

37941A



DTSC-200A ATS Controller - Operation



Operation

Release 1.0 - 0

**WARNING**

Read this entire manual and all other publications pertaining to the work to be performed before installing, operating, or servicing this equipment. Practice all plant and safety instructions and precautions. Failure to follow instructions can cause personal injury and/or property damage.

The engine, turbine, or other type of prime mover should be equipped with an overspeed (overtemperature, or overpressure, where applicable) shutdown device(s), that operates totally independently of the prime mover control device(s) to protect against runaway or damage to the engine, turbine, or other type of prime mover with possible personal injury or loss of life should the mechanical-hydraulic governor(s) or electric control(s), the actuator(s), fuel control(s), the driving mechanism(s), the linkage(s), or the controlled device(s) fail.

Any unauthorized modifications to or use of this equipment outside its specified mechanical, electrical, or other operating limits may cause personal injury and/or property damage, including damage to the equipment. Any such unauthorized modifications: (i) constitute "misuse" and/or "negligence" within the meaning of the product warranty thereby excluding warranty coverage for any resulting damage, and (ii) invalidate product certifications or listings.

**CAUTION**

To prevent damage to a control system that uses an alternator or battery-charging device, make sure the charging device is turned off before disconnecting the battery from the system.

Electronic controls contain static-sensitive parts. Observe the following precautions to prevent damage to these parts.

- Discharge body static before handling the control (with power to the control turned off, contact a grounded surface and maintain contact while handling the control).
- Avoid all plastic, vinyl, and Styrofoam (except antistatic versions) around printed circuit boards.
- Do not touch the components or conductors on a printed circuit board with your hands or with conductive devices.

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Important definitions**WARNING**

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

**CAUTION**

Indicates a potentially hazardous situation that, if not avoided, could result in damage to equipment.

**NOTE**

Provides other helpful information that does not fall under the warning or caution categories.

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Revision History

Rev.	Date	Editor	Changes
A	2022-31-03	Ma	1.0-0 - Based on DTSC-200 V2.0017

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Chapter 1. General Information

Related Documents



Type	English	German
DTSC-200A		
DTSC-200A - Installation	37939	-
DTSC-200A - Configuration	37940	-
DTSC-200A - Operation	this manual ⇨	-
DTSC-200A - Application	37942	-
DTSC-200A - Interfaces	37943	-

Table 1-1: Manual - Overview

Intended Use The unit must only be operated for the uses described in this manual. The prerequisite for a proper and safe operation of the product is correct transportation, storage, and installation as well as careful operation and maintenance.



NOTE

This manual has been developed for a unit fitted with all available options. Inputs/outputs, functions, configuration screens and other details described, which do not exist on your unit, may be ignored. The present manual has been prepared to enable the installation and commissioning of the unit. On account of the large variety of parameter settings, it is not possible to cover every possible combination. The manual is therefore only a guide. In case of incorrect entries or a total loss of functions, the default settings can be taken from the enclosed list of parameters at the rear of this manual.

QR Code



To get access to the complete product documentation, scan this QR code or use the following link:

→ <http://wwdmanuals.com/dtsc-200a>

Chapter 2. Navigation / Operation

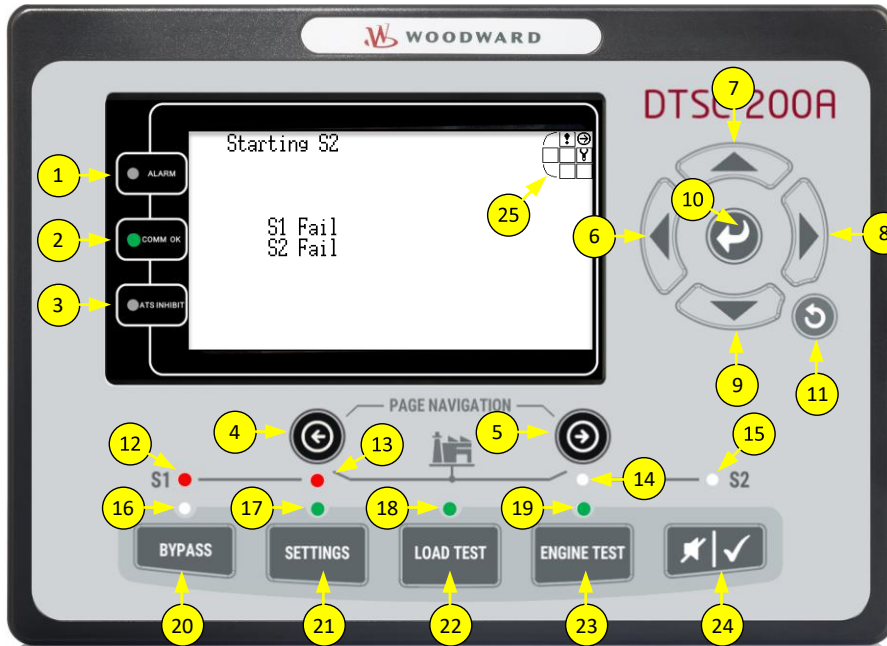


Figure 2-1: Front panel and display

Figure 2-1 illustrates the front panel/display, which includes push buttons, LEDs and the Liquid Crystal display (LC display). A short description of the front panel is given below.

LED Alarm

1

Flashes if a new Alarm is triggered. Not acknowledged yet.
Shows that the device has minimal one unacknowledged alarm.

LED COMM OK

2

The LED flashes if any CAN message as RPDO is receipt.

LED ATS Inhibit

3

The LED indicates that the ATS transfer is inhibited.

LED S1 ok

12

The LED indicates that the source S1 is okay according to the configured operating ranges.

LED S1 breaker closed

13

The LED indicates that the load is connected to the S1 source.

LED S2 breaker closed

14

The LED indicates that the load is connected to the S2 source.

LED S2 ok

15

The LED indicates that the source S2 is okay according to the configured operating ranges.

LED Bypass possible

16

The LED indicates that the current sequence timer is possible to be bypassed. The current sequence timer is indicated on the Home Page View.

LED Settings mode entered

17

The LED indicates that the settings mode is entered. To leave the settings mode you must push the Go-Back ¹¹ Button.

LED LOAD TEST

18

The LED indicates that the LOAD TEST is currently manually initiated.

LED ENGINE TEST

19

The LED indicates that the ENGINE TEST is currently manually initiated.

Push Button BYPASS

20

If the LED Bypass possible ¹⁶ is flashing the operator can push this button to bypass a current timer for example a stable timer.

Push Button SETTINGS

21

This button brings the operator directly into the settings mode. The settings mode is indicated with the flashing LED Settings mode entered ¹⁷. From there on the buttons on the right to the display are used to navigate through the settings menus.

Push Button LOAD TEST

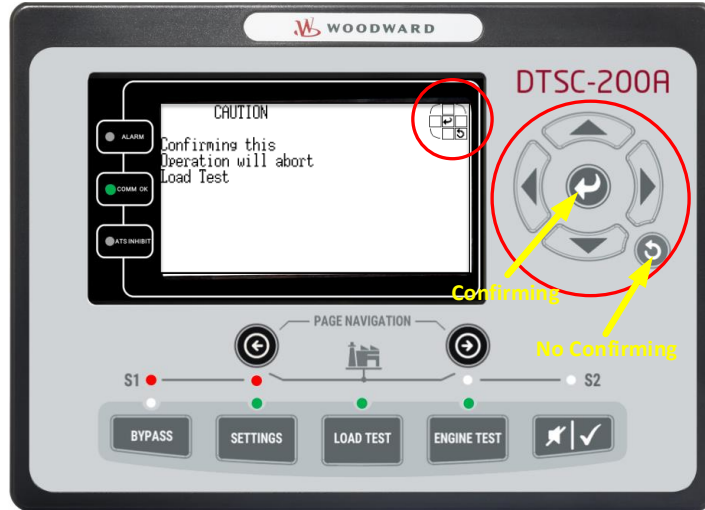
22

With this button the operator can manually initiate the LOAD TEST sequence. Once pushed he must confirm over display whether he want to start the LOAD TEST with all its consequences.



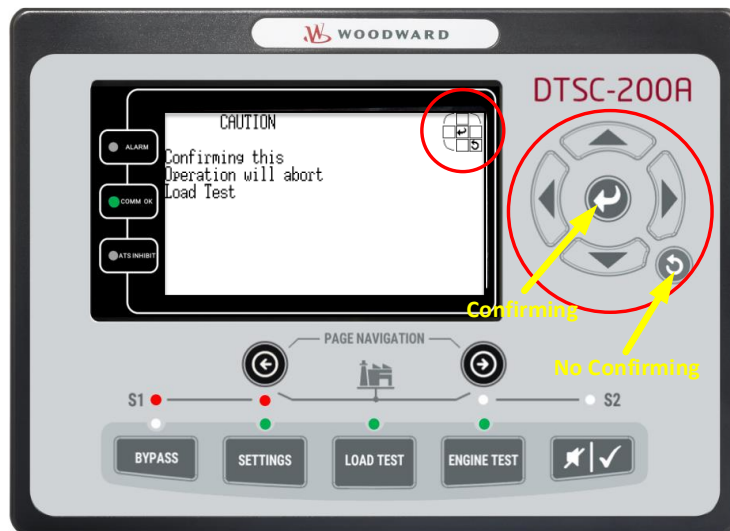
NOTE

Initiating a LOAD TEST can cause a dead bus during switching the ATS control.



With confirming over the return button, the manually LOAD TEST is initiated and the LED LOAD TEST ¹⁸ will flashing.

If the LED LOAD TEST ¹⁸ is flashing the operator can abort the LOAD TEST by pushing the LOAD TEST button again. With doing that he must confirm again to interrupt the LOAD TEST.

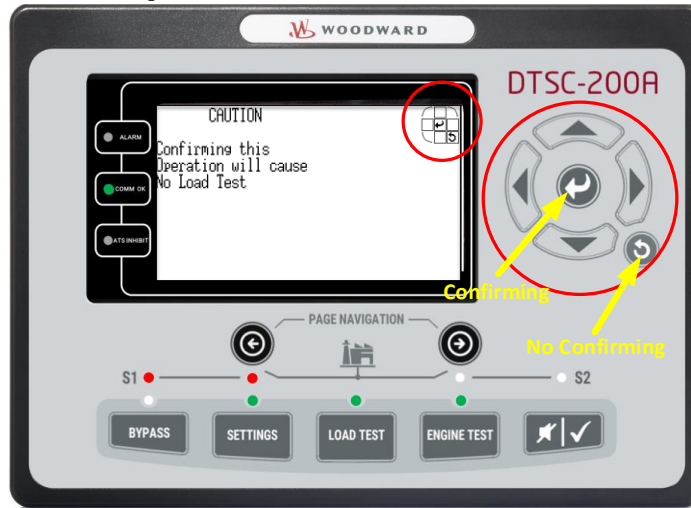


If he confirms the abort of the load test the LED LOAD TEST ¹⁸ will be off and the DTSC-200A goes into the normal operation.

23

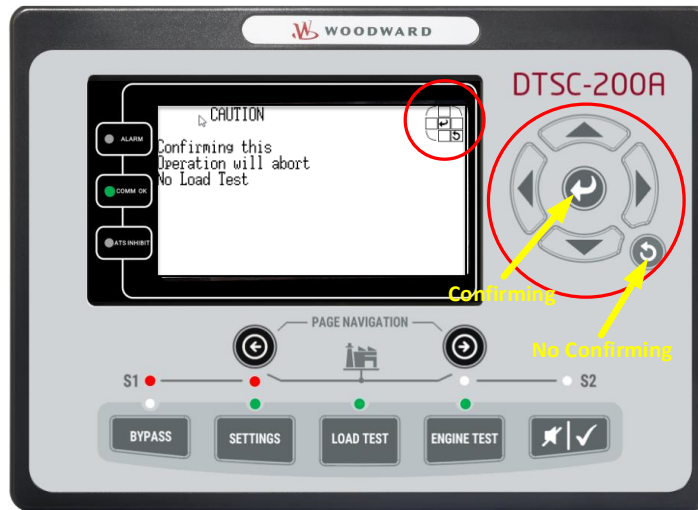
Push Button ENGINE TEST

With this button the operator can manually initiate the ENGINE TEST sequence. Once pushed he must confirm over display whether he want to start the ENGINE TEST [No Load Test] with all its consequences.



With confirming over the return button, the manually ENGINE TEST is initiated and the LED ENGINE TEST ¹⁹ will flashing.

If the LED ENGINE TEST ¹⁹ is flashing the operator can abort the ENGINE TEST by pushing the ENGINE TEST button again. With doing that he must confirm again to interrupt the ENGINE TEST [No Load Test].



If he confirms the abort of the engine test the LED ENGINE TEST ¹⁹ will be off and the DTSC-200A goes into the normal operation.

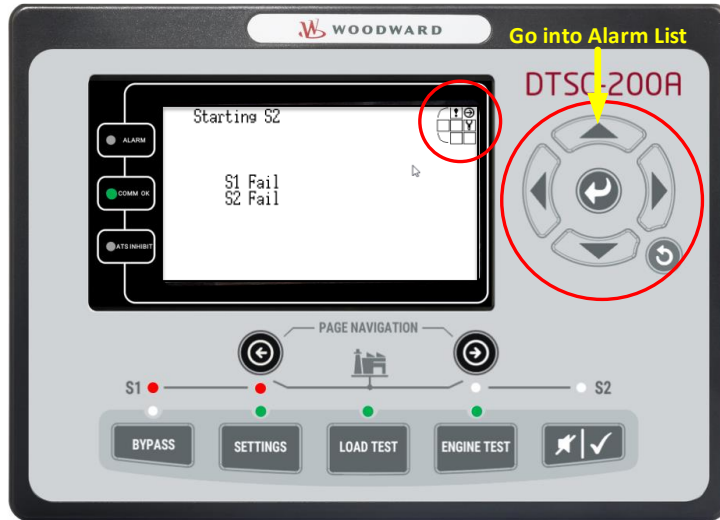
24

Push button Acknowledge

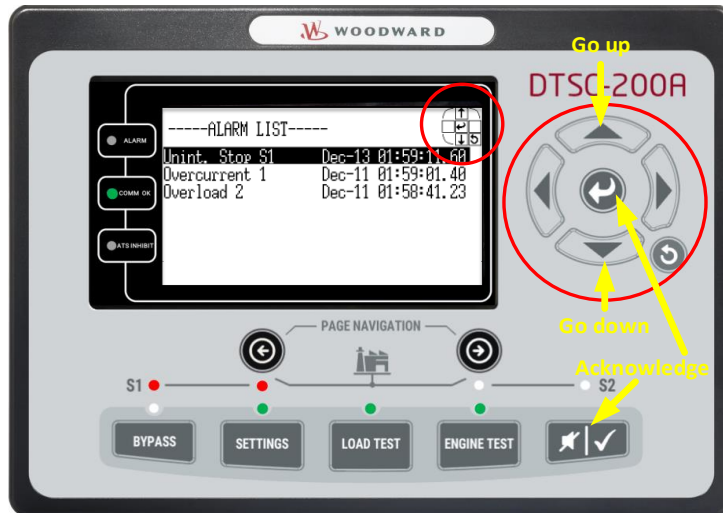
The acknowledge button has two functions:

1. If the Horn or a new alarm occurs the flashing LED Alarm 1 is disabled until a next alarm takes place.
2. The single alarms can be acknowledged as long they are not active anymore.

Navigate to the Alarm list:



Acknowledge an Alarm:


















25

Navigation Button Overview

The display contains on the top right corner a field which tells the operator which navigation buttons right to the display are currently active.

Explanation:

-  Request mark – Go into alarm list
-  Tool – Go into configuration menu
-  Return – Acknowledge
-  Leave current screen – ("Escape" / "ESC")
-  Cursor down – Go in the list one line down
-  Cursor left – Go with the cursor one step left
-  Cursor right – Go with the cursor one step right
-  Cursor up – Go in the list one line up
-  Display Brightness – The plus/minus buttons determine display brightness
-  Minus – One step less
-  Plus – One step more
-  Next Visualization Screen – Go to the next visualization screen.
-  One Visualization Screen back – Go one visualization screen back.
-  Select parameter – Go to the next parameter element in the screen
-  Select next parameter group – Especially for navigating in LogicsManager screens it realizes group jumps of LogicsManager Command Variables.

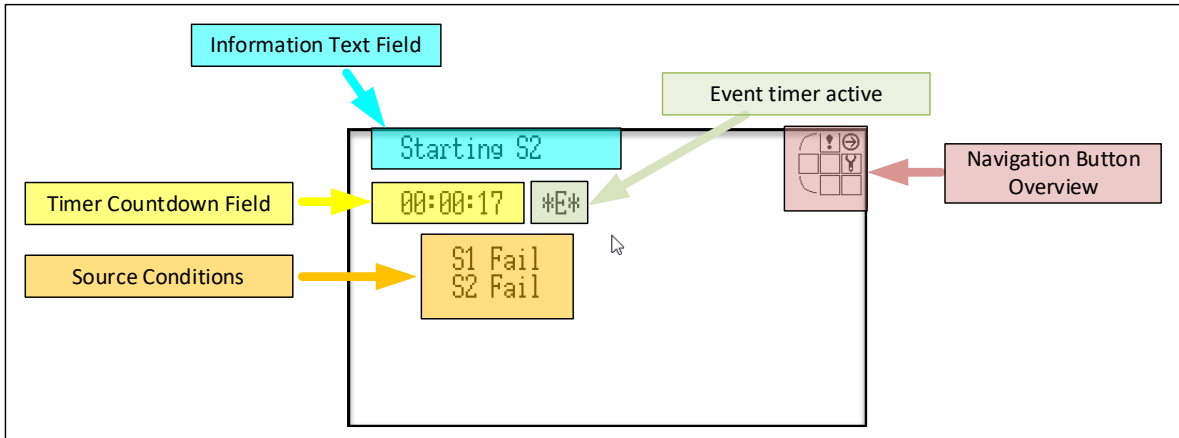
Navigation



Individual display screens are listed in the following text. All instruments, which are available in the individual screens, are described with their function.

Screen "Automatic operation" / "Start screen"

[all application modes]



Information Text Field

Information Text Field

The field indicates the current action.

Timer Countdown Field

Timer Countdown Field

On this place appears the countdown timer of the different states. Some timers are allowed to be bypassed through the BYPASS button if the BYPASS button over the LED is flashing.

Source Conditions

Source Conditions Field

The condition of the source S1 and source S2 can be observed here.

Event timer active



Event Timer Active



It appears an *E* on this place if any exercise timer is activated.


Navigation Button Overview


Navigation Button Overview

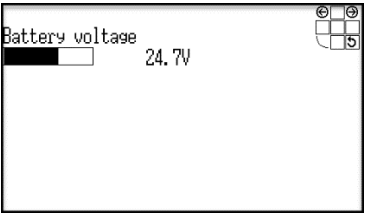
There is on the top right in nearly all screens the navigation button overview ²⁵ indicated. For better navigation it tells the operator which function is laying on which button (⁶, ⁷, ⁸, ⁹, ¹⁰, ¹¹) at the moment. For more details refer to Navigation Button Overview explanation above.

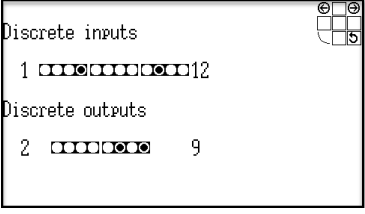
Screen "Source 1 values - Details"	[all application modes]																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: left; padding: 2px;">SOURCE 1</th> </tr> </thead> <tbody> <tr><td style="padding: 2px;">1 231V</td><td style="padding: 2px;">130A</td></tr> <tr><td style="padding: 2px;">2 230V</td><td style="padding: 2px;">131A</td></tr> <tr><td style="padding: 2px;">3 229V</td><td style="padding: 2px;">132A</td></tr> <tr><td style="padding: 2px;">12 401V</td><td style="padding: 2px;">091kW</td></tr> <tr><td style="padding: 2px;">23 399V</td><td style="padding: 2px;">006kvar</td></tr> <tr><td style="padding: 2px;">31 400V</td><td style="padding: 2px;">Lg0.98</td></tr> <tr><td style="padding: 2px;"></td><td style="padding: 2px;">50.00Hz</td></tr> </tbody> </table>	SOURCE 1		1 231V	130A	2 230V	131A	3 229V	132A	12 401V	091kW	23 399V	006kvar	31 400V	Lg0.98		50.00Hz	<p>1 / 2 / 3 Source 1 voltages/currents $V/A_{L1N} / V/A_{L2N} / V/A_{L3N}$</p> <p>12 / 23 / 31 Source 1 voltages $V_{L12} / V_{L23} / V_{L31}$</p> <p>00.0V Source 1 voltage</p> <p>00.00Hz Source 1 frequency</p> <p>00.0A Source 1 current</p> <p>000kW Source 1 real power</p> <p>000kvar Source 1 reactive power</p> <p>1.00 Source 1 power factor = 1</p> <p>Lg0.00 Source 1 power factor (lagging)</p> <p>Ld0.00 Source 1 power factor (leading)</p> <p> Phase rotation clockwise ↻</p> <p> Phase rotation counterclockwise ↻</p>
SOURCE 1																	
1 231V	130A																
2 230V	131A																
3 229V	132A																
12 401V	091kW																
23 399V	006kvar																
31 400V	Lg0.98																
	50.00Hz																

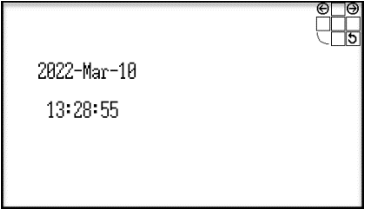
Screen "Source 2 values - Details"	[all application modes]																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: left; padding: 2px;">SOURCE 2</th> </tr> </thead> <tbody> <tr><td style="padding: 2px;">1 231V</td><td style="padding: 2px;">127A</td></tr> <tr><td style="padding: 2px;">2 230V</td><td style="padding: 2px;">128A</td></tr> <tr><td style="padding: 2px;">3 229V</td><td style="padding: 2px;">129A</td></tr> <tr><td style="padding: 2px;">12 402V</td><td style="padding: 2px;">089kW</td></tr> <tr><td style="padding: 2px;">23 400V</td><td style="padding: 2px;">-005kvar</td></tr> <tr><td style="padding: 2px;">31 400V</td><td style="padding: 2px;">Ld0.97</td></tr> <tr><td style="padding: 2px;"></td><td style="padding: 2px;">50.05Hz</td></tr> </tbody> </table>	SOURCE 2		1 231V	127A	2 230V	128A	3 229V	129A	12 402V	089kW	23 400V	-005kvar	31 400V	Ld0.97		50.05Hz	<p>1 / 2 / 3 Source 2 voltages/currents $V/A_{L1N} / V/A_{L2N} / V/A_{L3N}$</p> <p>12 / 23 / 31 Source 2 voltages $V_{L12} / V_{L23} / V_{L31}$</p> <p>00.0V Source 2 voltage</p> <p>00.00Hz Source 2 frequency</p> <p>00.0A Source 2 current</p> <p>000kW Source 2 real power</p> <p>000kvar Source 2 reactive power</p> <p>1.00 Source 2 power factor = 1</p> <p>Lg0.00 Source 2 power factor (lagging)</p> <p>Ld0.00 Source 2 power factor (leading)</p> <p> Phase rotation clockwise ↻</p> <p> Phase rotation counterclockwise ↻</p>
SOURCE 2																	
1 231V	127A																
2 230V	128A																
3 229V	129A																
12 402V	089kW																
23 400V	-005kvar																
31 400V	Ld0.97																
	50.05Hz																

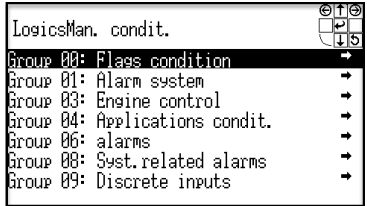
Screen "S1 Load Current"	[all application modes]								
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: left; padding: 2px;">S1 Load Current</th> </tr> </thead> <tbody> <tr><td style="padding: 2px;">1 130A</td><td style="padding: 2px;">↔ 150A</td></tr> <tr><td style="padding: 2px;">2 131A</td><td style="padding: 2px;">↔ 151A</td></tr> <tr><td style="padding: 2px;">3 132A</td><td style="padding: 2px;">↔ 152A</td></tr> </tbody> </table>	S1 Load Current		1 130A	↔ 150A	2 131A	↔ 151A	3 132A	↔ 152A	<p>This screen shows the current phase currents if the load is connected to source 1. Additionally, it provides a maximum slave pointer.</p> <p>With pushing the slave pointer reset button  the slave pointers will be reset.</p> <p>1 / 2 / 3 Load current $I_{L1} / I_{L2} / I_{L3}$</p>
S1 Load Current									
1 130A	↔ 150A								
2 131A	↔ 151A								
3 132A	↔ 152A								

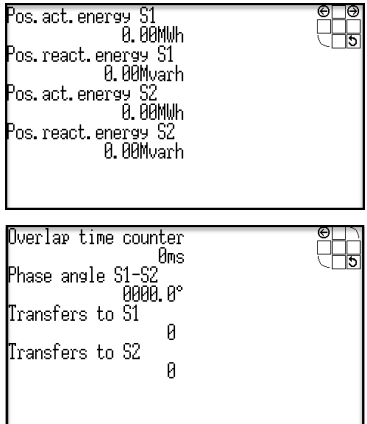
Screen "S2 Load Current"	[all application modes]								
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: left; padding: 2px;">S2 Load Current</th> </tr> </thead> <tbody> <tr><td style="padding: 2px;">1 127A</td><td style="padding: 2px;">↔ 147A</td></tr> <tr><td style="padding: 2px;">2 128A</td><td style="padding: 2px;">↔ 148A</td></tr> <tr><td style="padding: 2px;">3 129A</td><td style="padding: 2px;">↔ 149A</td></tr> </tbody> </table>	S2 Load Current		1 127A	↔ 147A	2 128A	↔ 148A	3 129A	↔ 149A	<p>This screen shows the current phase currents if the load is connected to source 2. Additionally, it provides a maximum slave pointer.</p> <p>With pushing the slave pointer reset button  the slave pointers will be reset.</p> <p>1 / 2 / 3 Load current $I_{L1} / I_{L2} / I_{L3}$</p>
S2 Load Current									
1 127A	↔ 147A								
2 128A	↔ 148A								
3 129A	↔ 149A								

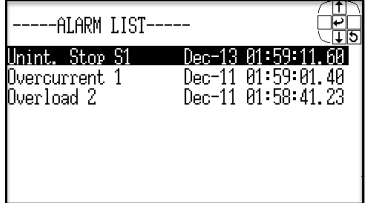


Screen "Battery voltage value - Details"	[all application modes]
	<p>This screen shows the DC supply voltage of the device. Usually it is the battery voltage of the power panel. The measured battery voltage value is displayed graphically and numerically.</p>

Screen "Discrete inputs / discrete (relay) outputs – Status display"	[all application modes]
	<p>This screen shows the discrete input and discrete output status on the device connected.</p> <p>Status display of the discrete inputs and discrete outputs. (Note: The configured logic for the discrete input "N.O./N.C." will determine how the DTSC-200A reacts to the state <input checked="" type="checkbox"/> of the discrete input. If the respective DI is configured to N.O, the unit reacts on the energized state (<input checked="" type="checkbox"/>); if it is configured to N.C., it reacts on the de-energized state (<input type="checkbox"/>).)</p> <p>Discrete input: <input checked="" type="checkbox"/> energized <input type="checkbox"/> de-energized</p> <p>Discrete output: <input checked="" type="checkbox"/> relay activated <input type="checkbox"/> relay de-activated</p>

Screen "Time / Date"	[all application modes]
	<p>This screen shows time and date of the internal clock.</p> <p>0000-XXX-00 – Date 0000 = Year XXX = Month 00 = Day</p> <p>00:00:00 – Time 00 = Hour 00 = Minute 00 = Second</p>

Screen "LogicsManager Conditions"	[all application modes]
	<p>This screen shows in list form the LogicsManager groups. From there the operator can navigate to the according group of interest. Navigate to the <i>LogicsManager</i> conditions screens</p> <ul style="list-style-type: none"> Group00: Flags condition Group01: Alarm system Group03: Engine control Group04: Application Group06: Alarms Group08: Syst.related alarms Group09: Discrete inputs Group11: Clock and timer Group12: External Dis Group13: Discrete outputs Group14: External DOs Group19: ATS Status flags Group20: ATS status flags 2 Group21: ATS alarms Group98: LM outputs

Screen "Counters"	[all application modes]
	<p>The first screen show energy counters allocated to source S1 and S2. The second screen shows the last overlap time duration, the current phase angle between source 1 and source 2 and the amount of load transfers since the last reset.</p> <ul style="list-style-type: none"> Energy 0.00 kWh - Generator real energy 0.00MWh = Total generator real energy Pos. reactive energy 0.00 Mvar - Generator reactive energy 0.00Mvarh = Total generator reactive energy Overlap time counter 00 ms - Overlap time 00ms = Overlap time of the last transfer Phase angle S1-S2 000.0° - Phase angle 0000.0° = Ph. angle between source 1 and source 2 Transfers to S1 - Counter transfer to source 1 00000 = Number of S1 transfers Transfers to S2 - Counter transfer to source 2 00000 = Number of S2 transfers

Screen "Alarm list"	[all application modes]
	<p>With pushing the  button the operator come into the active alarm screen All alarm messages, which have not been acknowledged and cleared, are displayed. Each alarm is displayed in one line as alarm text, the date and time stamp. The symbol  indicates that this alarm condition is still present.</p>

Operation



The display is partitioned into different areas to give an overview of the displayed data.

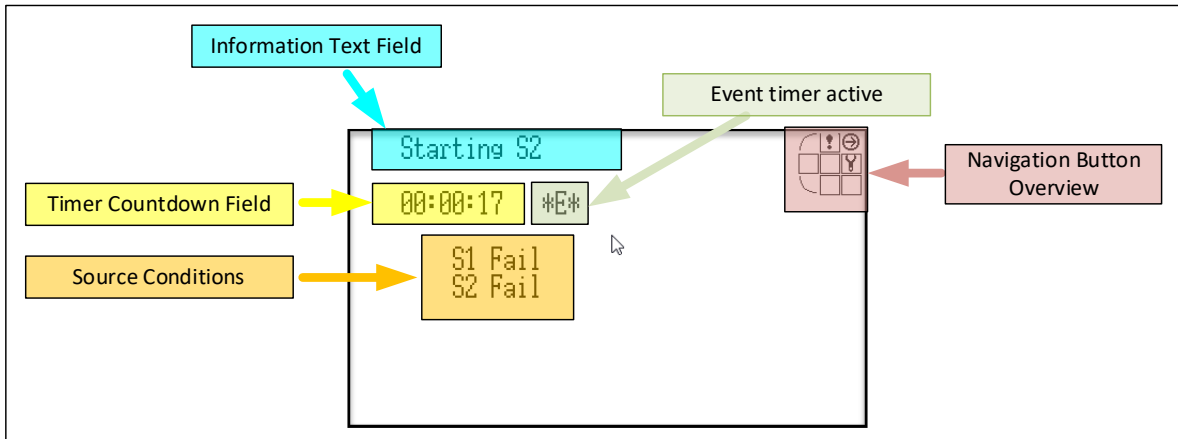
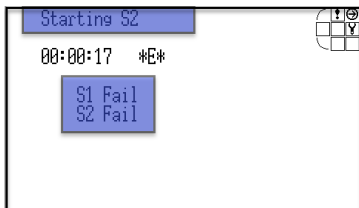


Figure 2-2: Home Page explanation

Operation Display

"Operation" display



The current operation state of the unit and the condition of the sources are displayed during normal operation.

Operation state

The current operation state of the unit is indicated in the "Messages" section of the screen. Refer to Appendix A: Messages on page 33 for a list of the possible operation states.

Source condition

The current source condition is indicated in the "Operation" section of the screen. The following source conditions are possible:

S1/2 Ok

Source 1/2 is considered as "OK", i.e., the voltage and frequency of Source 1/2 are within the restore limits (refer to the Configuration Manual 37939 for more information).

S1/2 Fail

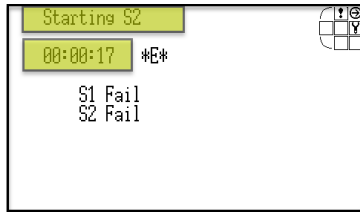
Source 1/2 is considered as "not OK", i.e., the voltage or frequency of Source 1/2 are not within the restore limits (refer to the Configuration Manual 37939 for more information).

S1/2 Restore

Source 1/2 is considered as "OK", but the stable timer for the respective source has not yet expired (refer to the Configuration Manual 37939 for more information).

Timer Display

"Timer" display



If a timer is active, it is indicated in the "Messages" section of the screen and a numerical indication in the "Timer" section counts down the remaining time before the timer expires.

Bypass timer



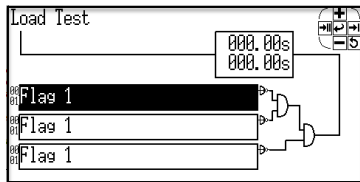
If a timer is currently active, it may be bypassed with the "Bypass" button. **Note:** The Bypass feature is only possible if the LED over the Bypass button is flashing.

This means with pushing the indicated timer expires immediately and the unit proceeds with the next operation. Refer to Appendix A: Messages on page 33 for a list of the possible timers.

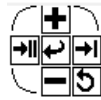
LogicsManager

Some parameters of the DTSC-200A are configured via the *LogicsManager* (refer to Configuration Manual 37940). A typical *LogicsManager* screen is shown in the following. You may configure a logical operation using various command variables, signs, and logical operators to achieve the desired logical output.

LogicsManager Screen



For configuration of the *LogicsManager* use the softkeys displayed in the navigation button overview.



Leave current screen ("Escape" / "ESC")

By pressing this softkey character you exit and go to the previous screen. If the Escape softkey is used to leave a *LogicsManager* configuration screen, any unconfirmed changes made will not be stored.



Change option

By pressing these softkey characters plus and minus you may change the option of the selected *LogicsManager* parameter upwards or downwards.



Confirm selection

By pressing this softkey character you confirm the configured option of the selected *LogicsManager* parameter.



Select parameter

By pressing this softkey character you may select the *LogicsManager* parameter to be configured. Each time this softkey character is pressed, the parameter will be advanced.



Select group of parameters

By pressing this softkey character you may select the next group of *LogicsManager* parameter if you are on an LMCV parameter. Each time this softkey character is pressed, the next parameter group will be taken. With the last group it begins with the smallest group again.

Chapter 3. Functional Description

General ATS Functionality

The following flowchart shows the typical ATS functionality:

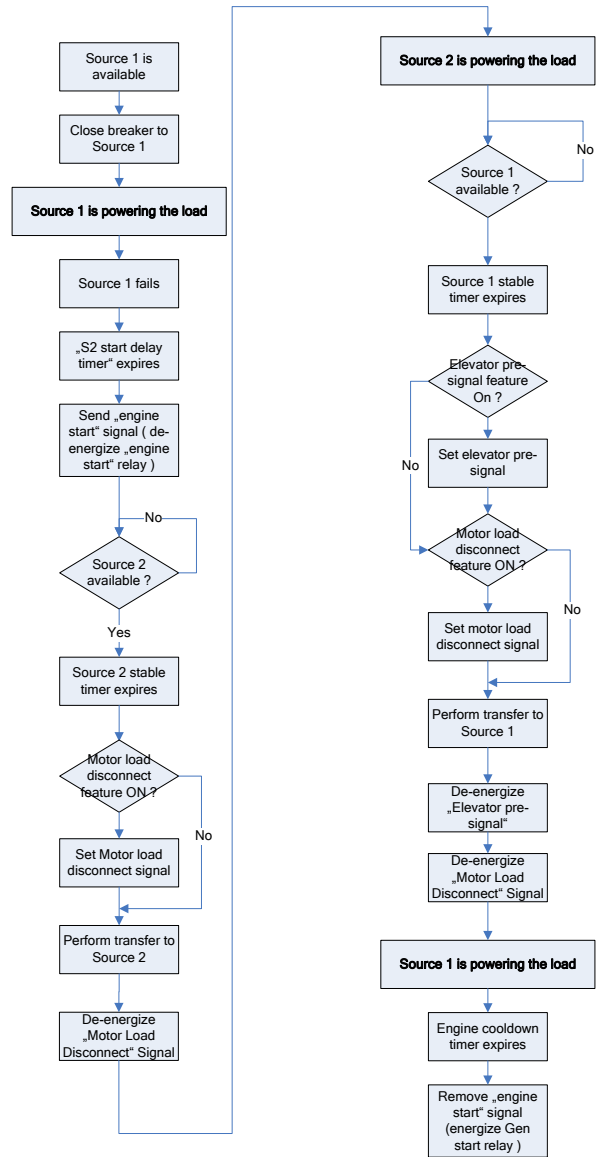


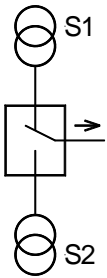
Figure 3-1: General ATS functionality - flowchart

Application Modes



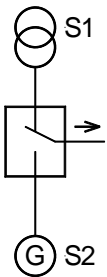
The application mode may be configured in the unit (refer to the Configuration Manual 37940 for more information). This is only possible in code level 2. The most important features and differences of the three application modes are illustrated in the following section. A description of the functions that are possible during each application mode can be found in the configuration manual (manual 37940).

Util-Util Application Mode



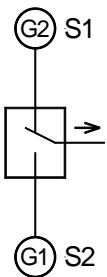
- This application mode has the following characteristics:
- The ATS controller monitors two mains sources and transfers the load to the secondary source in case the primary source fails
 - The ATS controller operates as Master controller

Util-Gen Application Mode



- This application mode has the following characteristics:
- The ATS controller monitors a mains source and a generator source and transfers the load to the generator source in case the mains source fails
 - The ATS controller operates as Master controller

Gen-Gen Application Mode



- This application mode has the following characteristics:
- The ATS controller monitors two generator sources and transfers the load to the other source in case the regular source fails
 - The ATS controller operates as Slave controller
 - This application is not a stand-alone application and always combined with another ATS controller in Util-Gen application mode, which operates as Master controller (refer to the Application Manual 37942 for more information)

Engine operation special cases

In Util-Gen application mode and Gen-Gen application mode the ATS starts and stops an engine. Starting and stopping is controlled by the state machine described above. However, in some rare situations the start/stop is affected by the breaker state. These are

- If a breaker cannot be closed to a generator source (indicated by a corresponding alarm), then the engine shall not run, it shall either not start or do a stop after cooldown
- If a breaker is connected to a generator source and cannot be opened (indicated by a corresponding alarm), the engine shall continue to run.
- If a breaker closing to a generator source is inhibited, and the breaker is not already closed, the engine shall not run or do a stop after cooldown.

Blocking Transfer Operations



There are four cases that are able blocking ATS' transfer operations:

1. LogicsManager function 'Inhibit ATS' LM 98.01 (see below)
2. LogicsManager function 'Inhibit XFR to S1' LM 98.02
3. LogicsManager function 'Inhibit XFR to S2' LM 98.03
4. Mechanical Failure LM 21.11; monitored as Limit Switch Failure (see chapter Limit Switch Monitoring (Mechanical Failure, LM 21.11) on page 23).

LogicsManager function "Inhibit ATS"

If the *LogicsManager* function "Inhibit ATS" (parameter 12600) is TRUE, all transfers are blocked! This means that the *LogicsManager* flags

- 20.07 "Close to S1"
- 20.09 "Close to S2"
- 20.08 "Open from S1"
- 20.10 "Open from S2"

are **not** enabled anymore. This block all transfer operations!

Refer to the Configuration Manual 37940 for a description of these parameters.

Switch Failures

Depending on the configured "Transfer switch type" (parameter 3424), all transfers are blocked if specific switch failures occur. Refer to the Configuration Manual 37940 for a description of this parameter.

Transfer Switch Type "Standard"

If one of the following failure conditions is present, all transfer operations are blocked and the respective failure must be acknowledged before a new transfer is possible:

- Fail to close S1 is present
- Fail to close S2 is present

Transfer Switch Type "Delayed"

If one of the following failure conditions is present, all transfer operations are blocked and the respective failure(s) must be acknowledged before a new transfer is possible:

- Fail to open S1 is present
- Fail to open S2 is present
- The transfer switch is in NEUTRAL position AND
 - Fail to close S1 is present AND
 - Fail to close S2 is present

Transfer Switch Type "Closed"

If one of the following failure conditions is present, all transfer operations are blocked and the respective failure(s) must be acknowledged before a new transfer is possible:

- Fail to close S1 is present
- Fail to close S2 is present
- Shunt trip enable flag (20.12) is enabled

- The transfer switch is in S1 or S2 position AND
 - Fail to open S1 is present OR
 - Fail to open S2 is present

Limit Switch Monitoring (Mechanical Failure, LM 21.11)

Functional Description

If the "Limit switch monitoring" function (parameter 3430, refer to the Configuration Manual 37940 for more information about the parameter) is enabled, it is always active, if no transfer command (C2, C1, C2O, C1O) is currently being issued by the ATS controller. The DTSC-200A evaluates the currently present and with use limit switch open replies (parameter 3434) pre-selected replies from the ATS limit switch together with the currently available source to determine which reply signals are currently expected to be able to supply the load.

The plausibility of the ATS limit switch replies will be monitored if a plausibility conflict (see Truth Tables on page 24) is detected, After the 'Limit switch failure delay time' (parameter 3463) the ATS controller blocks all further automatic transfers and displays the "Limit switch fail" message together with the actual and expected replies. LM 21.11 'Mechanical Fail' becomes true.

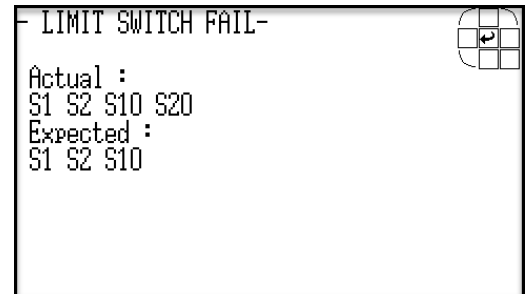


Figure 3-2: Limit switch monitoring - failure message

"Actual" indicates the reply messages, which are currently detected by the ATS limit switch.

"Expected" indicates the reply messages, which are expected to be detected by the ATS limit switch.

A continued automatic operation of the ATS controller is only possible after the "Actual" state matches the "Expected" state again. A "Reset" can be performed with the Return-button if this is the case. The button must be pressed by the operator (or LogicsManager parameter 12891 „Reset limit switch failure“ must become TRUE) to acknowledge the detection and the removal of the failure.

Signal and Command Abbreviations

- S1 Signal: breaker in source 1 position
- S2 Signal: breaker in source 2 position
- S1O Signal: breaker in source 1 OPEN position
- S2O Signal: breaker in source 2 OPEN position
- C1 Command: close to source 1
- C2 Command: close to source 2
- C1O Command: open from source 1
- C2O Command: open from source 2

Truth Tables

The truth tables indicate all possible reply signal combination conditions and the respective reactions of the ATS controller depending on the configuration of the parameters 3424 "Transfer switch type" and 3434 "Use limit sw. OPEN replies" after 3463 'Limit switch Failure delay' is gone. All conditions, which are OK according to the table columns Actual and(!) Expected do not result a "Limit switch fail" message and have a grey background that stands for 'Not displayed' but they are relevant for enabling the 'Reset' button for manual acknowledge.

Table 3-1 is valid for the following settings:

- Parameter 3424 "Transfer switch type" is configured to "Standard"
- Parameter 3434 "Use limit sw. OPEN replies" is configured to "NO"

S1 preferred 98.11 LM: S1 Priority	S1 source OK LM 19.01	S2 source OK LM 19.11	S1 closed signal	S2 closed signal	Actual	Expected
0	0	0	0	0	----	S2
0	0	0	0	1	OK	OK
0	0	0	1	0	OK	OK
0	0	0	1	1	S1 S2	S2
0	0	1	0	0	----	S2
0	0	1	0	1	OK	OK
0	0	1	1	0	OK	OK
0	0	1	1	1	S1 S2	S2
0	1	0	0	0	----	S1
0	1	0	0	1	OK	OK
0	1	0	1	0	OK	OK
0	1	0	1	1	S1 S2	S1
0	1	1	0	0	----	S2
0	1	1	0	1	OK	OK
0	1	1	1	0	OK	OK
0	1	1	1	1	S1 S2	S1
1	0	0	0	0	----	S1
1	0	0	0	1	OK	OK
1	0	0	1	0	OK	OK
1	0	0	1	1	S1 S2	S1
1	0	1	0	0	----	S2
1	0	1	0	1	OK	OK
1	0	1	1	0	OK	OK
1	0	1	1	1	S1 S2	S2
1	1	0	0	0	----	S1
1	1	0	0	1	OK	OK
1	1	0	1	0	OK	OK
1	1	0	1	1	S1 S2	S1
1	1	1	0	0	S1 S2	S1
1	1	1	0	1	OK	OK
1	1	1	1	0	OK	OK
1	1	1	1	1	S1 S2	S1

Table 3-1: Limit switch monitoring - truth table for "Standard" limit switch w/o "Open" replies

Table 3-2 is valid for the following settings:

- Parameter 3424 "Transfer switch type" is configured to "Delayed"
- Parameter 3434 "Use limit sw. OPEN replies" is configured to "NO"

S1 preferred 98.11 LM: S1 Priority	S1 source OK LM 19.01	S2 source OK LM 19.11	S1 closed signal	S2 closed signal	Actual	Expected
0	0	0	0	0	OK	OK
0	0	0	0	1	OK	OK
0	0	0	1	0	OK	OK
0	0	0	1	1	S1 S2	S2
0	0	1	0	0	OK	OK
0	0	1	0	1	OK	OK
0	0	1	1	0	OK	OK
0	0	1	1	1	S1 S2	S2
0	1	0	0	0	OK	OK
0	1	0	0	1	OK	OK
0	1	0	1	0	OK	OK
0	1	0	1	1	S1 S2	S1
0	1	1	0	0	OK	OK
0	1	1	0	1	OK	OK
0	1	1	1	0	OK	OK
0	1	1	1	1	S1 S2	S2
1	0	0	0	0	OK	OK
1	0	0	0	1	OK	OK
1	0	0	1	0	OK	OK
1	0	0	1	1	S1 S2	S1
1	0	1	0	0	OK	OK
1	0	1	0	1	OK	OK
1	0	1	1	0	OK	OK
1	0	1	1	1	S1 S2	S2
1	1	0	0	0	OK	OK
1	1	0	0	1	OK	OK
1	1	0	1	0	OK	OK
1	1	0	1	1	S1 S2	S1
1	1	1	0	0	OK	OK
1	1	1	0	1	OK	OK
1	1	1	1	0	OK	OK
1	1	1	1	1	OK	OK
1	1	1	1	1	S1 S2	S1

Table 3-2: Limit switch monitoring - truth table for "Delayed" limit switch w/o "Open" replies

Limit switch monitoring is disabled for the following settings:

- Parameter 3424 "Transfer switch type" is configured to "Standard"
- Parameter 3434 "Use limit sw. OPEN replies" is configured to "NO"

Table 3-3 is valid for the following settings:

- Parameter 3424 "Transfer switch type" is configured to "Delayed" Parameter 3434 "Use limit sw. OPEN replies" is configured to "YES"

S1 preferred 98.11 LM: S1 Priority	S1 source OK LM 19.01	S2 source OK LM 19.11	S1 closed signal	S2 closed signal	S1 open signal	S2 open signal	Actual	Expected
0	0	0	0	0	0	0	----	S2 S1O
0	0	0	0	0	0	1	S2O	S2 S1O
0	0	0	0	0	1	0	S1O	S2 S1O
0	0	0	0	0	1	1	OK	OK
0	0	0	0	1	0	0	S2	S2 S1O
0	0	0	0	1	0	1	S2 S2O	S2 S1O
0	0	0	0	1	1	0	OK	OK
0	0	0	0	1	1	1	S2 S1O S2O	S2 S1O
0	0	0	1	0	0	0	S1	S2 S1O
0	0	0	1	0	0	1	OK	OK

S1 preferred 98.11 LM: S1 Priority	S1 source OK LM 19.01	S2 source OK LM 19.11	S1 closed signal	S2 closed signal	S1 open signal	S2 open signal	Actual	Expected
0	0	0	1	0	1	0	S1 S10	S2 S10
0	0	0	1	0	1	1	S1 S10 S20	S2 S10
0	0	0	1	1	0	0	S1 S2	S2 S10
0	0	0	1	1	0	1	S1 S2 S20	S2 S10
0	0	0	1	1	1	0	S1 S2 S10	S2 S10
0	0	0	1	1	1	1	S1 S2 S10 S20	S2 S10
0	0	1	0	0	0	0	----	S2 S10
0	0	1	0	0	0	1	S20	S2 S10
0	0	1	0	0	1	0	S10	S2 S10
0	0	1	0	0	1	1	OK	OK
0	0	1	0	1	0	0	S2	S2 S10
0	0	1	0	1	0	1	S2 S20	S2 S10
0	0	1	0	1	1	0	OK	OK
0	0	1	0	1	1	1	S2 S10 S20	S2 S10
0	0	1	1	0	0	0	S1	S2 S10
0	0	1	1	0	0	1	OK	OK
0	0	1	1	0	1	0	S1 S10	S2 S10
0	0	1	1	0	1	1	S1 S10 S20	S2 S10
0	0	1	1	1	0	0	S1 S2	S2 S10
0	0	1	1	1	0	1	S1 S2 S20	S2 S10
0	0	1	1	1	1	0	S1 S2 S10	S2 S10
0	0	1	1	1	1	1	S1 S2 S10 S20	S2 S10
0	1	0	0	0	0	0	----	S1 S20
0	1	0	0	0	0	1	S20	S1 S20
0	1	0	0	0	1	0	S10	S1 S20
0	1	0	0	0	1	1	OK	OK
0	1	0	0	1	0	0	S2	S1 S20
0	1	0	0	1	0	1	S2 S20	S1 S20
0	1	0	0	1	1	0	OK	OK
0	1	0	0	1	1	1	S2 S10 S20	S1 S20
0	1	0	1	0	0	0	S1	S1 S20
0	1	0	1	0	0	1	OK	OK
0	1	0	1	0	1	0	S1 S10	S1 S20
0	1	0	1	0	1	1	S1 S10 S20	S1 S20
0	1	0	1	1	0	0	S1 S2	S1 S20
0	1	0	1	1	0	1	S1 S2 S20	S1 S20
0	1	0	1	1	1	0	S1 S2 S10	S1 S20
0	1	0	1	1	1	1	S1 S2 S10 S20	S1 S20
0	1	1	0	0	0	0	----	S2 S10
0	1	1	0	0	0	1	S20	S2 S10
0	1	1	0	0	1	0	S10	S2 S10
0	1	1	0	0	1	1	OK	OK
0	1	1	0	1	0	0	S2	S2 S10
0	1	1	0	1	0	1	S2 S20	S2 S10
0	1	1	0	1	1	0	OK	OK
0	1	1	0	1	1	1	S2 S10 S20	S2 S10
0	1	1	1	0	0	0	S1	S2 S10
0	1	1	1	0	1	1	OK	OK
0	1	1	1	0	1	0	S1 S10	S2 S10
0	1	1	1	0	1	1	S1 S10 S20	S2 S10
0	1	1	1	1	0	0	S1 S2	S2 S10
0	1	1	1	1	0	1	S1 S2 S20	S2 S10
0	1	1	1	1	1	0	S1 S2 S10	S2 S10
0	1	1	1	1	1	1	S1 S2 S10 S20	S2 S10
1	0	0	0	0	0	0	----	S1 S20
1	0	0	0	0	0	1	S20	S1 S20
1	0	0	0	0	1	0	S10	S1 S20
1	0	0	0	0	1	1	OK	OK
1	0	0	0	1	0	0	S2	S1 S20
1	0	0	0	1	0	1	S2 S20	S1 S20
1	0	0	0	1	1	0	OK	OK
1	0	0	0	1	1	1	S2 S10 S20	S1 S20
1	0	0	1	0	0	0	S1	S1 S20
1	0	0	1	0	0	1	OK	OK
1	0	0	1	0	1	0	S1 S10	S1 S20

S1 preferred 98.11 LM: S1 Priority	S1 source OK LM 19.01	S2 source OK LM 19.11	S1 closed signal	S2 closed signal	S1 open signal	S2 open signal	Actual	Expected
1	0	0	1	0	1	1	S1 S1O S2O	S1 S2O
1	0	0	1	1	0	0	S1 S2	S1 S2O
1	0	0	1	1	0	1	S1 S2 S2O	S1 S2O
1	0	0	1	1	1	0	S1 S2 S1O	S1 S2O
1	0	0	1	1	1	1	S1 S2 S1O S2O	S1 S2O
1	0	1	0	0	0	0	----	S2 S1O
1	0	1	0	0	0	1	S2O	S2 S1O
1	0	1	0	0	1	0	S1O	S2 S1O
1	0	1	0	0	1	1	OK	OK
1	0	1	0	1	0	0	S2	S2 S1O
1	0	1	0	1	0	1	S2 S2O	S2 S1O
1	0	1	0	1	1	0	OK	OK
1	0	1	0	1	1	1	S2 S1O S2O	S2 S1O
1	0	1	1	0	0	0	S1	S2 S1O
1	0	1	1	0	0	1	OK	OK
1	0	1	1	0	1	0	S1 S1O	S2 S1O
1	0	1	1	0	1	1	S1 S1O S2O	S2 S1O
1	0	1	1	1	0	0	S1 S2	S2 S1O
1	0	1	1	1	0	1	S1 S2 S2O	S2 S1O
1	0	1	1	1	1	0	S1 S2 S1O	S2 S1O
1	0	1	1	1	1	1	S1 S2 S1O S2O	S2 S1O
1	1	0	0	0	0	0	----	S1 S2O
1	1	0	0	0	0	1	S2O	S1 S2O
1	1	0	0	0	1	0	S1O	S1 S2O
1	1	0	0	0	1	1	OK	OK
1	1	0	0	1	0	0	S2	S1 S2O
1	1	0	0	1	0	1	S2 S2O	S1 S2O
1	1	0	0	1	1	0	OK	OK
1	1	0	0	1	1	1	S2 S1O S2O	S1 S2O
1	1	0	1	0	0	0	S1	S1 S2O
1	1	0	1	0	0	1	OK	OK
1	1	0	1	0	1	0	S1 S1O	S1 S2O
1	1	0	1	0	1	1	S1 S1O S2O	S1 S2O
1	1	0	1	1	0	0	S1 S2	S1 S2O
1	1	0	1	1	0	1	S1 S2 S2O	S1 S2O
1	1	0	1	1	1	0	S1 S2 S1O	S1 S2O
1	1	0	1	1	1	1	S1 S2 S1O S2O	S1 S2O
1	1	1	0	0	0	0	----	S1 S2O
1	1	1	0	0	0	1	S2O	S1 S2O
1	1	1	0	0	1	0	S1O	S1 S2O
1	1	1	0	0	1	1	OK	OK
1	1	1	0	1	0	0	S2	S1 S2O
1	1	1	0	1	0	1	S2 S2O	S1 S2O
1	1	1	0	1	1	0	OK	OK
1	1	1	0	1	1	1	S2 S1O S2O	S1 S2O
1	1	1	1	0	0	0	S1	S1 S2O
1	1	1	1	0	0	1	OK	OK
1	1	1	1	0	1	0	S1 S1O	S1 S2O
1	1	1	1	0	1	1	S1 S1O S2O	S1 S2O
1	1	1	1	1	0	0	S1 S2	S1 S2O
1	1	1	1	1	0	1	S1 S2 S2O	S1 S2O
1	1	1	1	1	1	0	S1 S2 S1O	S1 S2O
1	1	1	1	1	1	1	S1 S2 S1O S2O	S1 S2O

Table 3-3: Limit switch monitoring - truth table for "Open" limit switch with "Open" replies

Chapter 4. Configuration

This chapter provides information "how to configure the unit via the LC display" as well as the description of all parameters that may be changed without a password. If you have the correct passwords to access all code levels in order to configure the unit, refer to manual 37940 for a description of all parameters, their setting range, and their influence to the operation of the unit.

Structure of the Parameters



The parameters, which may be accessed in code level 0 (no access restrictions) are structured as follows (refer to the Parameters section on page 30 for a more detailed description):


Main Menu

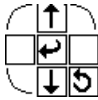
- ▶ Language
 - ▶ English
 - ▶ Español
 - ▶ Polski
 - ▶ German
- ▶ Password
- ▶ Change display contrast
- ▶ Configure monitoring
 - ▶ Time until horn reset
- ▶ System parameter
 - ▶ Password system
 - ▶ Code level display
 - ▶ Code level CAN port
 - ▶ Code level serial port / DPC
 - ▶ Password
 - ▶ Password CAN
 - ▶ Password DPC
 - ▶ Factory settings
 - ▶ Set clock
 - ▶ Hour
 - ▶ Minute
 - ▶ Second
 - ▶ Day
 - ▶ Month
 - ▶ Year
 - ▶ Version

Access configuration menus

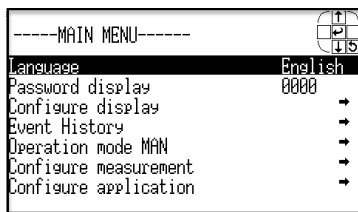


By pressing the SETTING button, the main menu of the configuration will be displayed. A flashing LED over the button additionally signals that the controller screen is in a settings screen.

To leave the configuration mode generally you can push the escape  button to any time.



Softkeys "Configuration - select parameter"



Navigation through the parameters is carried out using the navigation buttons located on the right side of the display.



Return to the Main Screen/exit parameter without saving changes ("Escape")

Navigate.....Pressing the softkey will return the operator to the main display screen that shows monitored parameters. If the operator is configuring the control unit, this will return the user to the previous screen displayed.

Edit.....If it is desired to exit a parameter without saving changes made there, press the softkey and the user will be returned to the previous screen.






Next parameter

Navigate.....This softkey permits the user to navigate down through the parameters. Only the parameters assigned by the active password will be displayed. The parameters that may be viewed without a password are described later in this manual.




Previous parameter/increase/change function


Navigate.....This softkey permits the user to navigate upwards through the parameters.

Edit.....If the desired parameter has been selected by pressing the  softkey, and the cursor has been moved to the appropriate position via the  softkey, the value of the digit may be increased by one using the  softkey. If the digit has reached the highest numeral permitted for the placeholder, the unit will return to the lowest digit by pressing the softkey again.





Select parameter/input confirmation ("Enter")

Navigate.....A highlighted parameter may be configured by pressing the  softkey. This permits the changing of the configured value within the parameter.

Edit.....Any value that has been changed within a parameter is changed and stored in the unit memory by pressing the  softkey.



Next digit of the selected parameter

If the parameter has a numeric value (i.e. the password) that is to be changed, the digits must be changed individually. The  softkey permits navigation to each cursor position of the number to be changed. See the softkey symbols  for an explanation of how to change the digit.

Parameters



NOTE

Descriptions of all parameters, which may be edited/configured via the display, are described in manual 37940.




Language

<small>EN</small> <small>DE</small>	Language Language	Change language {Language}
		{Language}. The selection of a language will affect the following text in the control unit: <ul style="list-style-type: none"> • Text in the operating field which are not defined by an input (i.e. discrete inputs may be a user-defined text) • The alarm list text • All parameters which may be changed via the unit front panel

Password

<small>EN</small> <small>GR</small>	Password display Passwort Display	Password for access via the unit front panel 0000 to 9999
		A password must be entered to permit configuration of the unit via the unit panel. If a password is not entered only the displayed parameters may be edited. All other parameters and a description of their functions may be found in the manual 37940.

Display Contrast

<small>EN</small> <small>GR</small>	Change display contrast Displaykontrast ändern	Change display contrast + / -
		In parameter "Change display contrast" the display contrast may be increased or decreased using these softkey characters. <div style="display: flex; flex-direction: column; gap: 5px;"> <div>  Increase the display contrast. </div> <div>  Decrease the display contrast. </div> <div>  Performs a lamp test. </div> </div>

Deactivate Horn

<small>EN</small> <small>GR</small>	Time until horn reset Zeit Hupenreset	Self acknowledgement of the horn signal 0 to 1.000 s
		A horn signal is issued and the alarm LED flashes when a fault condition occurs. This signal will be disabled when the configured time expires. This is the maximum time, for which a horn signal is active (it will also be deactivated if it is acknowledged before). If this parameter is configured to 0, the horn will remain active until acknowledged.

Code Levels

GR	EN	Code level display Codeebene Display	Code level via display	Info
<p>This value displays the code level that is currently active for access via the front panel.</p>				
GR	EN	Code level CAN port Codeebene CAN Schnittstel.	Password CAN-Bus	Info
<p>This value displays the code level that is currently active for access via the CAN bus.</p>				
GR	EN	Code level serial port / DPC Codeebene serielle Schnittstel	Code level USB	Info
<p>This value displays the code level that is currently active for access via the USB interface.</p>				

Password

GR	EN	Password Passwort	Password for access via the unit front panel	0000 to 9999
<p>A password must be entered to permit configuration of the unit via the unit front panel. If a password is not entered only the displayed parameters may be edited. All other parameters and a description of their functions may be found in the manual 37940.</p>				
GR	EN	Password CAN Passwort CAN	Password for access via CAN	0000 to 9999
<p>A password must be entered to permit configuration of the unit via the CAN bus. If a password is not entered only the displayed parameters may be edited. All other parameters and a description of their functions may be found in the manual 37940.</p>				
GR	EN	Password DPC Passwort RS232	Password for access via USB	0000 to 9999
<p>A password must be entered to permit configuration of the unit via USB interface. If a password is not entered only the displayed parameters may be edited. All other parameters and a description of their functions may be found in the manual 37940.</p>				

Factory (Default) Values

GR	EN	Factory settings Werkseinstellung	Factory setting	YES/NO
<p>The factory settings (default values) may be loaded. Select YES to enable the following screen to be displayed. It is possible to load the factory settings (default values) for all displayed parameters.</p>				
GR	EN	Set default values Standardwerte	Set default values	YES/NO
<p>Entering YES overwrites the current configured values with the default values. Only those parameters will be reset, which are permitted to change in the selected code level.</p>				

Real-Time Clock - Time

GR EN	Hour Stunden	Adjust clock time: hour	0 to 23
		The hour of the current time is set here. Example: 0 0 th hour of the day. 23 23 rd hour of the day.	
GR EN	Minute Minuten	Adjust clock time: minute	0 to 59
		The minute of the current time is set here. Example: 0 0 th minute of the hour. 59 59 th minute of the hour.	
GR EN	Second Sekunden	Adjust clock time: second	0 to 59
		The second of the current time is set here. Example: 0 0 th second of the minute. 59 59 th second of the minute.	

Real-Time Clock - Date

GR EN	Day Tag	Adjust date: day	1 to 31
		The day of the current date is set here. Example: 1 1 st day of the month. 31 31 st day of the month.	
GR EN	Month Monat	Adjust date: month	1 to 12
		The month of the current date is set here. Example: 1 1 st month of the year. 12 12 th month of the year.	
GR EN	Year Jahr	Adjust date: year	0 to 99
		The year of the current date is set here. Example: 0 Year 2000. 99 Year 2099.	

Version

GR EN	Version Version	Displays system information	Info
		System information, like serial number of the unit and software version is displayed.	

Appendix A. Messages

Timer / Operation States

The following table indicates the display messages of the various timers and operations states:

Display text	Description	Corresponding timer parameter	Note
S1 Start delay	Source 2 has failed, and now the S1 start delay timer is running.	"S1 start delay time" (parameter 4149)	Gen-Gen mode only
S2 Start delay	Source 1 has failed, and now the S2 start delay timer is running.	"S2 start delay time" (parameter 3330)	Util-Gen and Gen-Gen mode only
S1 Stable timer	The transfer from Source 2 to Source 1 is delayed, to permit stabilization of Source 1 before a re-transfer is made. If Source2 fails during timing, a re-transfer to Source 1 will be performed immediately.	"S1 Source Stable time" (parameter 3333)	
S2 Stable timer	The transfer from Source 1 to Source 2 is delayed, to permit stabilization of Source 2 before a transfer is made.	"S2 Source Stable time" (parameter 3332)	
S1 Cooldown	Engine runs unloaded, after a retransfer to Source 2 has been made. This is to ensure that engine 1 has enough time to cool down.	"S1 cooldown time" (parameter 3343)	Only for Gen-Gen applications
S2 Cooldown	Engine runs unloaded, after a retransfer to Source 1 has been made. This is to ensure that engine 2 has enough time to cool down.	"S2 cooldown time" (parameter 3344)	Util-Gen and Gen-Gen mode only
Load on S1	Source 1 is connected to the load.	-	
Starting S2	Engine 2 is being started.	"S2 Start fail delay time" (parameter 3331)	
Load on S2	Source 1 has failed, and Source 2 is connected to the load.	-	
Load test	The control is in "Load Test" mode. A Source 1 failure is simulated (duplicates operation of Source 1 failure).	Load test activation either via "Load test" Button or via "Load Test - LogicsManager" (parameter 12640)	
No load test	The ATS system is in "No load Test" mode. This means, that the engine runs unloaded, and no transfers will take place. This test mode is used to ensure proper operation of the engine.	No load test activation either via "Engine test" Button or via "No Load Test - LogicsManager" (parameter 12650)	
Elevator signal	The Elevator pre-signal timer is running. This message only occurs, if the "Elevator pre-signal" feature is activated and BOTH sources are available. If only one source is available (like in an emergency case) the elevator pre-signal timer will automatically be bypassed.	"Elevator pre-signal duration" (parameter 4491)	
Starting S1	Engine 1 is being started.	"S1 Start fail delay time" (parameter 3341)	Only for Gen-Gen applications
Wait S1 to open	A command is issued by the ATS Controller to open the ATS switch from Source 1 position	"Limit switch reply timeout" (parameter 3428)	
Wait S2 to open	A command is issued by the ATS Controller to open the ATS switch from Source 2 position	"Limit switch reply timeout" (parameter 3428)	
Wait S1 to close	A command is issued by the ATS Controller to close the ATS switch into Source 1 position	"Limit switch reply timeout" (parameter 3428)	
Wait S2 to close	A command is issued by the ATS Controller to close the ATS switch into Source 2 position	"Limit switch reply timeout" (parameter 3428)	
Rem. peak shave	"Remote peak shave" mode is active	Remote peak shave activation via "Remote peak shave - LogicsManager" (parameter 12630)	
Motor Load Disc.	The Motor Load Disconnect timer is running. This message only occurs, if the "Motor load disconnect" feature is activated.	"Disconnect time S1→S2" (parameter 4551) and/or "Disconnect time S2→S1" (parameter 4552)	
Inhib. XFR to S1	A transfer to Source 1 is inhibited although Source 1 is available. In the case of a Source 2 failure, a transfer to Source 1 takes place, even the transfer is inhibited	"Inhibit transfer to Source 1" activation via "Inhib. XFR to Source 1 - LogicsManager" (parameter 12610)	

Display text	Description	Corresponding timer parameter	Note
Inhib. XFR to S2	A transfer to Source 2 is inhibited although Source 2 is available. In the case of a Source 1 failure, a transfer to Source 2 takes place, even the transfer is inhibited.	"Inhibit transfer to Source 2" activation via "Inhib. XFR to Source 2 - LogicsManager" (parameter 12620)	
Load Shed active	Load shed is active	Load shed active via LogicsManager parameter 12870	
Pwr. rate. prov.	"Interruptible power rate provisions" mode is active	"Interruptible power rate provisions" activation via "Int. Power Rates - LogicsManager" (parameter 12660)	
ATS inhibit	The ATS Controller is in "Inhibit mode". No transfers take place if the ATS controller is set into this mode.	"ATS inhibit" activation via "Inhibit ATS - LogicsManager" (parameter 12600)	
Neutral S1→S2	The ATS controller delays the transfer from NEUTRAL position to Source 2 position.	Neutral time S1→S2 (parameter 3425)	Only available if Transition mode "Delayed" or "Closed" is selected.
Neutral S2→S1	The ATS controller delays the transfer from NEUTRAL position to Source 1 position.	Neutral time S2→S1 (parameter 3426)	Only available if Transition mode "Delayed" or "Closed" is selected.
In-Phase Check	The ATS controller performs an In-Phase check before a transfer is made. This message only occurs, if the "Inphase monitor" feature is activated.	Parameter 4570	
Transfer pause	The ATS controller delays the next transfer attempt.	"Wait time until next XFR attempt" (parameter 3429)	
XFR delay S1→S2	The "Transfer delay timer S1→S2" is used to add an additional delay to the transfer, even if the "S2 stable timer" has already expired.	Transfer delay timer S1→S2 (parameter 4496)	If the transfer delay timer is configured to 0 seconds this display text is not shown.
XFR delay S2→S1	The "Transfer delay timer S2→S1" is used to add an additional delay to the transfer, even if the "S1 stable timer" has already expired.	Transfer delay timer S2→S1 (parameter 4497)	If the transfer delay timer is configured to 0 seconds this display text is not shown.
Limit switch fail	The limit switch monitoring function run into a plausibility check mismatch and displays Actual and Expected replies and sources.	Limit switch failure delay (parameter 3463)	If the limit switch failure delay is configured to 0 seconds limit switch fail would be released permanently.
Service disconn.	The control is in "Service Disconnect Mode". Both sources are disconnected.	"Service disconnect" activation via "Service disconnect - LogicsManager" (parameter 12890)	Only available if Transition mode "Delayed" or "Closed" is selected.

Table 4-1: Timer / operation states - display

Alarm Messages



Message in ToolKit Message in the display	Meaning
Batt. overvolt. Lev.1 Batt. overvolt.1	Battery overvoltage, limit value 1 The battery voltage has exceeded the limit value 1 for battery overvoltage for at least the configured time and did not fall below the value of the hysteresis. Additionally, the alarm has not been acknowledged (unless the "Self acknowledgement" is configured YES).
Batt. overvolt. Lev.2 Batt. overvolt.2	Battery overvoltage, limit value 2 The battery voltage has exceeded the limit value 2 for battery overvoltage for at least the configured time and did not fall below the value of the hysteresis. Additionally, the alarm has not been acknowledged (unless the "Self acknowledgement" is configured YES).
Batt. undervolt. Lev.1 Batt. undervolt.1	Battery undervoltage, limit value 1 The battery voltage has fallen below the limit value 1 for battery undervoltage for at least the configured time and has not exceeded the value of the hysteresis. Additionally, the alarm has not been acknowledged (unless the "Self acknowledgement" is configured YES).
Batt. undervolt. Lev.2 Batt. undervolt.2	Battery undervoltage, limit value 2 The battery voltage has fallen below the limit value 2 for battery undervoltage for at least the configured time and has not exceeded the value of the hysteresis. Additionally, the alarm has not been acknowledged (unless the "Self acknowledgement" is configured YES).
CAN Open Fault CAN Open Fault	Interface alarm CAN Open The communication with external expansion boards via the CAN Open interface has been interrupted and no data can be transmitted or received over the bus. Additionally, the alarm has not been acknowledged (unless the "Self acknowledgement" is configured YES).
Fail to close S1	Switch failed to close to source 1 The ATS controller has issued a "close" command to close the transfer switch to source 1 position, but did not receive any feedback from the limit switch reply "SN" at DI 1 (terminal 51) within the configured time.
Fail to close S2	Switch failed to close to source 2 The ATS controller has issued a "close" command to close the transfer switch to source 2 position, but did not receive any feedback from the limit switch reply "SE" at DI 2 (terminal 52) within the configured time.
Fail to open S1	Switch failed to open from source 1 The ATS controller has issued an "open" command to open the transfer switch from source 1 position, but did not receive any feedback from the limit switch reply "SNO" at DI 5 (terminal 55) within the configured time.
Fail to open S2	Switch failed to open from source 2 The ATS controller has issued an "open" command to open the transfer switch from source 2 position, but did not receive any feedback from the limit switch reply "SNE" at DI 4 (terminal 54) within the configured time.
Overcurrent Lev.1	Overcurrent, limit value 1 The load current has exceeded the limit value 1 for the load overcurrent for at least the configured time and did not fall below the value of the hysteresis. Additionally, the alarm has not been acknowledged (unless the "Self acknowledgement" is configured YES).
Overcurrent Lev.2	Overcurrent, limit value 2 The load current has exceeded the limit value 2 for the load overcurrent for at least the configured time and did not fall below the value of the hysteresis. Additionally, the alarm has not been acknowledged (unless the "Self acknowledgement" is configured YES).
Overcurrent Lev.3	Overcurrent, limit value 3 The load current has exceeded the limit value 3 for the load overcurrent for at least the configured time and did not fall below the value of the hysteresis. Additionally, the alarm has not been acknowledged (unless the "Self acknowledgement" is configured YES).
Overload Lev.1	Overload, limit value 1 The load power has exceeded the limit value 1 for load overload for at least the configured time and did not fall below the value of the hysteresis. Additionally, the alarm has not been acknowledged (unless the "Self acknowledgement" is configured YES).
Overload Lev.2	Overload, limit value 2 The load power has exceeded the limit value 2 for load overload for at least the configured time and did not fall below the value of the hysteresis. Additionally, the alarm has not been acknowledged (unless the "Self acknowledgement" is configured YES).

Message in ToolKit Message in the display	Meaning
In-phase timeout	Inphase timer has expired If inphase monitoring is enabled and the unit was not able to detect synchronism between source 1 and source 2 within the configured time, this message will be displayed.
Mechanical fail	Mechanical failure occurred (Limit switch failure) The limit switch reply evaluation system has recognized an irregular state of the limit switches from the transfer switch. The limit switch fail screen gives detailed information about the ACTUAL reply signals, and the EXPECTED reply signals. Once the Actual reply signals meet the same state as the expected ones, the mechanical failure will present a Reset button on the limit switch fail screen for manual (qualified personnel) acknowledgement and records an entry in the event history.
Overlap timeout	Switch was unable to open from overlap position The limit switch reply evaluation system has recognized an irregular state of the limit switches from the transfer switch. It was not possible to open the transfer switch from either source.
S1 phase rot.mis.	Source 1 phase rotation miswired If source 1 phase rotation monitoring is enabled and a miswired phase rotation has been detected, this message will be displayed.
S2 phase rot.mis.	Source 2 phase rotation miswired If source 2 phase rotation monitoring is enabled and a miswired phase rotation has been detected, this message will be displayed.
Start fail S1	Source 1 could not be started Genset 1 could not be started. This is only valid if the application mode is configured to "Gen-Gen".
Start fail S2	Source 2 could not be started Genset 2 could not be started.
Unint. Open S1	Unintended Open S1 The breaker to S1 was opened externally without the ATS having issued an "Open" command
Unint. Open S2	Unintended Open S2 The breaker to S2 was opened externally without the ATS having issued an "Open" command
Unint. stop S1	Genset 1 has stopped unintentionally An unintended stop of genset 1 has occurred (possibly due to a fuel shortage or a general problem with the engine). This is only valid if the application mode is configured to "Gen-Gen".
Unint. stop S2	Genset 2 has stopped unintentionally An unintended stop of genset 2 has occurred (possibly due to a fuel shortage or a general problem with the engine).

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