
143	C-2, Manual override	On/Off	1 Bit	CW
144	C-2, Forced control	On/Off	2 Bit	CRW
145	C-2, Actuating variable continuous	Percent value	1 Byte	CW
146	C-2, Status switching	On/Off	1 Bit	CRT
147	C-2. Threshold for switching cycles	Set	4 Bytes	CRW T

Technical manual

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	Object name	Function	Number	Flags
		- unction	of bits	. lugs
				CRW
148	C-2, Number of switching cycles	Counter value	4 Bytes	Т
149	C-2, Exceeding switching cycles threshold	On/Off	1 Bit	CRT
				CRW
150	C-2, Threshold for operating hours	Set	4 Bytes	Т
				CRW
151	C-2, Operating hours	Counter value	4 Bytes	T
152	C-2, Exceeding operating hours threshold	On/Off	1 Bit	CRI
153	C-2, Exceeding load current set point	On/Off	1 Dit	CRI
153	C 2 Load current set point value shortfall	On/Off	1 Bit	CPT
155	C-2. Save load current as set point value	On/On	1 Bit	CW
155	C-2, Save load current as set point value	Measured	1 Dit	CRT
156	C-2. Measured value of load current	value	2 Bytes	CITI
	C-3, Switching/Actuating variable switch-			CRW
157	ing	On/Off	1 Bit	Т
				CRW
158	C-3, Night mode	On/Off	1 Bit	Т
159	C-3, Logic operation	On/Off	1 Bit	CW
160	C-3, Manual override	On/Off	1 Bit	CW
161	C-3, Forced control	On/Off	2 Bit	CRW
162	C-3, Actuating variable continuous	Percent	1 Byte	CW
163	C-3, Status switching	On/Off	1 Bit	CRT
				CRW
164	C-3, Threshold for switching cycles	Set	4 Bytes	Т
				CRW
165	C-3, Number of switching cycles	Counter value	4 Bytes	Т
166	C-3, Exceeding switching cycles threshold	On/Off	1 Bit	CRT
				CRW
167	C-3, Threshold for operating hours	Set	4 Bytes	Т
400				CRW
168	C-3, Operating nours	Counter value	4 Bytes	
169	C-3, Exceeding operating hours threshold	On/Off	1 Bit	CRI
170	C-3, Exceeding load current set point	On/Off	1 Bit	CRI
171	C-3 Load current set point value shortfall	On/Off	1 Bit	CRT
172	C-3 Save load current as set point value	On	1 Bit	CW
	e e, eute lead callent de cet penit faide	011		<b></b>
		Measured		CRT
173	C-3, Measured value of load current	Measured value	2 Bytes	CRT
173	C-3, Measured value of load current D-1, Switching/Actuating variable switch-	Measured value	2 Bytes	CRT CRW
173 174	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing	Measured value On/Off	2 Bytes 1 Bit	CRT CRW T
173 174	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing	Measured value On/Off	2 Bytes 1 Bit	CRT CRW T CRW
173 174 175	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode	Measured value On/Off On/Off	2 Bytes 1 Bit 1 Bit	CRT CRW T CRW T
173 174 175 176	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation	Measured value On/Off On/Off On/Off	2 Bytes 1 Bit 1 Bit 1 Bit	CRT CRW T CRW T CW
173 174 175 176 177	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override	Measured value On/Off On/Off On/Off On/Off	2 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 2 Bit	CRT CRW T CRW T CW CW
173 174 175 176 177 178	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control	Measured value On/Off On/Off On/Off On/Off	2 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 2 Bit 1 Dit	CRT CRW T CRW T CW CW CRW
173 174 175 176 177 178 179	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous	Measured value On/Off On/Off On/Off On/Off On/Off Percent value	2 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte	CRT CRW T CRW T CW CW CRW CRW CW
173 174 175 176 177 178 179 180	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable heat- ing/controller	Measured value On/Off On/Off On/Off On/Off Percent value Percent value	2 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte	CRT CRW T CRW T CW CW CRW CW CW
173 174 175 176 177 178 179 180 181	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable heat- ing/controller D. Fan actuating variable cooling	Measured value On/Off On/Off On/Off On/Off Percent value Percent value	2 Bytes 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte	CRT CRW T CRW T CW CW CRW CW CW
173 174 175 176 177 178 179 180 181 182	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable heat- ing/controller D, Fan actuating variable cooling D, Fan automatic operation mode	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value On	2 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Bit	CRT T CRW T CRW T CW CW CW CW CW CW CW CW
173 174 175 176 177 178 179 180 181 182	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable heat- ing/controller D, Fan actuating variable cooling D, Fan speed stage in manual operation	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value On	2 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit	CRT T CRW T CRW CW CW CW CW CW CW CW CW CW CW CW
173 174 175 176 177 178 179 180 181 182 183	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable heat- ing/controller D, Fan actuating variable cooling D, Fan automatic operation mode D, Fan speed stage in manual operation mode	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value On Vale 0255	2 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit 1 Byte	CRT T CRW T CRW CW CW CW CW CW CW CW CW CW
173 174 175 176 177 178 179 180 181 182 183 184	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable heat- ing/controller D, Fan actuating variable cooling D, Fan actuating variable cooling D, Fan actuating variable cooling D, Fan speed stage in manual operation mode D-1, Status switching	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value On Vale 0255 On/Off	2 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit 1 Byte 1 Bit	CRT T CRW T CRW CW CW CW CW CW CW CW CW CW CW
173 174 175 176 177 178 179 180 181 182 183 184	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable heat- ing/controller D, Fan actuating variable cooling D, Fan automatic operation mode D, Fan speed stage in manual operation mode D-1, Status switching	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value On Vale 0255 On/Off	2 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit	CRT CRW T CRW T CW CW CW CW CW CW CW CW CRT CRW
173 174 175 176 177 178 179 180 181 182 183 184 185	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable heat- ing/controller D, Fan actuating variable cooling D, Fan actuating variable cooling D, Fan automatic operation mode D, Fan speed stage in manual operation mode D-1, Status switching D-1, Threshold for switching cycles	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value On Vale 0255 On/Off Set	2 Bytes 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit 4 Bytes	CRT CRW T CRW T CW CW CW CW CW CW CW CW CW CW CW CW CW
173 174 175 176 177 178 179 180 181 182 183 184 185	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable heat- ing/controller D, Fan actuating variable cooling D, Fan actuating variable cooling D, Fan actuating variable cooling D, Fan actuating variable cooling D, Fan speed stage in manual operation mode D-1, Status switching D-1, Threshold for switching cycles	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value On Vale 0255 On/Off Set	2 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit 4 Bytes	CRT CRW T CRW T CW CW CW CW CW CW CW CW CW CW CW CW CRT CRW
173 174 175 176 177 178 179 180 181 182 183 184 185 186	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable heat- ing/controller D, Fan actuating variable cooling D, Fan actuating variable cooling D, Fan actuating variable cooling D, Fan speed stage in manual operation mode D-1, Status switching D-1, Threshold for switching cycles D-1, Number of switching cycles	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value On Vale 0255 On/Off Set Counter value	2 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit 4 Bytes 4 Bytes	CRT CRW T CRW T CW CW CW CW CW CW CW CW CW CW CW CW CW
173 174 175 176 177 178 179 180 181 182 183 184 185 186 187	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable cooling D, Fan speed stage in manual operation mode D-1, Status switching D-1, Threshold for switching cycles D-1, Number of switching cycles threshold	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value On Vale 0255 On/Off Set Counter value On/Off	2 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit 1 Byte 1 Bit 4 Bytes 4 Bytes 1 Bit	CRT CRW T CRW CW CW CW CW CW CW CW CW CW CW CW CW CRT CRW T CRT
173 174 175 176 177 178 179 180 181 182 183 184 185 186 187	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable heat- ing/controller D, Fan actuating variable cooling D, Fan automatic operation mode D, Fan speed stage in manual operation mode D-1, Status switching D-1, Threshold for switching cycles D-1, Number of switching cycles D-1, Exceeding switching cycles threshold	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value On Vale 0255 On/Off Set Counter value	2 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit 4 Bytes 4 Bytes 1 Bit 4 Bytes 1 Bit	CRT CRW T CRW T CW CW CW CW CW CW CW CW CW CW CW CRT CRW T CRT CRT CRT CRT CRT
173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable heat- ing/controller D, Fan actuating variable cooling D, Fan speed stage in manual operation mode D-1, Status switching D-1, Threshold for switching cycles D-1, Exceeding switching cycles threshold D-1, Threshold for operating hours	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value On Vale 0255 On/Off Set Counter value On/Off	2 Bytes 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit 4 Bytes 4 Bytes 1 Bit 4 Bytes	CRT CRW T CRW T CW CW CW CW CW CW CW CW CW CW CW CW CW
173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable heat- ing/controller D, Fan actuating variable cooling D, Fan speed stage in manual operation mode D-1, Status switching D-1, Threshold for switching cycles D-1, Exceeding switching cycles D-1, Threshold for operating hours	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value On Vale 0255 On/Off Set Counter value On/Off	2 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit 4 Bytes 4 Bytes 4 Bytes 4 Bytes 4 Bytes	CRT CRW T CRW CW CW CW CW CW CW CW CW CW CW CW CW CW
173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable cooling D, Fan speed stage in manual operation mode D-1, Status switching D-1, Threshold for switching cycles D-1, Number of switching cycles D-1, Exceeding switching cycles D-1, Threshold for operating hours D-1, Operating hours D-1, Operating hours	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value On Vale 0255 On/Off Set Counter value On/Off Set Counter value On/Off	2 Bytes 1 Bit 1 Bit 1 Bit 2 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit 4 Bytes 4 Bytes 1 Bit 4 Bytes 1 Bit 4 Bytes 1 Bit 1 Bit 1 Bit 1 Byte 1 Bit 1 Bit 1 Byte 1 Byte 1 Bit 1 Byte 1 Byte 1 Byte 1 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit 1 Byte 1 Bit 1 Byte 1 Bit 1 Byte 1 Bit 1 Byte 1 Bit 1 Byte 1 Bit 1 Bit 1 Byte 1 Bit 1	CRT CRW T CRW CW CW CW CW CW CW CW CW CW CW CW CW CW
173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 188 189 190	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable continuous D, Fan actuating variable cooling D, Fan automatic operation mode D, Fan automatic operation mode D, Fan automatic operation mode D, Fan speed stage in manual operation mode D-1, Status switching D-1, Status switching cycles D-1, Number of switching cycles D-1, Intreshold for operating hours D-1, Threshold for operating hours D-1, Coperating hours D-1, Exceeding operating hours threshold D-1 Exceeding load current set point	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value Percent value On Vale 0255 On/Off Set Counter value On/Off Set Counter value On/Off	2 Bytes 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit 4 Bytes 4 Bytes 4 Bytes 1 Bit 4 Bytes 1 Bit	CRT CRW T CRW CW CW CW CW CW CW CW CW CW CW CW CW CW
173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 188 187 190	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable heat- ing/controller D, Fan actuating variable cooling D, Fan automatic operation mode D, Fan automatic operation mode D, Fan speed stage in manual operation mode D-1, Status switching D-1, Status switching cycles D-1, Number of switching cycles D-1, Exceeding switching cycles D-1, Exceeding switching cycles D-1, Threshold for operating hours D-1, Coperating hours D-1, Exceeding operating hours threshold D-1, Exceeding load current set point value	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value On Vale 0255 On/Off Set Counter value On/Off Set Counter value On/Off	2 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit 4 Bytes 4 Bytes 4 Bytes 1 Bit 4 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 1 Byte 1 Byte 1 Bit 1 Byte 1 Bit 1 Byte 1 Bit 1 Byte 1 Bit 1 Bit	CRT CRW T CRW CW CW CW CW CW CW CW CW CW CW CW CW CRT CRW T CRT CRW T CRT CRT CRT CRT
173 174 175 176 177 178 179 180 181 182 183 184 185 186 185 186 187 188 188 189 190	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable heat- ing/controller D, Fan actuating variable cooling D, Fan speed stage in manual operation mode D-1, Status switching D-1, Status switching cycles D-1, Number of switching cycles D-1, Exceeding switching cycles threshold D-1, Threshold for operating hours D-1, Coperating hours D-1, Exceeding operating hours threshold D-1, Exceeding load current set point value D-1, Load current set point value shortfall	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value On Vale 0255 On/Off Set Counter value On/Off Set Counter value On/Off On/Off On/Off On/Off	2 Bytes 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit 4 Bytes 4 Bytes 4 Bytes 4 Bytes 1 Bit 4 Bytes 1 Bit 1 Byte 1 Bit 1 Bit 1 Bit 1 Byte 1 Bit 1 Bit 1 Byte 1 Bit 1 Byte 1 Bit 1 Bit	CRT CRW T CRW CW CW CW CW CW CW CW CW CW CW CW CW CW
173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 191 193	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable heat- ing/controller D, Fan actuating variable cooling D, Fan speed stage in manual operation mode D-1, Status switching D-1, Threshold for switching cycles D-1, Number of switching cycles D-1, Exceeding switching cycles D-1, Exceeding switching cycles D-1, Deprating hours D-1, Deprating hours D-1, Exceeding operating hours threshold D-1, Exceeding load current set point value D-1, Load current set point value shortfall D-1, Save load current as set point value	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value Percent value On Vale 0255 On/Off Set Counter value On/Off Set Counter value On/Off On/Off On/Off On/Off	2 Bytes 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit 4 Bytes 4 Bytes 4 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 1 Bit 1 Bit 1 Bit 1 Bit 1 Bit	CRT CRW T CRW CW CW CW CW CW CW CW CW CW CW CW CW CW
173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 188 189 190 191 192 193	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable cooling D, Fan speed stage in manual operation mode D-1, Status switching D-1, Threshold for switching cycles D-1, Number of switching cycles D-1, Exceeding switching cycles D-1, Exceeding switching cycles D-1, Coperating hours D-1, Exceeding operating hours threshold D-1, Exceeding operating hours threshold D-1, Exceeding load current set point value D-1, Load current set point value shortfall D-1, Save load current as set point value	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value Percent value On Vale 0255 On/Off Set Counter value On/Off Set Counter value On/Off On/Off On/Off On	2 Bytes 1 Bit 1 Bit 1 Bit 2 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit 4 Bytes 4 Bytes 1 Bit 4 Bytes 1 Bit 1 Byte 1 Bit 1 Byte 1 Bit 1 Bit 1 Byte 1 Bit 1 Byte 1 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit 1 Byte 1 Bit 1 Byte 1 Bit 1 Bit 1 Byte 1 Bit 1 Bit	CRT CRW T CRW CW CW CW CW CW CW CW CW CW CW CW CW CW
173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable heat- ing/controller D, Fan actuating variable cooling D, Fan automatic operation mode D, Fan speed stage in manual operation mode D-1, Status switching D-1, Status switching cycles D-1, Number of switching cycles D-1, Number of switching cycles D-1, Exceeding switching cycles D-1, Threshold for operating hours D-1, Threshold for operating hours D-1, Coperating hours D-1, Exceeding load current set point value D-1, Load current set point value shortfall D-1, Save load current as set point value D-1, Measured value of load current	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value Percent value On Vale 0255 On/Off Set Counter value On/Off Set Counter value On/Off On/Off On/Off On/Off On/Off On/Off On/Off On/Off On Measured value	2 Bytes 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit 4 Bytes 4 Bytes 4 Bytes 1 Bit 4 Bytes 1 Bit 1 Bit 1 Bit 2 Bit 2 Bytes 1 Bit 2 Bytes 1 Bit 1 Bit 1 Bit 2 Bytes 1 Bit 2 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 2 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 1 Bit 1 Bit 1 Bit 1 Bit 2 Bytes 2 Bytes 2 Bytes 2 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 1 Bit 2 Bytes 2 Bytes 2 Bytes 2 Bytes 2 Bytes 1 Bit 1 Bit 2 Bytes 2	CRT CRW T CRW CW CW CW CW CW CW CW CW CW CW CW CRT CRW T CRT CRW T CRT CRT CRT CRT CRT CRT CRT CRT CRT C
173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 188 188 188 188 189 190 191 192 193 194 195	C-3, Measured value of load current D-1, Switching/Actuating variable switch- ing D-1, Night mode D-1, Logic operation D-1, Manual override D-1, Forced control D-1, Actuating variable continuous D, Fan actuating variable heat- ing/controller D, Fan actuating variable cooling D, Fan automatic operation mode D, Fan actuating variable cooling D, Fan automatic operation mode D, Fan speed stage in manual operation mode D-1, Status switching D-1, Status switching cycles D-1, Number of switching cycles D-1, Exceeding switching cycles D-1, Exceeding switching cycles threshold D-1, Threshold for operating hours D-1, Exceeding operating hours threshold D-1, Exceeding load current set point value D-1, Load current set point value shortfall D-1, Save load current as set point value D-1, Measured value of load current D, Status fan automatic mode	Measured value On/Off On/Off On/Off On/Off Percent value Percent value Percent value On Vale 0255 On/Off Set Counter value On/Off Set Counter value On/Off On/Off On/Off On/Off On/Off On On/Off On On/Off On On/Off	2 Bytes 1 Bit 1 Bit 1 Bit 1 Bit 2 Bit 1 Byte 1 Byte 1 Byte 1 Byte 1 Byte 1 Bit 4 Bytes 4 Bytes 4 Bytes 4 Bytes 1 Bit 4 Bytes 1 Bit 1 Bit	CRT CRW T CRW CW CW CW CW CW CW CW CW CW CW CW CW CRT CRT CRT CRT CRT CRT CRT CRT CRT CRT

No.	Object name	Function	Number of bits	Flag s
197	D-2, Switching/Actuating variable switching	On/Off	1 Bit	CR WT
198	D-2, Night mode	On/Off	1 Bit	CR WT
199	D-2 Logic operation	On/Off	1 Bit	CW
200	D 2, Logic operation	On/Off	1 Bit	CW
200	D-2, Manual Overnue	01/01	T DIL	CW
004		0.101	0.01	CR
201	D-2, Forced control	Un/Uff	2 Bit	VV
202	D-2, Actuating variable continuous	Percent value	1 Byte	CW
203	D-2, Status switching	On/Off	1 Bit	CRT
				CR
204	D-2, Threshold for switching cycles	Set	4 Byte	WT
				CR
205	D-2. Number of switching cycles	Counter value	4 Byte	WT
206	D-2 Exceeding switching cycles threshold	On/Off	1 Bit	CRT
200		01//011	1 Dit	CD
207	D.2. Threshold for operating hours	Set	4 Puton	
207	D-2, Threshold for operating hours	Sei	4 Dytes	
		<b>a</b>		CR
208	D-2, Operating hours	Counter value	4 Bytes	VV I
209	D-2, Exceeding operating hours threshold	On/Off	1 Bit	CRT
210	D-2, Exceeding load current set point value	On/Off	1 Bit	CRT
211	D-2, Load current set point value shortfall	On/Off	1 Bit	CRT
212	D-2. Save load current as set point value	On	1 Bit	CW
213	D-2 Measured value of load current	Measured value	2 Bytes	CRT
215		Wicasurcu value	2 Dyte3	CD
214	D.2. Switching/Actuating variable switching	0=/0#	1.04	CR
214	D-3, Switching/Actualing variable switching	01/01	ТЫІ	VV I
		a		CR
215	D-3, Night mode	On/Off	1 Bit	WI
216	D-3, Logic operation	On/Off	1 Bit	CW
217	D-3, Manual override	On/Off	1 Bit	CW
				CR
218	D-3. Forced control	On/Off	2 Bit	w
219	D-3 Actuating variable continuous	Percent value	1 Byte	CW
220	D 2 Status switching	Op/Off	1 Dit	CPT
220	D-3, Status switching	01/01	I DIL	CNI
004	D.O. There is a late from an itability of a started	0		CR
221	D-3, Infeshold for switching cycles	Set	4 Bytes	VV I
				CR
222	D-3, Number of switching cycles	Counter value	4 Bytes	WI
223	D-3, Exceeding switching cycles threshold	On/Off	1 Bit	CRT
				CR
224	D-3, Threshold for operating hours	Set	4 Bytes	WT
				CR
225	D-3, Operating hours	Counter value	4 Bytes	WT
226	D-3. Exceeding operating hours threshold	On/Off	1 Bit	CRT
227	D-3 Exceeding load current set point value	On/Off	1 Bit	CRT
221	D 3, Load ourrent out point value shortfall	On/Off	1 Dit	CDT
220	D-3, Load current set point value shortian	01/01	1 Dit	CIVI
229	D-3, Save load current as set point value	Un i i	I BIL	CW
230	D-3, Measured value of load current	Measured value	2 Bytes	CRI
				CR
231	E-1, Switching/Actuating variable switching	On/Off	1 Bit	WT
				CR
232	E-1, Night mode	On/Off	1 Bit	WT
233	E-1, Logic operation	On/Off	1 Bit	CW
234	E-1, Manual override	On/Off	1 Bit	CW
		1		CR
235	E-1. Forced control	On/Off	2 Bit	w
236	E-1 Actuating variable continuous	Percent value	1 Byte	C.W/
200	E Fon notuating variable besting/contention	Dereent value	1 Dyte	CW
231		Percent value	гвуте	CW
238	E, Fan actuating variable cooling	Percent value	1 Byte	CW
239	E, Fan automatic operation mode	On	1 Bit	CW
	E, Fan speed stage in manual operation			CW
240	mode	Value 0255	1 Byte	
241	E-1, Status switching	On/Off	1 Bit	CRT
		1		CR
242	E-1. Threshold for switching cycles	Set	4 Bytes	WT
<u> </u>	,		,	CR
1			1	- CA
2/2	E-1 Number of switching cycles	Countervalue	4 Bytee	1 \//T
243	E-1, Number of switching cycles	Counter value	4 Bytes	WT
243 244	E-1, Number of switching cycles E-1, Exceeding switching cycles threshold	Counter value On/Off	4 Bytes 1 Bit	WT CRT
243	E-1, Number of switching cycles E-1, Exceeding switching cycles threshold	Counter value On/Off	4 Bytes 1 Bit	CRT CR
243 244 245	E-1, Number of switching cycles E-1, Exceeding switching cycles threshold E-1, Threshold for operating hours	Counter value On/Off Set	4 Bytes 1 Bit 4 Bytes	WT CRT CR WT
243 244 245 246	E-1, Number of switching cycles E-1, Exceeding switching cycles threshold E-1, Threshold for operating hours E-1, Operating hours	Counter value On/Off Set Counter value	4 Bytes 1 Bit 4 Bytes 4 Bytes	WT CRT CR WT CR

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			-						
No.	Object name	Function	Number of bits	Flag	Object	Object name	Function	Туре	Flags
				WT	1	Status direct	On / Off	1 Bit	CRT
247	E-1, Exceeding operating hours threshold	On/Off	1 Bit	CRT		mode			
248	E-1, Exceeding load current set point value	On/Off	1 Bit	CRT					
249	E-1, Load current set point value shortfall	On/Off	1 Bit	CRT	You us	e this object to rep	oort that the	actuator I	has been
250	E-1, Save load current as set point value	On	1 Bit	CW	switche	d via the "Direct me	ode" button o	n its top <sup>-</sup>	from bus
251	E-1, Measured value of load current	Measured value	2 Bytes	CRT	mode t	o direct mode (Direc	t mode = $On$ )	or that it	has been
252	E, Status fan automatic mode	On/Off	1 Bit	CRT	switche	d back from direct m	node to bus m	ode (Direc	t mode =
253	E, Status fan speed stage	Value 03	1 Byte	CRI	Off) If	direct mode is switch	ned on (the co	rrespondir	
254	E-2, Switching/Actuating variable switching	On/Off	1 Bit	CR WT	LED on	top of the actuator	lights up), dire	ct switchi	ng of the
255	E-2, Night mode	On/Off	1 Bit	WT	actuato	r outputs by a toggli	ng function is e	enabled via	a the cor-
256	E-2, Logic operation	On/Off	1 Bit	CW	respond	ling button on top o	t the actuator.	in direct i	node the
257	E-2, Manual override	On/Off	1 Bit	CW	actuato	r does not execute s	witching or so	ene comn	nands re-
				CR	ceived	via the bus, but sto	res them as a	a wanted	set point
258	E-2, Forced control	On/Off	2 Bit	W	state. A	fter switching back	to bus mode (	the vellov	v LED for
259	E-2, Actuating variable continuous	Percent value	1 Byte	CW	indicati	na direct mode on to	n of the actuat	or is not lit	) the ac-
260	E-2, Status Switching	On/Off	1 Bit	CRT	tuator o	omnares the current		with the s	tored set
261	C. 2. Threshold for quitching quales	Cat	4 Dutes	CR	noint ct	atos and automatica	lly corrects de	vistions of	the cur
201	E-2, Threshold for switching cycles	Sel	4 Bytes	CD	point st				the cui-
262	E-2 Number of switching cycles	Counter value	4 Bytes	WT	rent sta	tes from the set poin	t states.		
263	E-2. Exceeding switching cycles threshold	On/Off	1 Bit	CRT	After b	us voltage recovery	direct mode s	tatus is tra	ansferred
	,			CR	automa	tically if the parame	eter "Send sta	tus / thres	hold ob-
264	E-2, Threshold for operating hours	Set	4 Bytes	WT	iects" is	set to "on request an	d after change	of status".	
				CR	,				
265	E-2, Operating hours	Counter value	4 Bytes	WT	2	8-bit scene	recall /	1 Byte	CRWI
266	E-2, Exceeding operating hours threshold	On/Off	1 Bit	CRI			program		
267	E-2, Exceeding load current set point value	On/Off	1 Bit	CRI	You use	his object to reca	ll (restore) or	program	the 8-bit
268	E-2, Load current set point value shortfall	On/Off	1 BIt	CRI	scene w	ith the number v (v -	- 1 64)	program	
209	E-2, Save load current as set point value	Measured value	2 Butes	CRT	Secre w		- 10+).		
210		Wedsureu value	Z Dytes	CR	Bits O	5 contain (in binary	code) the nun	nber of the	e wanted
271	E-3. Switching/Actuating variable switching	On/Off	1 Bit	WT	scene a	s a decimal number	between 1 an	id 64 (in v	vhich the
				CR	decima	number 1 equals tl	ne binary num	iber 0, the	e decimal
272	E-3, Night mode	On/Off	1 Bit	WT	number	2 equals the binary	number 1, etc	.). If bit 7	= logical
273	E-3, Logic operation	On/Off	1 Bit	CW	1 then	the scene is program	med and if bit	$r = \log r$	al O then
274	E-3, Manual override	On/Off	1 Bit	CW	it is rec	alled Bit 6 is current	v spare and m	ust be set	to logical
075		0. 101	0.01	CR	0	alleu. Dit o is cuiteitu	y spare and m	ust be set	to logical
275	E-3, Forced control	On/Off	2 Bit	W	0.	1	1	-	
270	E-3, Actualing variable continuous		1 Byte	CW	3 (26,	A-1 (A-2, A-3),	On / Off	1 Bit	CRWT
211	E-3, Status switching		I DIL	CR	43)	Switching (or: Ac-			
278	E-3. Threshold for switching cycles	Set	4 Bytes	WT	,	tuating variable			
			)	CR		switching)			
279	E-3, Number of switching cycles	Counter value	4 Bytes	WT		switching)			
280	E-3, Exceeding switching cycles threshold	On/Off	1 Bit	CRT	Via the	se objects switching	telegrams are	received i	n normal
				CR	or time	r mode which are fo	prwarded whe	re necessa	ry to the
281	E-3, Threshold for operating hours	Set	4 Bytes	WT	corresp	onding output via th	e time functio	n. In ther	mal drive
				CR	control	mode the switching	commands fro	m the cont	rollor are
282	E-3, Operating nours	Counter value	4 Bytes	W I	rocoivor	hvia those objects. If	a logic operat	ion is cont	Figured in
283	E-3, Exceeding operating nours threshold		I BIL	CRT	received	i via triese objects. Il	a logic operat		iyureu m
284	E-3, Exceeding load current set point value	On/Off	1 BIL	CRT	normal	or timer mode, then	the result of t	ine time fu	inction is
200	E-3, Save load current as set point value	On	1 Bit		the 1st	/alue for the logic co	ombination for	the corre	sponding
287	E-3. Measured value of load current	Measured value	2 Bytes	CRT	output.				
207		measured value	2 Dyics	CIT	1 (77	A 1 (A 2 A 2)	On/Off	1 Dit	
					4 (27, 44)	Night mode		IDIL	CRVVI

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Object	Object	name	Function	Туре	Flags	Object	Object name	Function	Туре	Flags
These	objects ca	n enable or	disable "Night	mode" fo	or the cor-	8 (31,	A-1 (A-2, A-3),	Percent	1 Byte	CW
respon	iding outp	ut via the bu	us. The object	can also l	be sent by	48)	Actuating variable	value	5	
a butt	on, a time	r or an auto	matic building	g manage	ement sys-		continuous			
tem, f	or example	e. If a logica switches to	I one is receiv	ed, then	the corre-	In "Ther	mal drive control" n	node, these o	bjects rece	eive posi-
In "Ni	ng output ht mode"	the output	right node. F can no long	er he sw	itched on	tioning t	elegrams from the t	nermostat, if t	he parame	eter "Con-
perma	nently, but	t only for a l	imited time (fo	or exampl	e, lighting	trol info	rmation via" is set 1	o "8-bit objec	t" in the '	"Behavior
for cle	aning for 3	30 minutes).	If the "Warnir	ng before	switching	thermal	drive control mode"	parameter wi	ndow. If,	however,
off" pa	rameter (s	ee correspo	onding "Behavi	ior" paran	neter win-	needed a	and is therefore not	displayed Ob	iect 3 (or 1	26 or 43)
dow) i	s set to "Ye	s" then, in n	light or timer r	node, on	expiration	"Actuatir	ng variable switching	" is then availa	ible.	20 01 13)
of the	configured	d ON time, y	you are inform	ied, by th	le lighting	9	A Fan actuating	Percent	1 Byte	CW
onds a	ifter the fi	rst switching	a off the outp	ut will be	switched	-	variable heating	value	. 5910	
off pe	rmanently.	This lets yo	ou know the e	end of the	e ON time		(or: Fan actuating			
and b	/ pressing t	he light swi	tch again, the	lighting	will be left		variable control-			
ON fo	r a further	30 minute	s, for example	e. If the	parameter		ler)			
setting	j is "Night	mode = No'	', this object is	not need	ded and is	If the spe	ecial function "Fan sp	peed control" is	s enabled a	and if the
theref	ore not dis	played.				paramet	er "Common control	value object"	is set to "Y	es" in the
5 (28,	A-1 (A-	2, A-3),	On / Off	1 Bit	CW	"Fan con	itrol" parameter wind	dow, then this	object is	displayed
45)	Logic o	peration				as Farra ter is set	to "No" then this o	hiect is set as	"Fan actua	ting vari-
Via th	ese objects	the switch	ing informatio	on for the	2 <sup>nd</sup> input	able hea	iting". The correspor	nding fan spee	ed stage w	ill be de-
of the	logic ope	eration to ti	ne correspond	operation	ut are re-	duced fr	om the control value	received via	this object	from the
iect is	not needer	and is ther	efore not displ	aved	1, uns ob-	thermos	tat.			
6 (29	Δ_1 (Δ_	2 Δ_3)	On / Off	1 Bit	CW	10	A, Fan actuating	Percent	1 Byte	CW
0 (29, 46)	Manua	2, 7-3), Loverride	017 011	1 DIL	cm		variable cooling	value		
These	obiects en	able an out	put that has	been swit	tched OFF	If the spe	ecial function "Fan sp	peed control" is	s enabled a	and if the
via its	"normal" sv	witching inp	ut (if need be,	with a lo	gic opera-	paramet	er " Common contro	ol value object	: " is set to	o "NO" in
tion) t	o be switcł	ned back on	permanently of	or for a tir	ne-limited	the "Fan	control" parameter	window, the	n this obje	ect is dis-
period	. This obje	ct only swite	ches off the re	levant ou	tput if the	played. I	from the control va		y ian spee	iect from
latter	nas also be	en switched	d off via its "no	ormal" sw	itching in-	the ther	mostat.			Jeet nom
put (ii	need be,	witched on	c operation).	In other	cases, the	11	A Fan automatic	On	1 Rit	CW
ual ov	erride = No	o" this obie	ct is not need	ed and is	therefore		operation mode	011	1 Dit	
not di	played.	o , enio obje		ou unu is		After a	fan speed stage w	as selected n	nanually w	hich led
7 (30	A-1 (A-	2 A-3)	On / Off	2 Bits	CRW	automat	ically to automatic r	node being sv	vitched of	f, via this
47)	Forced	control	onyon	2 Dits		object a	utomatic mode can	be switched	on again,	i.e. auto-
These	2-bit obied	ts enable a	forced switch	ina on or	off of the	matic ca	lculation of the far	speed stage	from the	received
corres	ponding of	utput, regar	dless of all ot	her objec	ts impact-	control v	alue is re-enabled.	1		
ing on	the output	t.		-		12	A, Fan speed	Value	1 Byte	CW
Bit 1 d	etermines	whether the	e forced contro	ol is "activ	e" (= 1) or		stage in manual	0255		
"passiv	/e" (0). If b	1 = 0, th	en the forced	control is	s "passive"		operation mode			
and th	e switchin	g input is av	ailable directly	y at the fo	orced con-	Given th	ne parameter "Valu	e range fan	speeds in	manual
trol ou	control is '	. I OT THE TO	the switching	inputie d	, then the	mode", \ lated fro	which fan speed stag	Je is to be en	ablea Will	ne calcn-
this c	se, bit 0	of the force	ed control obi	ect deter	mines the					CDT
value	of the inter	rnal forced of	control output	. If forced	control is	13 (32,	A-1 (A-2, A-3),	On / Off	1 Bit	CKI
blocke	d, the swit	ching input	is available dir	ectly at th	ne internal	49) The T		of the		
outpu	t of the for	ced control t	function.			stored in	ent switching state	of the corre	sponding	output is
Bit	I Bit O	Function				request	or will be sent auto	matically afte	r each obi	ect value
0	0	Forced con	trol disabled			change	according to the co	rresponding c	onfiguratio	on. If the
0	1	Forced con	trol disabled			paramet	er setting is "Switchi	ng status obje	ct = No", th	nis object
1	0	Force contr	olled OFF			is not ne	eded and is therefor	e not displayed	ł	
1	1	Eorce contr	olled ON							

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Object	Object name	Function	Туре	Flags	Ob	ject	Object name	Function	Туре	Flaç
14 (33, 50)	A-1 (A-2, A-3), Threshold for switching cycles	Set	4 Bytes	CRWT	19 55	(38, )	A-1 (A-2, A-3), Exceeding operating hours threshold	On / Off	1 Bit	CRT
By these for the t tween 1 bus. The ing of sv is set in c	e objects the thresh relevant output can and 4,294,967,295 se objects are only a vitching cycles" in th each case to "with th	bld for the sw be sent as an to the switchi available if the e "Evaluation" reshold monit	n integer ing actuat paramete paramete pring".	cle count value be- or via the er "Count- r window	Th ati wh ava "Ar thi	ese ob ng ho nether ailable nalysis resholo	jects report attainin ours count thresho a threshold is being if the parameter " parameter windo d monitoring".	g or exceeding old or interro exceeded. The "Operating he w is set in e	the relev gate via ese objects ours coun each case	ant op the are c t" in to "v
51)	Number of switching cycles	value	4 bytes	Chivi	20 56	(39, )	A-1 (A-2, A-3), Exceeding load	On / Off	1 Bit	CRT
again on are only cles" in "without ing".	coljects the humber tput (1 switching cy ice) can be sent at ar available if the para the "Evaluation" par threshold monitorin	r of switching ycle = switch ny time via the meter " Count rameter winde ng" or to "with	cycles for output of bus. The ing of swi ow is set threshold	and off se objects tching cy- either to monitor-	By loa cai cee "Lc	these id curr n be q eded. pad mo	set point value objects the attaini rent set point is rep ueried whether the These objects are pointoring" in the "Eva	ng or exceedi ported via the load current se only available aluation" parar	ng of the bus respe et point is e if the p neter wind	relev ectivel being arame low is
16 (35, 52)	A-1 (A-2, A-3), Exceeding switching cycles threshold	On / Off	1 Bit	CRT	eit 21 57	her to (40, )	"on exceeding" or to A-1 (A-2, A-3), Load current set point value	0 "on shortfall a	nd exceed	ling" . CRT
tively it ceeded. "Countin window	g cycle count thresh can be queried wh These objects are g of switching cycle is set in each case to	ether the thre only available es" in the "Eva "with thresho	e if the paluation" paluation	being ex- barameter barameter ring".	gu qu Th tor	rrent s eried ese ob ing" ir	whether the load c ojects are only availa the "Evaluation" patient the "Evaluation" patient the shortfa	y or shortain of via the bus re urrent set po ble if the para arameter wind all and on exce	spectively int is fallin meter "Lo low is set eeding".	it can ng sh ad mo eithe
53)	A-T (A-2, A-3), Threshold for operating hours	Set	4 Bytes	CRWI	22 58	(41, )	A-1 (A-2, A-3), Save load current	On	1 Bit	CW
By these for the r and 4,2 These of operatin in each o 18 (37, 54)	e objects the thresho elevant output is se 94,967,295 to the ojects are only availa g hours" in the "Eva case to "with thresho A-1 (A-2, A-3), Operating hours	old for the opent as an integ switching act ble if the para luation" param Id monitoring" Counter	erating ho er value b uator via meter "Co neter wind 4 Bytes	urs count etween 1 the bus. bunting of low is set	By po rec gra tel pa wii	these int val quires am wit egram ramete ndow i	objects the storage lue for the load cur a telegram with the th the value "0" is re is discarded. These er "Load monitoring is <u>not</u> set in each cas	of the current rent monitorin value "1" to be eceived via th objects are c g" in the "Eva e to "No".	load currend ng is initia e received. his object, only availa luation" p	ent as ted. T If a to then ble if arame
By these the relev	e objects the current ant output (i.e. how	t number of c many hours t	perating the output	hours for was ON)	23 59	(42, )	A-1 (A-2, A-3), Measured value of load current	Measured Value	2 Bytes	CRT
available "Evaluati threshol	e if the parameter "Co on" parameter wir d monitoring" or to "	with threshold	rating hou either to monitorin	urs" in the "without ng" .	By rec m/ me win <u>No</u> an	these quest, A. The easure ndow i <u>te</u> : The d 513/ 000 fo	objects the current after a change, or se objects are only d value of load curre is <u>not</u> set to "No" in e e measuring range r (21, up to 20000 for the N 562/11 and	load current r cyclically) as a available if th ent " in the "Eva each case. eaches up to 2 r the N 512/11 N 562/21	eading is an integer e parame aluation" p 20000 for and 512/2	sent value ter "Se arame N 513 21, up

Object	Object name	Function	Туре	Flags				
24	A, Status fan automatic mode	On / Off	1 Bit	CRT				
It is sent by this object whether automatic computing of the fan speed stage is enabled (Automatic mode = On) or whether the fan speed stage has been set by the user of the room (Automatic mode = Off). This object is only available if the pa- rameter "Status object automatic mode" in the "Fan control" parameter window is set to "Yes"								
25 A, Status fan Value 03 1 Byte CRT speed stage								
By this object the current fan speed stage is sent. This object is								

in the "Fan control" parameter window is set to "Yes".

The above explanations apply accordingly to the communication objects for submodules B...E. Their communication objects begin with the object "X-1, Switching" (X = B...E) in

Device B: from the number 60,

Device C: from the number 117,

Device D: from the number 174,

Device E: from the number 231.

#### 3. Parameter windows

#### 3.1 Headline

The next picture shows the parameter window which pops up after you choose the ETS function "Edit Parameters..." in an as yet unconfigured device (562/11).

levice overview		Device overview	
ommon functions		beneeovenee	
: Presettings -1, Behavior normal mode -1, Evaluation normal mode	A: Main module, type	Switching actuator 3x 10A, C-Load, Load-Check	~
-2, Behavior normal mode -2, Evaluation normal mode -3 Behavior normal mode	Number of connected submodules	4	\$
3, Evaluation normal mode Presettings	B: Submodule, type	Switching actuator 3x 10A, C-Load, Load-Check	~
-1, Benavior normal mode -1, Evaluation normal mode -2, Behavior normal mode	C: Submodule, type	Switching actuator 3x 10A, C-Load, Load-Check	~
-2, Evaluation normal mode -3, Behavior normal mode -3, Evaluation normal mode	D: Submodule, type	Switching actuator 3x 10A, C-Load, Load Check	~
1. Behavior normal mode     1. Behavior normal mode     2. Behavior normal mode     2. Behavior normal mode     3. Behavior normal mode     3. Behavior normal mode     1. Behavior normal mode     1. Behavior normal mode     4. Behavior normal mode     4. Behavior normal mode     4. Behavior normal mode     5. Behavior normal mode     5. Behavior normal mode     5. Behavior normal mode     1. Behavior normal mode			

This window contains the following selections in the header:

Switching actuator N 512/11 File Print Standard Information

#### File

If you select the "File" tab in the header, then you can choose one of the following actions:

Export

Import.

Export: The export function is used to export the device's current configuration in XML format from the ETS project database and save them on any drive in a file to be defined by the operator. The following window pops up after you select this action:

Store?		
2	Changes have to be stored f	irstl
	Yes	No

At this point, you should remember that all final parameter settings entered are to be saved initially in the project database before exporting the data. Only when this prompt has been answered with "Yes" does a new window open for selecting the drive and file to which the file export is to be made.

Import: The import function is used to load the settings / group addresses for a N 513/11, N 512/11, or N 562/11

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#### GAMMA instabus

#### Application program description

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switching actuator (which have been stored in a file via the export function) into another device. This can be used to copy configurations / group addresses into additional devices or to load them in a new device which was exchanged after a fault. The following window pops up after you select this action:



Only when this prompt has been answered with "Yes" does a new window open for selecting the drive and the xml file to be imported. After selecting the file to be imported, you will be prompted in the following window to confirm whether the allocated group addresses are also to be imported:



If you answer "Yes" to this prompt, then the allocated group addresses are imported.

#### Note:

Parameter settings for the load monitoring are only copied unchanged if these parameters are copied from a device mit the same rated current (e.g. from N 512/11 to N 512/11). In all other cases, the parameters for load monitoring are set to the default values during the copy process.

#### Print

If you select the "Print" tab in the header, then you can choose one of the following actions:

Printer

Preview.

<u>Printer</u>: After you select "Printer", a window opens for you to choose the printer on which the device settings are to be printed out for documentation purposes. Preview: After selecting "Preview", a window opens with

a print view of the device parameters.

#### Standard

After selecting this button, the following window opens:



If you press the "Yes" button, then all parameters are reset to their standard ex factory setting. This causes the loss of all settings that have not been archived via the export function.

#### Information

After this button is selected, a window opens with information about the current release of the application program and an Internet link to Siemens Building Control. Clicking on the open Info window closes it.

#### Selectable parameter windows

The following picture shows the overview in the left of the ETS parameter window of all parameter window selections for a main module with four connected submodules. In all devices, all outputs are set to "Normal mode". The number and type of parameter window selections are determined by the number of connected submodules and the mode set for each output.

Ex works, the number of submodules is set to "4" and the modes for all outputs to "Normal mode". This ensures that, even without prior configuration of the main module and without communication via the bus, you can switch all outputs from all modules on and off with the buttons on top of the main module.

#### Device overview Common functions

- A: Presettings
- A-1, Behavior normal mode
- A-1, Evaluation normal mode
- A-2, Behavior normal mode
- A-2, Evaluation normal mode
- A-3, Behavior normal mode
- A-3, Evaluation normal mode
- B: Presettings
- B-1, Behavior normal mode B-1, Evaluation normal mode
- B-2, Behavior normal mode
- B-2, Evaluation normal mode
- B-3, Behavior normal mode
- B-3, Evaluation normal mode

All parameter windows and the parameters contained in them are listed and explained below.

Technical manual

982003, 24 pages

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#### 3.2 Device overview

Device overview				
A: Main module, type	Switching actuator 3x 10A, C-Load, Load-Check	~		
Number of connected submodules	4	÷		
B: Submodule, type	Switching actuator 3x 10A, C-Load, Load-Check	*		
C: Submodule, type	Switching actuator 3x 10A, C-Load, Load-Check	~		
D: Submodule, type	Switching actuator 3x 10A, C-Load, Load-Check	~		
E: Submodule, type	Switching actuator 3x 10A, C-Load, Load-Check	*		

This parameter window is used to set the number and type of submodules connected to the main module.

Parameter	Settings			
A: Main module, type	Switching actuator 3x 10A, C-load, load-check			
This is a pure display field that indi connected to the bus as main module	cates which device type is e A			
Number of connected submodules	0, 1, 2, 3, <b>4</b>			
You must use this parameter to set actually connected to the main modu	how many submodules are le.			
Ex works, the number of submodu modes for all outputs to "Normal mod without prior configuration of the communication via the bus, you can modules on and off with the buttons of	ules is set to "4" and the de". This ensures that, even main module and without switch all outputs from all on top of the main module.			
<u>Note</u> : If at this point you set a smaller number of submodules than are actually connected, then the main module will also not control those submodules that are not recorded by the set number				
If at this point you set a larger numb actually connected, then in each cas LED on top of the main module fla submodule a fault was detected.	er of submodules than are e the corresponding device ashes to indicate at which			
B: (C:, D:, E:) Submodule, type	Switching actuator 3x 10A, C-load, load- check; Switching actuator 3x 16A, C-load, load-check; Switching actuator 3x 20A, C-load, load-check			
Whether and how many of these parameters are visible is de- termined by setting the previous parameter "Number of con- nected submodules"				
You use this parameter to set which the main module as device B (or C,	submodule is connected to D or E). Currently, you can			

connect to it only submodules with the same switching outputs as in the main module.

#### 3.3 Common functions

Common functions				
On-time direct mode in mm:ss (00:0030:00; 00:00 = unlimited)	15:00			
Send status / threshold objects	on request and after change of status	~		
Transmission blocking period for status objects in seconds (115)	01			
8-bit scene control	No	~		

You use this parameter window to set those functions which are common to all devices (main module and submodules).

Parameter	Settings			
On-time direct mode in mm:ss (00:0030:00; 00.00 = unlimited)	15:00			
Use this parameter to set whether direct mode is switched of permanently with the mode switching button and must be switched off by pressing this button again ("unlimited"), of whether it is switched on for a limited period and switches of automatically when the set time has elapsed. Time-limited switching on of direct mode ensures that bus mode cannot be blocked permanently by direct mode. Each press of the button in direct mode always leads to direct mode being extended by the set ON time. After the ON time has elapsed without a furthe key press, direct mode is switched off automatically and bus mode is re-enabled accordingly (if communication via the bus is possible). The corresponding communication object reports switching of direct mode on and off via the bus.				
Send status / threshold objects	on request			
	on request and after			
	change of status			
This sets when the status and thresh (only on request or on request and status change).	nold objects are to be sent d automatically after each			
Transmission blocking period for status objects in seconds (115)	01			
In order to avoid a prohibitively high sending of numerous status / thresho recovery or after a restart of the ma individual transmission blocking per objects will be sent only after this has	h bus load by simultaneous old objects after bus voltage in module, you can set an iod. The status / threshold elapsed.			
8-bit scene control	<b>No</b> Yes			
Use this parameter to set whether the porated in the switching actuator is to responding communication object a "X-n, 8-bit scene control" are added scene numbers per output.	e 8-bit scene control incor- be enabled. If so, the cor- ind the parameter window for assignment of up to 8			

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#### 3.4 A: Presettings

	A: Presettings	
Special function	No	~
Operation mode output 1	Normal mode	~
Operation mode output 2	Normal mode	~
Operation mode output 3	Normal mode	~

This parameter window is used per module (in this case, main module "A") to set the function or mode for each output.

Parameter	Settings
Special function	no; Configure all outputs iden- tically; 3-phase switching; Fan speed control 1-stage; Fan speed control 2-stage; Fan speed control 3-stage
You use this parameter to select t figuration for all outputs of a mo common switching of 3 outputs (3 3-stage fan speed control (e.g. for ply air fan or an exhaust air fan).	he common, identical con- odule or the simultaneous, -phase switching) or a 1- to a fan coil unit or for a sup-
Operation mode output 1 (2, 3)	<b>Normal mode;</b> Timer mode; Thermal drive control mode
These parameters are only visible f function was selected. Depending lected, you can only set the mode figure all outputs identically" and v only for outputs 2 and 3 (as with " or only for output 3 (as with "Fan you can no longer set the mode fa with " Fan speed control 3-stage "). You use these parameters to set v output is to work as a "normal" perior or be used to control a thermal drive	or each output if no special on the special function se- for output 1 (as with "Con- vith "3-phase switching") or Fan speed control 1-stage") speed control 2-stage") or or any of the 3 outputs (as whether the corresponding manent switch or as a timer e for a small valve.

### 3.5 A-n: Behavior normal mode

A-1, Behav	vior normal mode	
Relay mode	normally open contact	~
Night mode	Yes	~
On-time during night mode in hh:mm:ss (00:00:0023:59:59)	00:30:00	
Warning before switching off	Yes	~
On-delay in hh:mm:ss (00:00:0023:59:59)	00:00:00	
Off-delay in hh:mm:ss (00:00:0023:59:59)	00:00:00	
Logic operation	AND function	*
Manual override	Yes, time-limited	~
Manual override period in h:mm:ss (0:00:058:00:00)	0:05:00	
Forced control	Yes	~
Behavior on bus voltage failure	no change	~
Start value switching object after bus voltage recovery	as before voltage failure	~
Start value logic object after bus voltage recovery	as before voltage failure	~

This parameter window is used for the corresponding output (in the above picture, main module "A", output 1) to set the switching behavior in "Normal mode".

Parameter	Settings	
Relay mode	Normally open contact normally closed contact	
This parameter determines the behavior of the output (relay contact). With the "NC contact" setting, "Switch off" always means closing the contact and "Switch on" always means open ing the contact. "NO contact": Off telegram = contact open, On telegram = contact closed. "NC contact": Off telegram = contact closed, On telegram = contact closed, On telegram = contact open.		
Night mode No Yes		
You use this parameter to set whether an additional "Night mode" communication object is to be available for this output. It night mode is on, the output can no longer be switched or permanently but only for a time-limited period (e.g. for lighting for cleaning). If you set this parameter to "Yes", then the following parameters "On-time during night mode in hh:mm:ss" and "Warning before switching off" are added		
On-time during night mode in hh:mm:ss (00:00:0023:59:59)	00:30:00	
This parameter is visible only if the mode" is set to "Yes". You use it to night mode.	previous parameter "Night set the wanted on-time in	

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		_					
Parameter	Settings	Para	amete	er		Settings	
Warning before switching off	<b>Yes</b> No	Ford	ced co	ontrol		<b>Yes</b> No	
You use this parameter in night mo that it is not switched off immediatel has elapsed, but is switched off initia then switched on again for 10 seco more before the output is then switc output is used for lighting control, th warning and has time enough to switt On-delay in hh:mm:ss (00:00:0023:59:59)	bde to set the output such y when the configured time ally for only 1 second and is nds. This is repeated twice thed off permanently. If the nen a user is given advance tch the lighting on again. 00:00:00	If ne Forc outp Bit "pas the outp cont case	ecessa ced co out, re 1 dete ssive" switc out. If trol is e, bit	ary, you ontrol", egardles ermines (0). If b hing in bit 1 o s "active 0 of the	use this parameter which allows forced s of any other objec whether the forced it 1 = 0, then the for put is available dir f the forced control e forced control obje	to add the 2-bi I switching on ts acting on the control is "ac rced control is ectly at the for object = 1, the g input is disa ect determines	t object "X-n: or off of the e output. tive" (= 1) or "passive" and orced control en the forced abled. In this the value of
This parameter sets the wanted on-d 00:00:00 means that ON commands A set on delay act, only on the "Swit	elay time. The default value are executed immediately.	the the the	inter switc force	hal force hing inp d contro	ed control output. I out is available direc ol function.	f forced contro tly at the inter	ol is blocked, nal output of
object for a logic operation allocated	to the output as well.	В	Bit 1	Bit O	Function		
Off-delay in hh:mm:ss	00:00:00		0	0	Forced control disab	led	
(00:00:0023:59:59)			0	1	Forced control disab	led	
This parameter sets the wanted off-d	elay time. The default value		1	0	Force controlled OFF	:	
00:00:00 means that OFF commands	are executed immediately.		1	1	Force controlled ON		
A set off-delay acts only on the "Swi	tching" object and not on a	Beh	avior	on bus	voltage failure	Off	
Logic operation	No logic operation					On	
If need be, the switching of the outp	AND function OR function ut via a logic operation can	You outp If th	use t out in ie bus	his para the eve voltage	ameter to set the wa ent of a bus voltage f e fails, the current s	nted switching ailure. tate of the swi	g state of the tching object
The logic operation object is not sub	ject to a time delay, i.e. the	Will	be sa	ved peri	manently.		1.
logic operation is always effective im	mediately.	Star	rt valu volta	le swite	ching object after	as before ve	oltage
Manual override	<b>No</b> Yes	543	vorta	ige rece	very	Off On	
This parameter determines whether Manual override", via which an outp mal" switching input (if need be wit switched on again permanently or fo	Yes, time-limited an additional object "X-n: ut switched off by the "nor- h a logic operation) can be or a set time, is to be added	You outp If th swit stor	use t out in ne pai ching ed at	his para the eve rameter object the time	ameter to set the wa ent of bus voltage rea is set to "as before is set to the valu e of the bus voltage	nted switching covery. e voltage failu ie of the swit failure.	g state of the re", then the sching object
to this output. This object only switcl ter has been switched off before via put (if need be, with a logic operation put remains switched on.	hes off the output if the lat- the "normal" switching in- on). In other cases, the out-	Star volt	rt valu age r	ue logic ecovery	: object after bus Y	as before vo failure Off On	oltage
Manual override period in h:mm:ss (0:00:058:00:00)	0:05:00	This	para	meter is	s visible only if the plant	Darameter "Log	jic operation"
This parameter is visible only if the p override" is set to "Yes, time-limite wanted on-time with manual overrid	previous parameter "Manual ed". You use it to set the e.	star If th logic time	t valu ne pai c inpu e of th	e of the rameter ut is set	logic input after bus is set to "as before to the value of the oltage failure.	s voltage recov e voltage failu e logic object	ery. re", then the stored at the

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#### 3.6 A-n: Evaluation normal mode

A-1, Evaluation normal mode			
Yes	~		
with threshold monitoring	~		
with threshold monitoring	~		
on shortfall and exceedance	~		
11000	\$		
150	\$		
on request and after change and cyclically	~		
150	\$		
0:05			
	ation normal mode       Yes       with threshold monitoring       with threshold monitoring       on shortfall and exceedance       11000       150       on request and after change and cyclically       150       0.05		

This parameter window is used for the corresponding output (in the above picture, main module "A", output 1) to set the monitoring and evaluation functions in "Normal mode".

Parameter	Settings
Switching status object	No
You use this parameter to set wheth communication object is to be availe output. For example, the status object the current output switching status of with visualization software	Yes er a "X-n: Status switching" able for the corresponding ect can be used to display on a display, a panel or a PC
Counting of switching cycles	No; without threshold monitoring; with threshold monitoring
You use this parameter to enable switching cycle counting (i.e. how often an output has been switched on and off again) for the corresponding output. If the parameter is set to "without threshold monitoring", then only the communication object "X- n: Number of switching cycles" is added to this output. If the pa- rameter is set to "with threshold monitoring", then the commu- nication object "Threshold for switching cycles", which pre- scribes a threshold and the communication object "Exceeding switching cycles threshold", which reports the attaining or ex- ceeding of the prescribed threshold, are also added.	

Parameter	Settings
Counting of operating hours	No:
counting of operating nours	without threshold
	monitoring:
	with threshold
	monitoring
This parameter enables operating h	ours counting (i.e. for how
many hours the output was switche	d on) for the corresponding
output. If the parameter is set to "	without threshold monitor-
ing", then only the communication o	bject "X-n: Operating hours"
is added to this output. If the parame	eter is set to "with threshold
monitoring", then the communication	on object "Threshold for op-
erating hours", which prescribes a t	nreshold and the communi-
cation object "Exceeding operating	hours threshold", which re-
ports the attaining or exceeding of t	he prescribed threshold, are
also added.	1
Load monitoring	No;
	on exceeding;
	on shortfall;
	on shortfall and exceed-
You use this parameter to enable lo	ad monitoring for overload,
load failure or both for the relevant	output. If the parameter is
set to "on exceeding", then only the	communication object "X-n:
Exceeding load current set point value	e is added to this output. If
tion object "X-n: Load current set po	int value shortfall" is added
to this output. If the parameter is	set to "on shortfall and ex-
ceeding", then both communication	objects for reporting over-
load and load failure are added. Also	o, in all cases of load moni-
toring the communication object "Sa	ive load current as setpoint
value", via which storing of the curr	
	ent load current reading as
load current set point value is initiat	ent load current reading as ed, is added as well as both
load current set point value is initiat the following parameters "Set point	ent load current reading as ed, is added as well as both value of load current in mA"
load current set point value is initiat the following parameters "Set point and "Hysteresis load current in mA".	ent load current reading as ed, is added as well as both value of load current in mA"
load current set point value is initiat the following parameters "Set point and "Hysteresis load current in mA". Set point value of load current in	ent load current reading as ed, is added as well as both value of load current in mA" 10000
load current set point value is initiat the following parameters "Set point and "Hysteresis load current in mA". Set point value of load current in mA (10016000)	ent load current reading as ed, is added as well as both value of load current in mA"
load current set point value is initiat the following parameters "Set point and "Hysteresis load current in mA". Set point value of load current in mA (10016000) [applies to N562/11]	ent load current reading as ed, is added as well as both value of load current in mA" 10000
load current set point value is initiat the following parameters "Set point and "Hysteresis load current in mA". Set point value of load current in mA (10016000) [applies to N562/11] Set point value of load current in	ent load current reading as ed, is added as well as both value of load current in mA" 10000 16000
load current set point value is initiat the following parameters "Set point and "Hysteresis load current in mA". Set point value of load current in mA (10016000) [applies to N562/11] Set point value of load current in mA (10016000)	ent load current reading as ed, is added as well as both value of load current in mA" 10000 16000
load current set point value is initiat the following parameters "Set point and "Hysteresis load current in mA". Set point value of load current in mA (10016000) [applies to N562/11] Set point value of load current in mA (10016000) [applies to N512/11]	ent load current reading as ed, is added as well as both value of load current in mA" 10000 16000
load current set point value is initiat the following parameters "Set point and "Hysteresis load current in mA". Set point value of load current in mA (10016000) [applies to N562/11] Set point value of load current in mA (10016000) [applies to N512/11] Set point value of load current in	ent load current reading as ed, is added as well as both value of load current in mA" 10000 16000 20000
load current set point value is initiat the following parameters "Set point and "Hysteresis load current in mA". Set point value of load current in mA (10016000) [applies to N562/11] Set point value of load current in mA (10016000) [applies to N512/11] Set point value of load current in mA (10016000)	ent load current reading as ed, is added as well as both value of load current in mA" 10000 16000 20000
load current set point value is initiat the following parameters "Set point and "Hysteresis load current in mA". Set point value of load current in mA (10016000) [applies to N562/11] Set point value of load current in mA (10016000) [applies to N512/11] Set point value of load current in mA (10016000) [applies to N513/11]	ent load current reading as ed, is added as well as both value of load current in mA" 10000 16000 20000
load current set point value is initiat the following parameters "Set point and "Hysteresis load current in mA". Set point value of load current in mA (10016000) [applies to N562/11] Set point value of load current in mA (10016000) [applies to N512/11] Set point value of load current in mA (10016000) [applies to N513/11] This parameter is visible only if the	ent load current reading as ed, is added as well as both value of load current in mA" 10000 16000 20000 previous parameter, "Load
load current set point value is initiat the following parameters "Set point and "Hysteresis load current in mA". Set point value of load current in mA (10016000) [applies to N562/11] Set point value of load current in mA (10016000) [applies to N512/11] Set point value of load current in mA (10016000) [applies to N513/11] This parameter is visible only if the monitoring" is <u>not</u> set to "No". It is to	ent load current reading as ed, is added as well as both value of load current in mA" 10000 16000 20000 previous parameter, "Load used to set the load current
load current set point value is initiat the following parameters "Set point and "Hysteresis load current in mA". Set point value of load current in mA (10016000) [applies to N562/11] Set point value of load current in mA (10016000) [applies to N512/11] Set point value of load current in mA (10016000) [applies to N513/11] This parameter is visible only if the monitoring" is <u>not</u> set to "No". It is us set point value for the correspond	ent load current reading as ed, is added as well as both value of load current in mA" 10000 16000 20000 previous parameter, "Load used to set the load current ng output load check (i.e.
load current set point value is initiat the following parameters "Set point and "Hysteresis load current in mA". Set point value of load current in mA (10016000) [applies to N562/11] Set point value of load current in mA (10016000) [applies to N512/11] Set point value of load current in mA (10016000) [applies to N513/11] This parameter is visible only if the monitoring" is <u>not</u> set to "No". It is us set point value for the correspond load monitoring for exceeding and/or	ent load current reading as ed, is added as well as both value of load current in mA" 10000 16000 20000 previous parameter, "Load used to set the load current ng output load check (i.e. r a shortfall compared with
load current set point value is initiat the following parameters "Set point and "Hysteresis load current in mA". Set point value of load current in mA (10016000) [applies to N562/11] Set point value of load current in mA (10016000) [applies to N512/11] Set point value of load current in mA (10016000) [applies to N513/11] This parameter is visible only if the monitoring" is <u>not</u> set to "No". It is us set point value for the correspond load monitoring for exceeding and/or the set point value).	ent load current reading as ed, is added as well as both value of load current in mA" 10000 16000 20000 previous parameter, "Load used to set the load current ng output load check (i.e. or a shortfall compared with
load current set point value is initiat the following parameters "Set point and "Hysteresis load current in mA". Set point value of load current in mA (10016000) [applies to N562/11] Set point value of load current in mA (10016000) [applies to N512/11] Set point value of load current in mA (10016000) [applies to N513/11] This parameter is visible only if the monitoring" is <u>not</u> set to "No". It is us set point value for the correspond load monitoring for exceeding and/or the set point value). Note: If the load current set point value	ent load current reading as ed, is added as well as both value of load current in mA" 10000 16000 20000 previous parameter, "Load used to set the load current ng output load check (i.e. or a shortfall compared with alue is set as not above this
load current set point value is initiat the following parameters "Set point and "Hysteresis load current in mA". Set point value of load current in mA (10016000) [applies to N562/11] Set point value of load current in mA (10016000) [applies to N512/11] Set point value of load current in mA (10016000) [applies to N513/11] This parameter is visible only if the monitoring" is <u>not</u> set to "No". It is us set point value for the correspond load monitoring for exceeding and/of the set point value). <u>Note</u> : If the load current set point value parameter but above the communic	ent load current reading as ed, is added as well as both value of load current in mA" 10000 16000 20000 previous parameter, "Load used to set the load current ng output load check (i.e. or a shortfall compared with alue is set as not above this ation object "X-n: Save load here the adventures that the
load current set point value is initiat the following parameters "Set point value is initiat and "Hysteresis load current in mA". Set point value of load current in mA (10016000) [applies to N562/11] Set point value of load current in mA (10016000) [applies to N512/11] Set point value of load current in mA (10016000) [applies to N513/11] This parameter is visible only if the monitoring" is <u>not</u> set to "No". It is us set point value for the correspond load monitoring for exceeding and/or the set point value). <u>Note</u> : If the load current set point value parameter but above the communic current as set point value", then this set point value will the base the set point value.	ent load current reading as ed, is added as well as both value of load current in mA" 10000 16000 20000 previous parameter, "Load used to set the load current ing output load check (i.e. or a shortfall compared with alue is set as not above this ation object "X-n: Save load has the advantage that the
load current set point value is initiat the following parameters "Set point value is initiat and "Hysteresis load current in mA". Set point value of load current in mA (10016000) [applies to N562/11] Set point value of load current in mA (10016000) [applies to N512/11] Set point value of load current in mA (10016000) [applies to N513/11] This parameter is visible only if the monitoring" is <u>not</u> set to "No". It is us set point value for the correspond load monitoring for exceeding and/or the set point value). <u>Note</u> : If the load current set point value parameter but above the communic current as set point value", then this set point value will then be exactly e rent in operation. However, a set point	ent load current reading as ed, is added as well as both value of load current in mA" 10000 16000 20000 previous parameter, "Load used to set the load current ng output load check (i.e. or a shortfall compared with alue is set as not above this ation object "X-n: Save load has the advantage that the qual to the normal load cur- int value stored in this way

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Parameter	Settings	
Hysteresis load current in mA	150	
[applies to N562/11]		
Hysteresis load current in mA	150	
(1305000) [applies to N512/11]		
Hysteresis load current in mA	150	
<b>(1306000)</b> [applies to N513/11]		
This parameter is visible only if the previous parameter, "Load monitoring", is <u>not</u> set to "No". It is used to set by which value the set point value should exceed or fall short in order that an exceeding or shortfall of the load current set point value will be reported		
Send measured value of load	No;	
current	on request; on request and after	
	change;	
	on request and after change and cyclically	
This parameter determines whether reading of this output is to be sent. If "No", then the communication object load current" is added.	and when the load current this parameter is <u>not</u> set to ct "X-n: Measured value of	
Send when change of value is	150	
greater than (value in mA: (100 - 4000)		
[applies to N562/11]		
Send when change of value is	150	
greater than (value in mA: (1305000)		
[applies to N512/11]		
Send when change of value is	150	
greater than (value in mA; (1306000)		
[applies to N513/11]		
This parameter is visible only if the measured value of load current" is se	previous parameter, "Send	
after change" or to "on request and a	fter change and cyclically".	
It is used to set by which value	the load current must be	
Send cyclically every	0:05	
(h:mm; 0:052:00)		
This parameter is visible only if the previous parameter, "Send measured value of load current" is set to "on request and after change and cyclically". It is used to set the wanted time interval for the cyclical sending of the load current reading.		

#### 3.7 A-n: 8-bit scene control

A	-1, 8-bit scene control	
Device A output 1: Assignment 1	not used	~
Device A output 1: Assignment 2	not used	~
Device A output 1: Assignment 3	not used	~
Device A output 1: Assignment 4	not used	~
Device A output 1: Assignment 5	not used	~
Device A output 1: Assignment 6	not used	~
Device A output 1: Assignment 7	not used	~
Device A output 1: Assignment 8	not used	~

This parameter window is visible only if the parameter "8-bit scene control" in the "Common functions" parameter window is set to "Yes". It enables the relevant output to be incorporated in up to 8 scenes.

Parameter	Settings	
Device A, output 1: Assignment 1	<b>Not used</b> 1 64	
This parameter incorporates output 1 of the main module A in an 8-bit scene with a number between 1 and 64. "Not used" means that this allocation option is not used. Notwithstanding, the output can be integrated in an 8-bit scene by other assign- ments. <u>Note</u> : If a scene is recalled before the corresponding switching		
response when the scene is recalled.	ins scene, then there is no	
Device A, output 1: Assignment 2	<b>Not used</b> 1 64	
This parameter incorporates output 1 of the main module A in a further 8-bit scene with a number between 1 and 64. "Not used" means that this allocation option is not used. Notwithstanding, the output can be integrated in an 8-bit scene by other assignments.		
<u>Note</u> : If a scene is recalled before the states are programmed (stored) for the response when the scene is recalled.	e corresponding switching his scene, then there is no	

## and so on until

Parameter	Settings
Device A, output 1: Assignment 8	<b>Not used</b> 1 64
This parameter incorporates output 1 of the main module A in a further 8-bit scene with a number between 1 and 64. "Not used" means that this allocation option is not used. Notwithstanding, the output can be integrated in an 8-bit scene by other assignments	
<u>Note</u> : If a scene is recalled before the states are programmed (stored) for t	e corresponding switching

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# Parameter response when the scene is recalled.

Note: The scenes for all additional main module and

submodule outputs are allocated accordingly.

Settings

# 3.8 A-n: Behavior timer mode

Yes	~
normally open contact	~
Yes	~
00:15:00	
AND function	~
Yes	~
no change	~
as before voltage failure	~
as before voltage failure	~
	Yes normally open contact Yes 00:15:00 AND function Yes no change as before voltage failure as before voltage failure

This parameter window is only visible if the "Operation mode" parameter for the corresponding output has been set to "Timer mode".

Parameter	Settings		
Retriggering possible	<b>No</b> Yes		
This parameter sets whether on receiving a new ON telegram during an on-period, this is restarted and thus the on-time is to be extended.			
Relay mode	normally open contact normally closed contact		
This parameter determines the behavior of the output (relay contact). With the "NC contact" setting, "Switch off" always means closing the contact and "Switch on" always means open- ing the contact. "NO contact": Off telegram = contact open, On telegram = contact closed. "NC contact": Off telegram = contact closed, On telegram = contact closed,			
Warning before switching off	<b>Yes</b> No		
You use this parameter in night mode to set the output such that it is not switched off immediately when the configured time has elapsed, but is switched off initially for only 1 second and is then switched on again for 10 seconds. This is repeated twice more before the output is then switched off permanently. If the output is used for lighting control, then a user is given advance warning and has time enough to switch the lighting on again.			
On-time in hh:mm:ss (00:00:0023:59:59)	00:15:00		
This parameter sets the wanted on- mode.	ime for the output in timer		

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ē.,	aramete	er		Settings	
ī	ogic ope	eration		no logic oper	ration
				AND function	
		<u> </u>		OR function	
li h	need b	e, the sv	vitching of the outp	ut via a logic o	peration can
	e compi	emente	d by an additional of	bject X-n: Logi	c operation .
F	orced co	ontrol		Yes	
If pacassary, you use this parameter to		to add the 2-bi	t object "X-n·		
F	orced co	ontrol", '	which allows forced	switching on	or off of the
o	utput, re	agardles	s of any other objec	ts acting on the	e output.
B	it 1 dete	ermines	whether the forced	l control is "ac	tive" (= 1) or
1	passive"	(0). If bi	it $1 = 0$ , then the fo	rced control is	"passive" and
C C	ne switc	hit 1 of	put is available dir f the forced control	ectly at the fo	prced control
c	ontrol is	s "active	and the switchin	a input is disa	bled. In this
c	ase, bit	0 of the	forced control obje	ect determines	the value of
t	he interi	nal force	ed control output. I	f forced contro	ol is blocked,
t	he switc	hing inp	out is available direc	tly at the inter	nal output of
t	he force	d contro	l function.		l
	Bit 1	Bit 0	Function		
	0	0	Forced control disab	led	
	0	1	Forced control disab	led	
	1	0	Force controlled OFF	-	
	1	1	Force controlled ON		
B	ehavior	on bus	voltage failure	Off	
				On	
v		bic para	motor to cot the wa	no change	s stata of the
~	utnut in	the eve	nt of a bus voltage f	ailure	j state of the
۲ ۵		voltage	fails the surrent st	anaror	1. 1
1 0 11	f the bus	vollage	e fails, the current st	ate of the swit	ching object
1 0 11	f the bus vill be sa	ved peri	manently.	ate of the swit	ching object
	the bus vill be sa tart valu	ved peri ie swite	manently.	ate of the swit as before vo	oltage fail-
r o li	the bus vill be sa tart valu ous volta	ved peri ie switc ge reco	manently. hing object after wery	ate of the swit as before vo ure; Off; On	oltage fail-
	the bus vill be sa tart valu ous volta ou use t	ved peri ie switc ige reco his para	manently. ching object after very meter to set the wa	ate of the swit as before vo ure; Off; On inted switching	oltage fail- state of the
	f the bus vill be sa tart valu ous volta ou use t output in	ved peri <b>Je switc</b> <b>ge reco</b> this para the eve	manently. thing object after very meter to set the wa nt of bus voltage re- in est to set set set set	ate of the swit as before vo ure; Off; On inted switching covery.	oltage fail-
	f the bus vill be sa tart valu ous volta fou use t butput in f the pa	ved peri Je switc ge reco this para the eve rameter	manently. thing object after very meter to set the wa nt of bus voltage re- is set to the values is set	ate of the swit as before vo ure; Off; On inted switching covery. e voltage failur e of the swit	oltage fail- ostate of the re", then the
r oli S b Y oli S s	f the bus vill be sa tart value out volta fou use t output in f the par witching tored at	ved peri <b>Je switc</b> <b>Je swit</b>	manently. thing object after very meter to set the wa nt of bus voltage re- is set to "as before is set to the valu e of the bus voltage	ate of the swit as before vo ure; Off; On inted switching covery. e voltage failui te of the swit failure.	oltage fail- oltage fail- g state of the re", then the ching object
	the bus vill be sa tart value out volta out use t butput in f the par witching tored at	ved peri <b>Je switc</b> <b>ige reco</b> this para the eve rameter object the time	manently. thing object after very meter to set the wa nt of bus voltage rea is set to "as before is set to the value of the bus voltage object after bus	ate of the swit as before vo ure; Off; On inted switching covery. e voltage failur failure. as before vo	oltage fail- ostate of the re", then the ching object
	the bus vill be sa tart value ous volta ou use to utput in the par witching tored at tart value oltage r	ved peri Je switc ige reco this para the eve rameter object the time Je logic ecovery	manently. hing object after very meter to set the wa nt of bus voltage rea- is set to "as before is set to the valu e of the bus voltage object after bus	ate of the swit as before vo ure; Off; On inted switching overy. voltage failure failure. as before vo ure; Off; On	oltage fail- oltage fail- g state of the re", then the ching object
	the bus vill be sa tart value ous volta four use to output in four par witching tored at itart value voltage r ihis para	ved peri Je switc ge reco his para the eve rameter object the time Je logic ecovery meter is	manently. thing object after very meter to set the war nt of bus voltage rea- is set to "as before is set to the value of the bus voltage object after bus very voltage rea- very ve	ate of the swit as before vo ure; Off; On inted switching covery. e voltage failur failure. as before vo ure; Off; On parameter "Log	oltage fail- oltage fail- of state of the re", then the ching object oltage fail- ic operation"
	the bus vill be sa tart value to volta fou use t to utput in f the para witching tored at tart value voltage r this para s not set	ved peri Je switc ge reco his para the eve rameter object the time Je logic ecovery meter is to "No l	manently. thing object after very meter to set the war nt of bus voltage rea- is set to "as beford is set to the value of the bus voltage object after bus / s visible only if the p ogic operation". You	ate of the swit as before vo ure; Off; On inted switching covery. e voltage failure of the swit failure. as before vo ure; Off; On parameter "Log use this to se	oltage fail- oltage fail- g state of the re", then the ching object oltage fail- ic operation" t the wanted
1 0 11 v S b Y 0 11 s s S V T is s	the bus vill be sa tart value to volta fou use t to uput in f the par witching tored at tart value voltage r this para s not set tart value	ved peri Je switc ge reco his para the eve rameter object the time Je logic ecovery meter is to "No l e of the	manently. thing object after very meter to set the war nt of bus voltage rea- is set to "as before is set to the value of the bus voltage object after bus / s visible only if the p ogic operation". You logic input after bus	ate of the swit as before vo ure; Off; On anted switching covery. e voltage failure of the swit failure. as before vo ure; Off; On parameter "Log use this to se s voltage recov	oltage fail- g state of the re", then the ching object oltage fail- ic operation" t the wanted ery.
	the bus vill be sa tart value ou use t output in the para witching tored at tart value oltage r his para s not set tart value t the para	ved peri Je switc ge reco his para the eve rameter object the time Je logic ecovery meter is to "No l e of the rameter	wanently. thing object after very meter to set the want of bus voltage rea- is set to "as before is set to the value object after bus versible only if the point ogic operation". You logic input after bus is set to "as before is set to "as before is set to "as before is set to "as before is set to "as before	ate of the swit as before vo ure; Off; On inted switching covery. e voltage failure of the swit failure. as before vo ure; Off; On parameter "Log u use this to se s voltage failure e voltage failure	oltage fail- g state of the re", then the ching object oltage fail- ic operation" t the wanted ery. re", then the
Toll V S b Y oll s s S V T is s II lo	the bus vill be sa tart value ou use t output in the par witching tored at tart value oltage r his para s not set tart value the par ogic inpu	ved peri Je switc ge reco his para the eve rameter object the time Je logic ecovery meter is to "No l e of the 'ameter at the eve rameter sto "No l	manently. thing object after very meter to set the war nt of bus voltage rea- is set to "as before is set to the value object after bus versible only if the p ogic operation". You logic input after bus is set to "as before to the value of the	ate of the swit as before vo ure; Off; On inted switching covery. e voltage failure of the swit failure. as before vo ure; Off; On parameter "Log u use this to se s voltage failure e voltage failure e logic object se	oltage fail- g state of the re", then the ching object oltage fail- ic operation" t the wanted ery. re", then the stored at the

# 3.9 A-n: Evaluation timer mode

A-1, Evalua	tion timer mode	
Switching status object	Yes	~
Counting of switching cycles	with threshold monitoring	~
Counting of operating hours	with threshold monitoring	~
Load monitoring	on shortfall and exceedance	~
Set point value of load current in mA (6511000)	11000	\$
Hysteresis load current in mA (652500)	150	*
Send measured value of load current	on request and after change and cyclically	~
Send when change of value is greater than (value in mA; 652500)	150	\$
Send cyclically every (h:mm; 0:052:00)	0:05	

The parameters in this parameter window are identical with the parameters in the parameter window "X-n; Evaluation normal mode" (see section 3.6).

#### 3.10 A-n: Behavior thermal drive control mode

A-1, Behavior thermal drive control mode			
Control information via	8-bit object	*	
Valve deenergized	closed	*	
Valve closed when actuating variable in % is lower than or equal (030)	0	÷	
Valve fully open when actuating variable in % is greater than or equal (70100)	100	<u>.</u>	
Hysteresis in % (315)	9	÷	
Cycle time for PWM in minutes (530)	15		
Protection against valve blockage	Yes	~	
Behavior on bus voltage failure	no change	*	
Switching status on bus voltage recovery	as before voltage failure	~	

This parameter window is only visible if the "Operation mode" parameter for the corresponding output has been set to "Thermal drive control mode".

<u>Note</u>: In "Thermal drive control mode", the parameter window for integrating the output into an 8-bit scene control is omitted.

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Parameter	Settings			
Control information via	1-bit object <b>8-bit object</b>			
This parameter sets whether the corresponding output will be controlled by a 1-bit object (switching command ON/OFF) or by an 8-bit object (positioning command 0100%). If this parame- ter is set to "1-bit object", then the communication object "X-n: Actuating variable switching" will be added. In addition, the fol- lowing parameters will not appear in the parameter window				
<ul> <li>shown:</li> <li>Valve closed when actuating variable in % is lower than or equal,</li> <li>Valve fully open when actuating variable in % is greater than or</li> </ul>				
<ul> <li>equal,</li> <li>Hysteresis in %,</li> <li>Cycle time for PWM in minutes.</li> <li>If this parameter is set to "8-bit object", then the communication object "X-n: Actuating variable continuous" and all parameters listed in the shown parameter window will be displayed.</li> </ul>				
Valve deenergized	<b>closed</b> ; open			
This parameter sets whether the val the thermal drive is deenergized.	ve is open or closed when			
Valve closed when actuating variable in % is lower than or equal (030)	0			
This parameter is visible only if the p	revious parameter "Control			
This parameter sets up to which percentaged opening the valve remains practically closed. <u>Note</u> : Heater valves frequently have an approximately S-shaped characteristic, i.e. the valve begins to open only from an actuating variable of say 30% and is almost completely open from an actuating variable of say 70%. The precise shape of the valve characteristic is to be found in the manufacturer's data sheet				
Valve fully open when actuating variable in % is greater than or equal (70100)	100			
This parameter is visible only if the previous parameter "Control information via" is set to "8-bit object". This parameter sets from what percentaged opening the valve is practically completely open. <u>Note</u> : Heater valves frequently have an approximately S-shaped characteristic, i.e. the valve begins to open only from an actuat- ing variable of say 30% and is almost completely open from an actuating variable of say 70%. The precise shape of the valve characteristic is to be found in the manufacturer's data sheet				
Hysteresis in % (315)	9			
This parameter is visible only if the previous parameter "Control information via" is set to "8-bit object". This parameter sets the percentage value by which a new actu- ating variable must differ from the last one received and con- verted into a pulse width modulated (PWM) on-time, in order to initiate the calculation of a new PWM on-time. <u>Note</u> : In pulse width modulation (PWM), the current actuating variable value (in the range from 0100%) is converted into a variable on-time for the switching output, in which 0% equals				

Parameter	Settings	
Cycle time for PWM in minutes (530)	15	
This parameter is visible only if the previous parameter "Control information via" is set to "8-bit object". This parameter sets the on-time which corresponds to an actuat- ing variable of 100%. <u>Note</u> : The PWM cycle time corresponds to the sum of the times which the thermal drive needs to open the closed valve com- letely and to close the open valve completely again		
Protection against valve blockage	<b>No</b> Yes	
This parameter sets whether the corresponding switching out- put is to be switched on for 5 minutes if it was switched off for approximately 72 hours. <u>Note</u> : Enabling this function can avoid the blockage of a valve during a period free from heating or cooling, if it has not been used for a longer period.		
Behavior on bus voltage failure	Off On <b>no change</b>	
You use this parameter to set the wanted switching state of the output in the event of a bus voltage failure. If the bus voltage fails, the current switching state will be saved permanently.		
Switching status on bus voltage recovery	as before voltage fail- ure Off On	
You use this parameter to set the wanted switching state of the output in the event of bus voltage recovery. If the parameter is set to "as before voltage failure", then the output is set to the state saved at the time of bus voltage failure.		

# 3.11 A-n: Evaluation thermal drive control mode

A-1, Evaluation thermal drive control mode		
Switching status object	Yes	~

This parameter window is only visible if the "Operation mode" parameter for the corresponding output has been set to "Thermal drive control mode".

In this mode, you can only set with this parameter window whether an additional switching status object for requesting or automatic sending of the current switching status of the corresponding output is to be added.

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# 3.12 Special function "Configure all outputs identically"

	A: Flesettings	
Special function	Configure all outputs identically	~
Operation mode output 1	Normal mode	~

This parameter window is visible only if the parameter "Special function" is set to "Configure all outputs identically".

You can then only set the mode for output 1 of the relevant module, because the behavior of both subsequent outputs will be set automatically to be the same as that of output 1. Furthermore, only for output 1 are the corresponding parameter windows "Behavior" and "Evaluation" then visible and, as the case may be, the "8-bit scene control" parameter windows (except in "Thermal drive control" mode) for all the module's outputs.

#### 3.13 Special function "3-phase switching"



This parameter window is visible only if the parameter "Special function" is set to "3-phase switching".

You can then only set the mode for output 1 of the relevant module, because the behavior of both subsequent outputs will be set automatically to be the same as that of output 1. Therefore, the "Behavior" and "8-bit scene control" parameter windows will also be displayed only for output 1.

However, separate "Evaluation" windows will be displayed for all 3 outputs, in order that an operator can set separate monitoring of load currents, so that, e.g. the failure of a phase (i.e. an L-conductor) is reported.

In order that it can be seen in the "Behavior" and "Evaluation" parameter windows that they belong to a "3-phase switching" function, a corresponding note is visible in these parameter windows above the first parameter.

<u>Note</u>: In 3-phase switching, you can only set "Normal mode" and "Timer mode". Also, the parameter "Behavior on bus voltage failure" is absent in the "Behavior" parameter window.

#### 3.14 Special function "Fan speed control 1...3-stage"

#### Fan speed control 1-stage

A: Presettings		
Special function	Fan speed control 1-stage	~
Operation mode output 2	Normal mode	~
Operation mode output 3	Normal mode	*

If you select the special function "Fan speed control 1stage", then the modes of outputs 2 and 3 are still freely configurable, because 1-stage fan speed control only occupies output 1.

<u>Note</u>: Only <u>one</u> fan speed control can be enabled for each module, either 1-stage or 2-stage or 3-stage.

A: Fan speed control		
Common control value object	No	~
Threshold stage 0 to 1 in % (290)	15	<b>\$</b>
Hysteresis for switching to a lower fan speed stage in % (310)	5	\$
Value range fan speeds in manual mode	0-1	~
Fan speed stage at bus voltage failure	no change	~
Fan speed stage on bus voltage recovery	as before voltage failure	~
Status object automatic mode	No	~
Status object fan speed stage	No	~

If you choose "Fan speed control 1-stage" as special function, then the parameter window "X: Fan control" includes the parameters shown in the above picture.

Parameter	Settings	
Common control value object	<b>No</b> Yes	
This parameter sets whether the the ing commands for heating and cooli via separate objects. If this paramete communication objects "X: Fan actua "X: Fan actuating variable cooling" a communication object "X: Fan actuati	ermostat sends its position- ng via a common object or er is set to "No", then both ating variable heating" and re displayed instead of the ng variable controller".	
Threshold stage 0 to 1 in % (290)	15	
This parameter defines the actuating variable threshold on whose attainment or exceeding fan speed stage 1 is switched ON.		

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Parameter	Settings	
Hysteresis for switching to a lower fan speed stage in % (310)	5	
You use this parameter to set by how many percent at least the actuating variable must be below the threshold of the current fan speed stage for switching to the next lower fan speed stage.		
Value range fan speeds in manual mode	<b>0-1</b> (0-2; 0-3) 0255	
You use this parameter to set the permitted range of values for the object "Fan speed stage in manual operation mode". Whereas in the value ranges 0-1, 0-2 and 0-3, the received value equals the fan speed stage to be switched on, with values in the range 0255, the received value is compared with the config- ured actuating variable thresholds (threshold stage 0 to 1 or 1 to 2 and 2 to 3) and thus calculated which stage is to be switched		
Fan speed stage at bus voltage	Off	
	no change	
This parameter is used to set if the fa current fan speed stage shallbe mair ure.	n shall be turned off or the Itained on bus voltage fail-	
Fan speed stage on bus voltage recovery	As before voltage failure 0 1	
This parameter is used to set which switched on at bus voltage recovery.	fan speed stage is to be	
Status object automatic mode	<b>No</b> Yes	
This parameter is used to set whether a 1-bit status object "X: Status fan automatic mode" is to be added, via which automatic mode status can be queried or sent automatically on status changes.		
Status object fan speed stage	<b>No</b> Yes	
This parameter is used to set whether an 8-bit status object "X: Status object fan speed stage" is to be added, via which the current fan speed stage can be queried or sent automatically on status changes. The value range is 03, i.e. the transferred value equals the current fan speed stage.		

#### Fan speed control 2-stage

	A: Presettings	
Special function	Fan speed control 2-stage	~
Operation mode output 3	Normal mode	~

If you select the special function "Fan speed control 2stage", then the mode of output 3 is still freely configurable, because 2-stage fan speed control only occupies outputs 1 and 2.

<u>Note</u>: Only <u>one</u> fan speed control can be enabled for each module, either 1-stage or 2-stage or 3-stage.

A: Fan speed control		
Common control value object	No	*
Threshold stage 0 to 1 in % (250)	15	*
Threshold stage 1 to 2 in % (1090)	40	*
Hysteresis for switching to a lower fan speed stage in % (310)	5	*
Value range fan speeds in manual mode	0-2	*
Fan speed stage at bus voltage failure	no change	*
Fan speed stage on bus voltage recovery	as before voltage failure	*
Status object automatic mode	Yes	*
Status object fan speed stage	Yes	*

If you choose "Fan speed control 2-stage" as special function, then the parameter window "X: Fan control" includes the parameters shown in the above picture. These are the same as the parameters for "Fan speed control 1stage " up to the additional parameter "Threshold stage 1 to 2 in %".

Parameter	Settings
Threshold stage 0 to 1 in % (250)	15
This parameter defines the actuat whose attainment or exceeding fan ON.	ing variable threshold on speed stage 1 is switched
Threshold stage 1 to 2 in % (1090)	40
This parameter defines the actuat whose attainment or exceeding fan ON.	ing variable threshold on speed stage 2 is switched

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#### Fan speed control 3-stage

A: Presettings		
Special function	Fan speed control 3-stage	~

If you choose the special function "Fan speed control 3stage", then 3 outputs are occupied by this function.

A: Fan speed control		
Common control value object	No	*
Threshold stage 0 to 1 in % (250)	15	\$
Threshold stage 1 to 2 in % (1060)	40	*
Threshold stage 2 to 3 in % (3090)	70	*
Hysteresis for switching to a lower fan speed stage in $\%(310)$	5	*
Value range fan speeds in manual mode	0-3	~
Fan speed stage at bus voltage failure	no change	~
Fan speed stage on bus voltage recovery	as before voltage failure	~
Status object automatic mode	Yes	~
Status object fan speed stage	Yes	~

If you chose "Fan speed control 3-stage" as special function, then the parameter window "X: Fan control" includes the parameters shown in the above picture. These are the same as the parameters for "Fan speed control 2stage" up to the additional parameter "Threshold stage 2 to 3 in %".

Parameter	Settings					
Threshold stage 0 to 1 in % (250)	15					
This parameter defines the actuat whose attainment or exceeding fan ON.	ing variable threshold on speed stage 1 is switched					
Threshold stage 1 to 2 in % (1060)	40					
This parameter defines the actuating variable threshold or whose attainment or exceeding fan speed stage 2 is switched ON.						
Threshold stage 2 to 3 in % (3090)	70					
This parameter defines the actuat whose attainment or exceeding fan ON.	ing variable threshold on speed stage 3 is switched					
Note: Because 3-stage switched fans often have starting prob- lems in the 1 <sup>st</sup> speed stage, a 3-stage switched fan which is OFF and is to be switched to speed stage 1, is first switched for 1 second to speed stage 2 and then switched back from speed stage 2 to speed stage 1						

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#### 4. Timing diagrams: Examples for one output

1. Switching without a time delay, no logic operation, relay mode: normally open contact

Switching telegrams	_	On ∳	Off ∳	On ∳	On ∳	Off ∳	On ∳	Off ∳	Off ∳
Relay contact	On Off								

2. Switching with an On delay, no logic operation, relay mode: normally open contact

Switching telegrams		On	Off ∳	On ∳	On ∳	Off ∳	On ∳	Off ▼
Output time function	1 0			L		•	L	•
Relay contact	On Off							

3. Switching with an Off delay, no logic operation, relay mode: normally open contact

Switching telegrams		Off ∳	On ∳	Off ∳	Off ∳	On ∳	Off ∳	On ∳
Output time function	1 0	L		۱		-	L	•
Relay contact	On Off							

4. Switching with an On and Off delay, no logic operation, relay mode: normally open contact

Switching On Off On Off On On Off On

5. Switching with time switch function, no logic operation, no On delay, relay mode: normally open contact



6. Switching with AND function, no time delays, relay mode: normally open contact

Switching telegrams	_	On ∳	Off ∳	On ∳	Off ▼	On ∳	Off ∳	On ▲	Off ∳	
Logic operatio telegrams	n Off ∳		Or ∳	ו	Off ∳	On ∳	Off ∳	C	Dn	Off ∳
AND gate input 1	1 0									
AND gate input 2	1 0									
Relay contact	On Off									

7. Switching with OR function, with an On delay, relay mode: normally open contact

Switching telegrams	On ▲	Off ∳	On ∳	On ∳	Off ∳	On ∳		Off ∳
Logic operation telegrams	On ∳	Off ∳		On ∳	Off ∳		Off ∳	
OR gate	1		<u> </u>			L	-	
OR gate nput 2	1							
Relay C contact C	On							

# 8. Switching with AND function, with On and Off delay, relay mode: normally open contact



# 9. Switching with OR function and time switch function, relay mode: normally open contact



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