DO NOT connect any other control equipment to the S-link controlled products except Side-Power original S-link products or via a Side-Power supplied interface product made for interfacing with other controls. Any attempt to directly control or at all connect into the S-link control system without the designated and approved interface, will render all warranties and responsibilities for the complete line of Side-Power products connected void and null. If you are interfacing by agreement with Sleipner and through a designated and approved interface, you are still required to also install an original Sidepower control panel to enable efficient troubleshooting if necessary.

DECLARATION OF CONFORMITY

We, Sleipner Motor AS
P.O. Box 519
N-1612 Fredrikstad, Norway
declare that this product with accompanying standard remote control systems complies with the essential health and safety requirements according to the Directive 89/336/EEC of 23 May 1989 amended by 92/31/EEC and 93/68/EEC.
PJC-211/212/221/222
Control panel with S-link™ CAN-bus connection

Product features

• For proportional thruster control with DC, AC and Hydraulic Thrusters (Hydraulic thrusters PJC-221/222 only).
• Finger tip control speed control with purpose designed joysticks
• Hold - function for easy docking, runs thrusters at selected power (Dual joysticks PJC-212/222 only)
• Back-lit LCD display with instant feedback  
  - System status / alarms  
  - Amount of thrust & direction of thrust
• Interactive multi-language menus
• CAN-Bus communication with thrusters and accessories
• Plug & play cables with compact connectors
• Diagnostics and system setup via panel
• Built-in audible alarm "buzzer"
• Connector for external "buzzer"/loud audible alarms
• Supports Side-Power retractable thrusters with or without Speed Control
Panel Layout, PJC-211

- Holding function for auto-running of bow and stern thrusters together in the direction of the arrows at selected power.
- Press "+" for more and "-" for less power (6 steps).
- If any control unit are running the thruster in opposite direction to the hold function, the hold function will be deactivated.
- Press both "ON" buttons simultaneously to activate control panel.
- Press to change between day and night light.
- Press and hold for 3 seconds to access menu system and choose items in menus.
- Press to de-activate control panel or cancel or go back in menu system or mute internal alarm buzzer.

Panel Layout, PJC-212

- Holding function for auto-running of bow and stern thrusters together in the direction of the arrows at selected power.
- Press "+" for more and "-" for less power (6 steps).
- If any control unit are running the thruster in opposite direction to the hold function, the hold function will be deactivated.
- Press both "ON" buttons simultaneously to activate control panel.
- Press to change between day and night light.
- Press and hold for 3 seconds to access menu system and choose items in menus.
- Press to de-activate control panel or cancel or go back in menu system or mute internal alarm buzzer.
- Speed control joystick for bow thruster.
- Speed control joystick for stern thruster.
- Information display, see following pages for details.
Panel Layout, PJC-221

Panel Layout, PJC-222

Holding function for auto-running of bow and stern thrusters together in the direction of the arrows at selected power
Press "+" for more and "-" for less power (6 steps).
If any control unit are running the thruster in opposite direction to the hold function, the hold function will be deactivated.

Press and hold "ON" button for 1 second to activate control panel.
DISPLAY IN NORMAL USE:

Status indicators for bow thruster. (Port bow thruster in a dual bow thruster setup)
Runtime indicator will be shown here in a single DC electric bow thruster setup

Status indicators for stern thruster. (Port bow thruster in a dual stern thruster setup)
Runtime indicator will be shown here in a single DC electric stern thruster setup

Examples of display for different panel applications:

PJC211/221:
DC Electric Bow thruster

PJC221:
Hydraulic Bow thruster

PJC221:
AC Electric Bow thruster

PJC212/222:
DC Electric Bow thruster
DC Electric Stern Thruster

PJC212/222:
Dual DC Electric Bow thrusters
Dual DC Electric Stern thrusters

PJC212/222:
Dual Hydraulic Bow thrusters
Dual Hydraulic Stern thrusters

PJC222:
AC Electric Bow thruster
Hydraulic Stern Thruster

PJC222:
Dual AC Electric Bow thrusters
Dual AC Electric Bow thrusters

PJC222:
Dual Hydraulic bow thrusters
INDICATORS FOR DC Thrusters:

Battery indicator.
From 8.5V to 12V for 12V thrusters,
15V to 24V for 24V thrusters

Motor temperature indicator.
From 70°C to 130°C

Symbol shown when a DC Thruster is used in a dual bow or dual stern setup:

Battery indicator.
From 8.5V to 12V for 12V thrusters,
15V to 24V for 24V thrusters

Motor temperature indicator.
From 70°C to 130°C

INDICATORS FOR AC Thrusters:

Motor temperature indicator.

INDICATORS FOR Hydraulic Thrusters:

Hydraulic oil temperature indicator.

Symbol shown when a DC Thruster is used in a dual bow or dual stern setup:

Battery indicator.
From 8.5V to 12V for 12V thrusters,
15V to 24V for 24V thrusters

Motor temperature indicator.
From 70°C to 130°C

INDICATORS FOR Retractable Thrusters:

Symbol shown when the thruster deploys

Symbol shown when the thruster retracts

Symbol shown when the thruster is in position OUT

When the thruster is deployed and no input is given via the joysticks/buttons over a 10 second period, the panel will give a audible signal every 10th second to tell that the thruster is still deployed.

INDICATORS showing thrust direction and amount:

Thrust power and direction, Bow thruster(s)
Input from bow joystick on this panel.
The thrust indicator will be shown in this position on a single joystick panel if the thruster is defined as a bow thruster

Thrust power and direction, Stern thruster(s)
Input from stern joystick on this panel.
The thrust indicator will be shown in this position on a single joystick panel if the thruster is defined as a stern thruster.

Indicating amount of thrust set by other control units in the system, i.e additional PJC panels, 8700 Retract panel, input via 8730 S-link external switch interface, S-link remote control etc.

If two or more units is set to run the thruster in opposite direction, this information will not be shown.

FIRST TIME SETUP

After installation of a S-link thrusters system, a System Setup procedure to setup control panels, thrusters and additional equipment must be completed (ref. procedure on page 10) before the system can be used.
DISPLAY WHEN ALARMS:

When there is a problem or a fault, the panel will show this alarm situation by changing LCD display backlight to red color.

The panel will also change to show "Alarm Info" on the bottom of the screen, indicating that by pressing the corresponding button below, you will get information about what the problem is (examples below).

Refer to Alarm code overview/table on pages 18-19 for full description on the different alarm codes.

Non auto reset alarms

Some alarms is not auto reset, and needs an confirmation from user to be reset. This alarms need reset: Motor Overcurrent 1, Controller Overtemp 2, Low Voltage 5, IPC Error 7, Critical Error 8, Low Motor Current 9, Motor Contactor 10, System Error 11, No Communication 12, Motor Temp Sensor 13, Supply Voltage Fault 14, Fuse Blown 15, Motion OUT Fault 17, Motion IN Fault 18, Actuator Fault 19, Pos.Sensor Fault 20, Low Oil Level 23, AC Motor Sensor Fault 29, VFD Fault 34, Warning Low Voltage 35.

When using the "HOLD" function,
the internal and external (if fitted) buzzer will give the following warning signals:

Voltage below 9.3V/17.5V (12V/24V system) or temperature above 85°C (80°C for PPC800 FW V1.013 or older/ SR150000 FW V1.006 or older): Single short beep every 2.4 seconds

Voltage below 8.9V/16.3V (12V/24V system) or temperature above 100°C (90°C for PPC800 FW V1.013 or older/ SR150000 FW V1.006 or older): Two short beeps every 2.4 seconds

Voltage below 8.5V/15V (12V/24V system) or temperature above 115°C (100°C for PPC800 FW V1.013 or older/ SR150000 FW V1.006 or older): Red backlight in display and continuous short beeps.

If one or more of the thrusters enters an alarm state - Voltage below 8 Volts (both 12 and 24 Volt systems) or temperature above 130°C (110°C for PPC800 FW V1.013 or older/ SR150000 FW V1.006 or older): Continuous beeps, and the "HOLD" function will be cancelled and both thrusters will stop. Temperature must drop below 115°C (100°C for PPC800 FW V1.013 or older) before the thruster can be operated again.


**ALARMS (AC & HYDRAULIC THRUSTERS):**

When there is a problem or a fault, the panel will show this alarm situation by the LCD display in red color. All alarms will show in display when panel is turned OFF. This requires the S-link and other system devices has power. Critical alarms are also triggering internal and external buzzer (a long beep every 2 seconds). The buzzer can be silenced by pushing the button below, this will also silence all other panels in the system.

Critical alarms: LOW OIL LEVEL, HIGH OIL TEMPERATURE, EMERGENCY STOP, HIGH SPEED STABILIZER NOT ACTIVE and HYDRAULIC AC MOTOR POWER PACK OVERTEMP, AC THRUSTER OVERTEMP, AC THRUSTER FAIL, STABILIZER FAULT.

For safety!
When oil pressure goes below 10bar, the HOLD function are deactivated.

**SPECIFIC ALARMS**

**STOP BUTTON**
Pressing the STOP button on a hydraulic panel will operate the dump valve and the thruster will stop. NB: FOR EMERGENCY USE ONLY.

Panel will not run thrusters.
Pressing button below will mute buzzer alarm at all panels and show the alarm info screen.

**WARNING! HIGH SPEED. STABILIZER NOT ACTIVE!**
(Only for yachts equipped with a Side-Power Stabilizer system)
Warning will show when yacht is driven at high speed with stabilizer system inactive. Please refer to the *Stabilizer ECU manual* for speed settings.

Pressing button below will mute buzzer alarm at all panels and show the alarm info screen.

**ALARM SHOWN ON INACTIVE PANELS!**
This screen will be shown on inactive panels if any of the following critical alarms occur:
LOW OIL LEVEL, HIGH OIL TEMPERATURE, HYDRAULIC AC MOTOR POWER PACK OVERTEMP, AC THRUSTER OVERTEMP, AC THRUSTER FAIL

Pressing button below will mute buzzer alarm at all panels and show the alarm info screen.
SETUP PROCEDURE

The setup procedure requires knowledge of the serial number and location of all the S-link devices.

Write this down in the form on the last page to have the information at hand when doing a manual setup.

At the first startup of a new system, one of the two screens below will be shown:

**SETUP DO NOT MATCH SYSTEM. ✔ FOR AUTO SETUP**

New devices found. Not in conflict with other devices. Press button below the ✔-symbol to auto setup.

Thrusters can not be operated until setup is completed.

**RUN SETUP! DEVICES IN CONFLICT!**

Detected devices in conflict. Two or more thrusters defined as same instance (bow/stern/bow STB/Stern STB). Run Setup procedure to correct.

Thrusters can not be operated until setup is completed.

Press and hold the button marked "MENU" for 3 seconds to enter the menu system. Use the (stern) joystick to select "SETUP", Press button below the ✔-symbol to enter the "SETUP"-menu.

Use the (stern) joystick to select "SYSTEM DEVICES", Press button below the ✔-symbol to enter the "SYSTEM DEVICES"-menu.

Use the (stern) joystick to set the pin code one number at the time, press button below the ✔-symbol to jump to next number and confirm. The pin code is "9 9 9 9".

**NOTE:** Re-entering the SYSTEM DEVICES menu within 15 minutes does not require entering PIN code.

The devices found in the system is now displayed with their instance and serial number.

Go through all devices and make sure that they are set to the correct instance and function (refer to detailed instructions in the SETUP section of "Menu System"-chapter).

Press button below the ✔-symbol to save setting and return to "Setup"-Menu.
MENU SYSTEM:
Access menu system by press and hold Menu button for 3 seconds
Move around in menus by using joysticks
Follow instructions on the screen and press the buttons below the symbols indicated on LCD screen

MAIN MENU ITEMS:
Move between main menu items with the (stern) joystick.

BUTTON SYMBOLS
On the bottom line of the display, a symbol will be shown over the buttons below. These symbols will show what function each corresponding button have in the selected menu entry.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>✅</td>
<td>Return to previous menu.</td>
</tr>
<tr>
<td>☑️</td>
<td>Select highlighted menu text / Save edited parameter.</td>
</tr>
<tr>
<td>✗️</td>
<td>Edit highlighted parameter.</td>
</tr>
<tr>
<td>✗️</td>
<td>Cancel editing without saving.</td>
</tr>
<tr>
<td>🎲</td>
<td>This symbol indicates that the (stern) joystick is used to move between menu items /parameters.</td>
</tr>
</tbody>
</table>

LANGUAGE
Choose language by moving joystick:
English, Norwegian, German, French, Spanish and Italian.
Press the button below ✅ to set the language to the highlighted menu entry. A star (*) on each side indicated the laguage set.

STABILIZER
(Shown only for yachts equipped with a Side-Power Stabilizer system)
Press the button below ✗️ to edit the selected parameter. ON/OFF will start to blink, use joystick to alter value.
Press the button below ✅ to save edited parameter to device.

STABILIZER:
Values: ON/OFF
Switches the stabilizer ON or OFF.

AnySpeed:
Values: ON/OFF
Switches the zero speed/at anchor stabilization ON or OFF.
SETUP

Move between menu items with the (stern) joystick.
Press the button below ✓ to select the highlighted menu entry.
Press the button below ◄ to return to the previous menu.

Setting done under SETUP will be sent to all other panels in the system.

SYSTEM DEVICES

View all devices (except PDC100\(^1\)) connected to S-Link and manually change setup values.

\(^1\) PDC100 must be setup by authorized personnel.

A PIN code is required to enter the SYSTEM DEVICES menu.
Use the (stern) joystick to set the pin code one number at the time, press button below the ▶ symbol to jump to next number and confirm. The pin code is “9 9 9 9”.

The number of devices found is shown in the upper right corner of the display.
Use (stern) joystick to move between the installed devices.

The list of devices found can fill more than one screen. A scroll bar indicates the position of the selected item.

**NOTE:** Re-entering the SYSTEM DEVICES menu within 15 minutes does not require entering PIN code

**PHC 024** (Controller for hydraulic thrusters)

Most functions requires **PHC 024 with firmware V.1.101 or newer!**

Move between PHC-024 parameters with the (stern) joystick.
Press the button below ◄ to return to the previous menu.
Press the button below ◄ to edit the selected parameter.
Parameter value will start to blink, use joystick to alter value.
Press the button below ✓ to save edited parameter to device
Press the button below ◄ to cancel editing without saving.

**Bow/Stern Direction:**
Values: Normal (default)/Inverted

Switches between Normal and Inverted running direction for the thruster

**Pump Control** (PTO Mounted Pump)
Values: Auto (default)/Always ON

When «Pump Control» is set to «Auto», the system will automatically control load sharing between two PTO pumps by deactivating the second PTO pump when not needed (two PTO pumps/control valves required) to reduce heat generation in the system and save fuel/energy.

When any thruster is running, both PTO pumps will be active to ensure good performance. When a SPS stabilizer system is active, one PTO pump will be deactivated to save power. If stabilizers are active and the system pressure drop below 80bar, the system will activate the second PTO pump for 15 minutes to increase the flow capacity and maintain required pressure. After 15 minutes the second pump will be deactivated unless the pressure is still below 80 bar.

**NB:** "Pump Control: Auto" must only be used on **PHC 024 with firmware V.1.008 or newer!"
**Cooling Pump**  
Values: Always Running/Temp Controlled (default)  

When the option “Temp Controlled” is selected, the cooling pump will start when oil temperature exceeds 50°C and stop when the oil temperature goes below 40°C.  
On systems with two oil tanks, this setting will apply to both tanks.

**Cooling Signal Output**  
Values: Normal (default)/Inverted  

Set to Normal when using a hydraulic cooling pump.  
Should be set to Inverted when using an electrical cooling pump with a 10 2380A-12/24V relay box.

**Cooling Power Save**  
Values: ON (default)/OFF  

ON sets the Cooling Pump into power save mode, which means the Cooling Pump output is dropping to 0 volt when the oil pressure is below 10 bar for more than 10 seconds (Cooling Pump are turned OFF).

**Tank Monitor**  
Values: ON (default)/OFF  

ON is when you have a tank monitor, oil level and Oil temp sensor.  
OFF is when you do not have a tank monitor and the display will show 0°C and no alarm for high temperature or low level will not be transmitted on the S-link.

**Instance**  
Values: -- (default)/PORT/STARBOARD  

Setting the PHC024 tank controller instance. For a mono hull boat the instance should be “--”. If you have an catamaran with two PHC024 controllers then the one in the port hull should be set as “PORT” and the one in the starboard hull as “STARBOARD”. This way the two controllers are shown in the panel display as two different oil tanks to monitor.

**PDC 201 (SAC Controller)**  
Press the button below to return to the previous menu.  
Press the button below to edit the selected parameter.  
Parameter value will start to blink, use joystick to alter value.  
Press the button below to save edited parameter to device.  
Press the button below to cancel editing without saving.

**Location**  
Values: BOW/STERN/BOW-STB/STERN-STB  
Set the location for selected device. Use BOW or STERN in a conventional thruster system. In a system with two bow or stern thrusters (i.e a catamaran), use BOW or STERN for port thruster, BOW-STB or STERN-STB for starboard thruster.

**Direction**  
Values: Normal (default)/Inverted  
Switches between Normal and Inverted running direction for the thruster.
**Main Switch**
Press the button below to return to the previous menu.
Press the button below to edit the selected parameter.
Parameter value will start to blink, use joystick to alter value.
Press the button below to save edited parameter to device
Press the button below to cancel editing without saving.

**Location**
Values: BOW/STERN/BOW-STB/STERN-STB

Set the location for selected device. Use BOW or STERN in a conventional thruster system. In a system with two bow or stern thrusters (i.e. a catamaran), use BOW or STERN for port thruster, BOW-STB or STERN-STB for starboard thruster

**PPC800** (DC Speed Control)
**SR150000** (Control unit for SRV80/SRV100/SRV130/SRV170/SRV210/SRH)
**SR61242** (Control unit for SR80/SR100)

Move between parameters with the (stern) joystick.
Press the button below to return to the previous menu.
Press the button below to edit the selected parameter.
Parameter value will start to blink, use joystick to alter value.
Press the button below to save edited parameter to device
Press the button below to cancel editing without saving.

**Direction**
Values: Normal (default)/Inverted

Switches between Normal and Inverted running direction for the thruster

**Function**
Values: SR(V/L) ON/OFF, SRP 80/100, SRVP 130-210, SEP 30-240, SRVP 80/100, SRH, SRHP

Setup the control unit behaviour

<table>
<thead>
<tr>
<th></th>
<th>PPC800</th>
<th>SR150000</th>
<th>SR61242</th>
<th>PHC 024</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR(V/L ) ON/OFF</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>SRP</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>SRVP/SRLP</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>SEP 30-240</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRHP</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>
**RCRS-1** (S-Link Radio Remote Receiver)

Move between parameters with the (stern) joystick.
Press the button below ‹ to return to the previous menu.
Press the button below ‹ to edit the selected parameter.
Parameter value will start to blink, use joystick to alter value.
Press the button below † to save edited parameter to device
Press the button below † to cancel editing without saving.

**BOW/STERN Thrust**

Values: 0-100% (Default 75%)

Set the amount of thrust given by the remote control.
In a bow/stern configuration, try to balance the thrust so that the boat moves straight sideways when both thrusters are operated simultaneously with input from the remote only.

**MSI8730** (S-Link Interface)

Move between parameters with the (stern) joystick.
Press the button below ‹ to return to the previous menu.
Press the button below ‹ to edit the selected parameter.
Parameter value will start to blink, use joystick to alter value.
Press the button below † to save edited parameter to device
Press the button below † to cancel editing without saving.

**Location**

Values: BOW/STERN/BOW-STB/STERN-STB

Set the location for selected device. Use BOW or STERN in a conventional thruster system. In a system with two bow or stern thrusters (i.e. a catamaran), use BOW or STERN for port thruster, BOW-STB or STERN-STB for starboard thruster.

**Thrust**

Values: 0-100% (Default 75%)

Set the amount of thrust given by the remote control.
In a bow/stern configuration, try to balance the thrust so that the boat moves straight sideways when both thrusters are operated simultaneously with input from the remote only.

**HOLD CALIBRATION**

Calibrates the HOLD-function to get balanced thrust from the bow and stern thruster.

To start calibration, press the “+”-Hold button in the desired direction. For a first time calibration, the thrusters will start at 70%. A system previously calibrated will start with the last amount of thrust set.

One step on the Hold-button represents 1/6 if the calibrated value.

Adjust power with the joystick.
Press the button below † to save the calibration values.
Press the button below † to cancel calibration without saving.
INFO
Move between menu items with the (stern) joystick.
Press the button below ✓ to select the highlighted menu entry.
Press the button below ▶ to return to the previous menu.

THRUSTER INFO
Display info about the thrusters in the system
The number of thrusters/controllers found is shown in the upper right corner of the display.
Use (stern) joystick to move between the installed devices.
Press the button below ✓ to select the highlighted menu entry.
Press the button below ▶ to return to the previous menu.

The list of devices found can fill more than one screen. A scroll bar indicates the position of the selected item.
The joystick(s) operates the thrusters as normal while info is displayed, this will be useful for troubleshooting, service and general system diagnostics.

PPC800 (DC Speed Control)
SR150000 (Control unit for SRV80/SRV100/SRV130/SRV170/SRV210/SRH)
SR61242 (Control unit for SR80/SR100)
Motor Temp: Temperature measured at the electric motor brushes
Contr. Temp: Temperature measured inside the controller
Voltage: Motor Voltage measured at the controller
Thrust: Thrust level from joystick/hold buttons
A/kW: Motor Current and Effect reading measured at the controller (PPC800 only)

Panel INFO
Display info about the control panel

FW: Version number, Firmware
HW: Version number, Hardware
S/N: Serial number of the control panel
Voltage: S-link system voltage measured at the panel

Press the button below ▶ to return to the previous menu.

PHC024 (Controller for hydraulic thrusters)
Oil Pressure: Oil pressure measured at system oil tank
Oil Temp: Temperature measured inside the oil tank
Bow Thrust: Thrust level from joystick/hold buttons
Stern Thrust: Thrust level from joystick/hold buttons
FW: Version number, Firmware
S/N: Serial number of the PHC 024

Press the button below ▶ to return to the previous menu.

PDC100 (Controller for AC electric thrusters)
Motor Speed: RPM on motor output shaft
Motor Temp: Temperature measured in motor
Thrust: Thrust level from joystick/hold buttons

Press the button below ▶ to return to the previous menu.
DEFAULT SETTINGS
Reset all settings to factory default - follow instructions on screen
Press the button below □ to confirm reset
The following parameters/values will be set to the factory settings:

- Language = English
- Backlight Level = 5
- Backlight Night Color = Green
- Backlight Nightlevel = 1
- Timer Auto-Off = 05 min
- Hold Calibration = 70% Bow and Stern

All system devices will be erased from memory.
(Setup procedure must be followed to reconfigure the system)

PANEL SETUP
Move between parameters with the (stern) joystick.
Press the button below △ to return to the previous menu.
Press the button below ◄ to edit the selected parameter.
Parameter value will start to blink, use joystick to alter value.
Press the button below □ to save the edited parameter.
Press the button below X to cancel editing without saving.

BACKLIGHT LEVEL
Values: 1-5
Set level of panel backlight in daylight mode.
1 is lowest intensity, 5 is the highest.

BACKLIGHT NIGHT COLOR
Values: GREEN, BLUE, RED, WHITE
Select color of backlight in nightlight mode

BACKLIGHT NIGHT LEVEL
Values: 1-3
Set level of panel backlight in daylight mode,
1 is lowest intensity, 3 is the highest.

TIMER AUTO-OFF
Values: OFF, 01-60 min
Set the time from last use to auto panel shutdown.
Set from 1-60 minutes in 5 minute steps (1 minute steps from 1 to 5 minutes) or OFF (panel will not turn off automatically)

UNIT TEMPERATURE
Values: CELSIUS (Default), FAHRENHEIT
Set the panel temperature displaying unit

WHEN RETRACT IS OUT
Values: NO WARNING (Default), WARNING EVERY 10sec
Select ‘WARNING EVERY 10sec’ for external buzzer or lamp
warning every 10 seconds when retract is out. This will activate
the internal relay for 0.2 seconds every 10 seconds while the
retract is out. See page 22 for buzzer connections.
<table>
<thead>
<tr>
<th>Alarm Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error shown in display</td>
<td>Motor Overcurrent</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Motor Overcurrent</strong></td>
<td>Motor must be serviced by authorized personnel, reset or PPC800 power OFF/ON.</td>
</tr>
<tr>
<td>Error shown in display</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Actuator Fault</td>
<td>Actuator not getting any power</td>
</tr>
<tr>
<td>High Oil Temp</td>
<td>Hydraulic oil temperature is higher than 75°C</td>
</tr>
<tr>
<td>Low Oil Level</td>
<td>Hydraulic oil level is low</td>
</tr>
<tr>
<td>Warning Return Filter</td>
<td>Return filter element required</td>
</tr>
<tr>
<td>Warning Pressure Filter</td>
<td>Pressure filter element required</td>
</tr>
<tr>
<td>Warning High Speed</td>
<td>Hydraulic AC motor power pack overtemp, higher than 120°C</td>
</tr>
<tr>
<td>AC Motor Over-temp</td>
<td>Hydraulic AC motor power pack overtemp, higher than 120°C</td>
</tr>
<tr>
<td>AC Motor Sensor Fail</td>
<td>AC Motor Sensor Fail</td>
</tr>
<tr>
<td>Temperature Warning</td>
<td>Temperature warning</td>
</tr>
<tr>
<td>Motor Overtemp</td>
<td>Motor Overtemp</td>
</tr>
<tr>
<td>VFD Warning</td>
<td>VFD Warning</td>
</tr>
<tr>
<td>VFD Not Ready</td>
<td>VFD Not Ready</td>
</tr>
<tr>
<td>Warning Low Voltage</td>
<td>Low voltage</td>
</tr>
<tr>
<td>Not Calibrated</td>
<td>Drive shaft not aligned</td>
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<tr>
<td>VFD Modbus Fault</td>
<td>PDC201 no Modbus communication</td>
</tr>
</tbody>
</table>
Observe PPC battery terminal polarity!

Sample S-link system
Measurements
Connections for optional external buzzer/audible alarm

External alarm buzzer
12V / 24V DC - max 0,5A

Supply +12V / 24V DC

(S-link)

Rear side of panel

Internal fuse/relay

Connections for optional external buzzer/audible alarm
Fill in the type, location and serial numbers of the S-link devices installed. Keeping this as a reference will make the setup procedure easier!

<table>
<thead>
<tr>
<th>S-link device (i.e. Thruster, AMS, PPC800 etc)</th>
<th>Location (Bow, Bow-STB, Stern, Stern-STB)</th>
<th>Serial number</th>
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