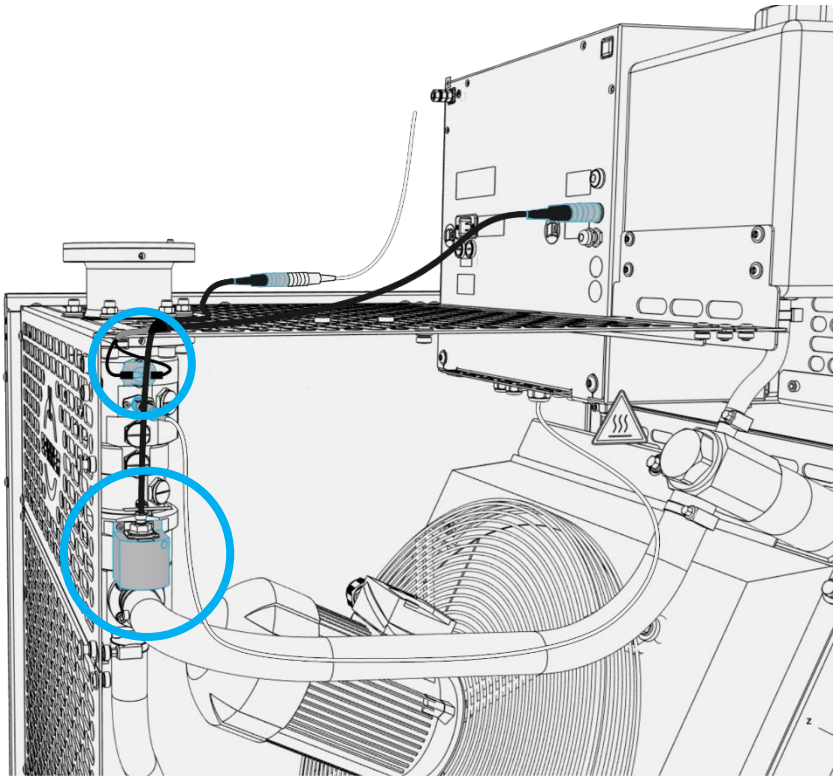
SPINNER | Installation Instruction | 39567A

Installing Float and Snap Disc Switch – 25 kW to 55 kW SmartLoads

Product Numbers BN 546404xxxxx, 546434xxxxx, 546435xxxx, 546437xxxxx, 546430xxxxx, 546439xxxxx
25 kW to 55 kW SmartLoads



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1 General information

Background
This installation instruction describes how to integrate the float switch into 25 kW to 55 kW SmartLoads and the belonging interlock loop. The procedure differs between legacy and current types.
The site will have to go off air for about 2 hours.

Actions
- Shut down transmitter and SmartLoad
- Open SmartLoad, reposition temperature sensor,
- Mount float switch, adapt wiring for interlock loop integration
- Reconnect, close, test system.

Qualification of personnel
Qualified technical personnel only

Affected parts
25 kW to 55 kW SmartLoads:
BN 546404xxxxx, 546434xxxxx, 546435xxxx, 546437xxxxx, 546430xxxxx, 546439xxxxx

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1.1 Safety signs and symbols

Safety signs are used on warning labels, stickers, in the product documentation and on the packaging of the product.

					
Warning! General hazard	Warning! Danger of electric shock	Warning! Hot surface	PE terminal	Earth	Warning! High weight
					
Warning! Non-ionised electromagnetic radiation	No access for persons with pacemakers	Use safety shoes	Use safety helmet	Use safety gloves	Observe product documentation

Signal words for hazard seriousness
Signal words are used on warning labels, stickers, in the product documentation, on specific danger spots and on the packaging of the product. They indicate the hazard seriousness in safety messages.

DANGER Indicates a hazardous situation conveying great risk which, if not avoided, will result in death or serious injury.
WARNING Indicates a hazardous situation conveying moderate risk which, if not avoided, could result in death or serious injury.
CAUTION Indicates a hazardous situation conveying minor risk which, if not avoided, may result in minor or moderate injury.
NOTICE Indicates the possibility of faulty operation that can damage the product.
It is essential to make sure that the signal words described here are always used only in connection with the related product documentation and the related product. The use of signal words in connection with unrelated products or documentation can result in misinterpretation and thus contribute to personal injury or material damage.

Before you start, ensure to read and understand the section safety messages and in particular chapter 1 "Safety" of this product manual. Only electrically skilled persons should install SPINNER dummy loads in accordance with the national safety and accident prevention regulations. Failure to observe could result in death or serious injury.

WARNING - Electric shock hazard
Electric shock can cause severe burns and fatal injuries.
Before you start ensure to disconnect your entire system from the power supply.
Utilize appropriate devices and methods to prevent accidental energizing.

WARNING - High leakage current
Connect at least 10 mm² PE conductor permanently to separate PE terminal before connecting mains connector.

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WARNING - Radio Frequency Hazard
Radio Frequency Power can cause burns, eye injuries and electrical shock.
Before connecting the RF cable, ensure to disconnect your entire system from the power supply. Utilize appropriate devices and methods to prevent accidental energizing.

Observe the attached safety data sheet of the coolant when filling up, emptying or deaerating the liquid cooling system or disposing of the coolant.

Wear eye protection

1.2 Required tools/materials

- Float Switch Installation Kit
- Screwdriver Torx TX30 & TX10
- Pipe wrench, open-end wrench, and spanner SW 11, 14, 24, 27 mm
- Knife, stripping tool, side cutter

1.3 Content of installation kit

Float Switch		Snap Disc Switch	
Adapter ring for new sensor position		Mounting plate for float switch	
Torx 10 screws M3x10 and M3x12		X-Cable for integration into interlock loop	
Cable ties & clamps			

Additional accessories for legacy SmartLoads:

Adapter plate for Sensor		Hollow screw for float switch	

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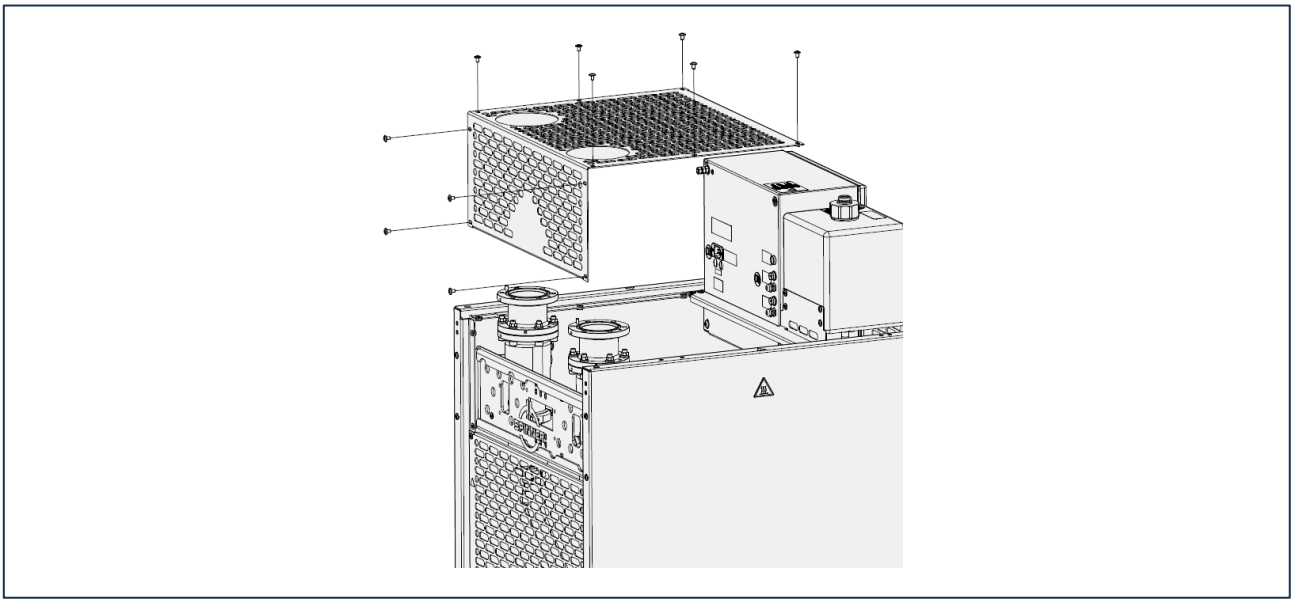
2 Preparations

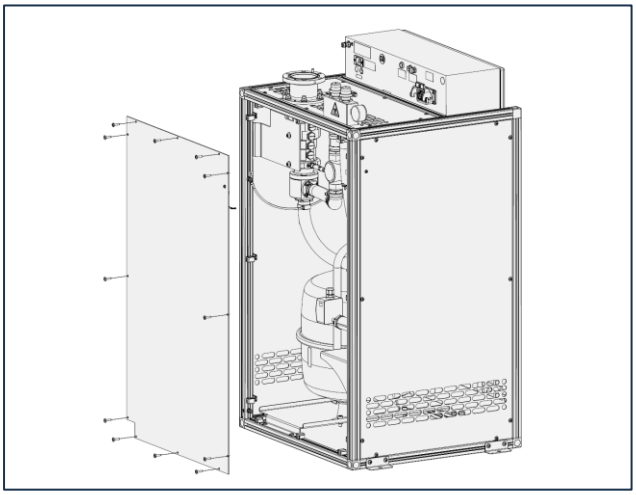
2.1 Shut down TX and SmartLoad

- Set transmitter control to local and switch the transmitter RF-output off.
  Make sure Transmitter GUI indicates: “Forward Power: 0”
- Switch off SmartLoad and unplug Mains.

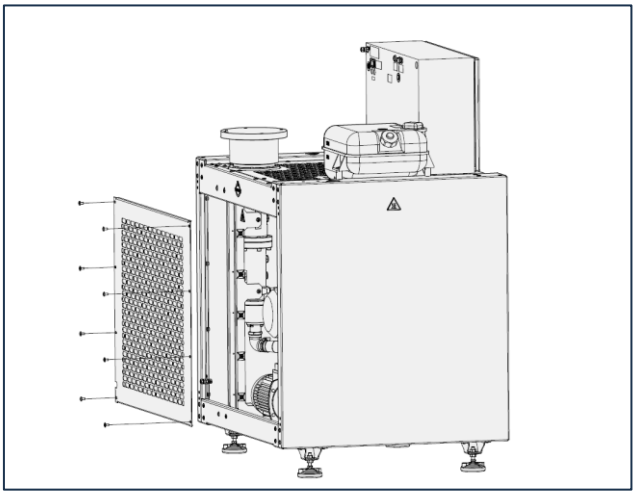
2.2 Open SmartLoad



25kW internal heat exchanger single & dual load: loosen 10 TX30 screws, lift cover and fix



All versions with **external** heat exchangers:
Loosen 9 TX30 screws. emove rear cover



50 kW internal heat exchanger:
Loosen 8 TX30 screws. Remove rear cover

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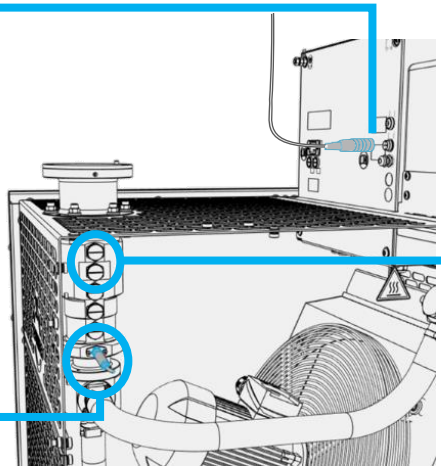
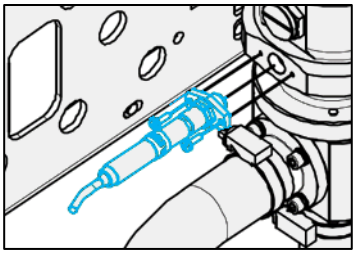
2.3 Unplug interlock cable, remove sensor, prepare for new sensor position

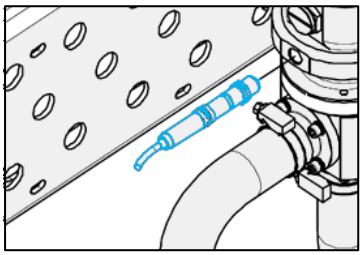
1) Unplug interlock cable from SmartLoad



2) Remove Sensor

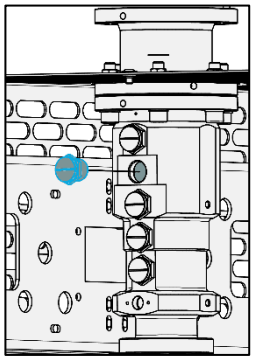


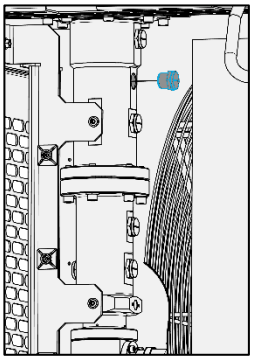
Current Versions:
Loosen 2 screws



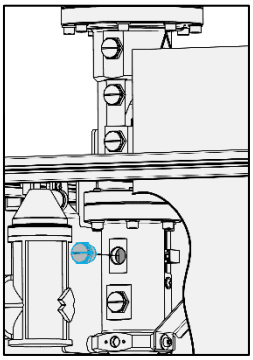
Legacy versions:
Twist sensor out, cut open cable ties if necessary

3) Prepare position for new sensor
Remove tuning screw





All 25 kW and 50 kW w/ internal heat exchanger:
4th tuning screw from below



50/55 kW external heat exchanger:
2nd screw from below

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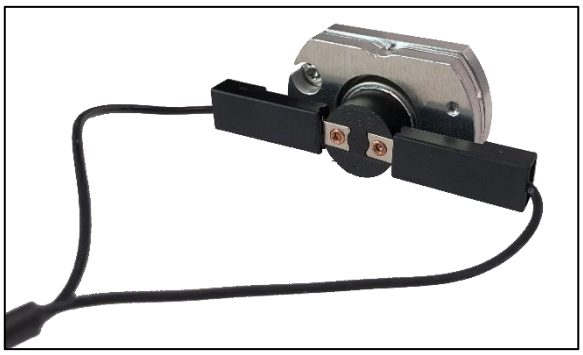
2.4 Testing the float switch

To make sure the float switch works in your specific configuration, it is imperative to conduct the following test. The procedures for reject and for station loads differ.

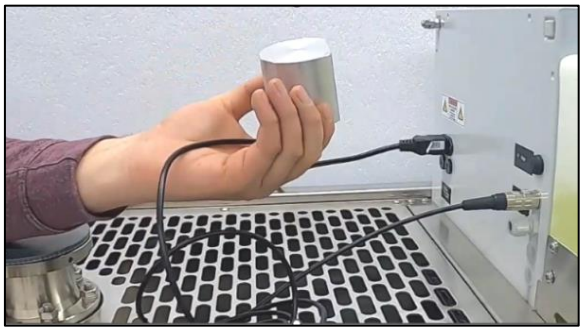
2.4.1 Test procedure for REJECT loads

- Connect x-cable with interlock cable, SmartLoad interlock input and float switch as shown on the next pages
- Also connect the snap disc switch to the X-cable
- Switch the SmartLoad on
- On the transmitter GUI: navigate to the "Device View", "Status" page

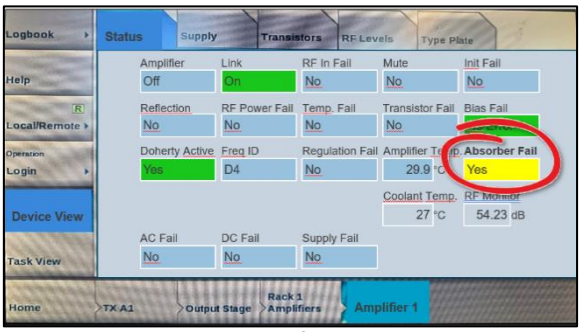


Connected snap disc switch. No polarity.

- Turn the float switch upside down



- Observe transmitter GUI.
- "Absorber Fail" should indicate "Yes" if float switch is upside down and "No" if float switch is the right way up



Transmitter GUI indicating float switch is working correctly if turned up side down

- If so: Test passed.
  If not: Please contact after-sales-service@spinner-group.com

- Switch SmartLoad off & unplug mains
- Unplug float switch & snap disc switch

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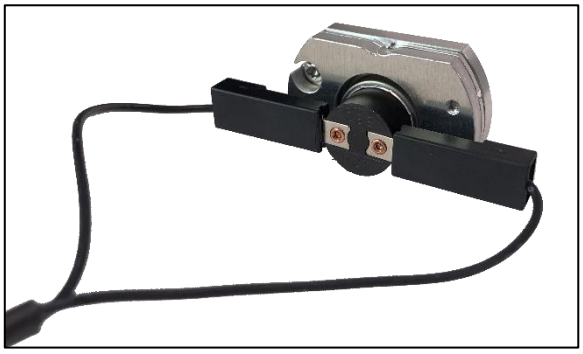
2.4.2 Test procedure for STATION loads

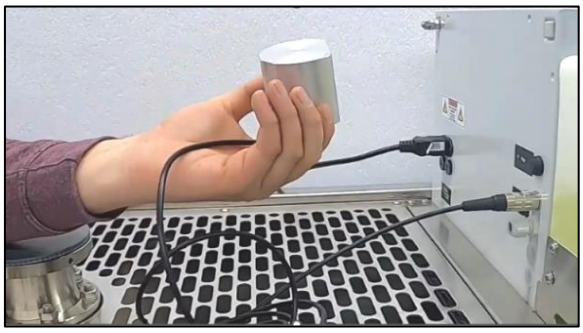
For this procedure the transmitter must be switched from antenna to station load.

- Connect x-cable with interlock cable, SmartLoad interlock input and float switch as shown on the next pages
- Connect the snap disc switch to the X-cable
- Switch SmartLoad on
- Double check transmitter GUI indicates: “Forward Power: 0”
- Switch transmitter from antenna to station load
- Transmitter GUI:
- Navigate to “Device View”, “TX”, “Active Exciter”, “Output”, “Overview” page
- “Loop Control” drop down: set to “Full”

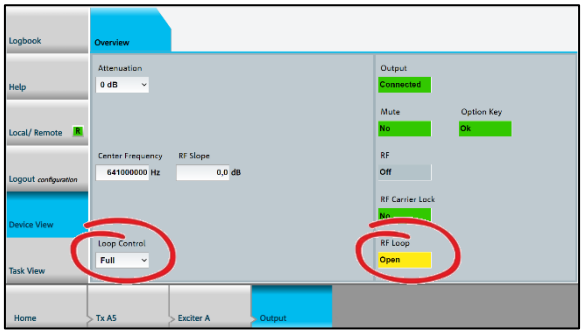


Connected snap disc switch. No polarity.

- Turn the float switch upside down



- Observe transmitter GUI.
- “RF Loop” should indicate:
- “Open” if float switch is upside down
- “Closed” if float switch is the right way up



Transmitter GUI indicating float switch is working correctly if turned up side down

- If so: Test passed.
  If not: Please contact after-sales-service@spinner-group.com

- Switch SmartLoad off & unplug mains
- Unplug float switch & snap disc switch
- Keep transmitter routed to station load for the functional test later on (see chapter 5)

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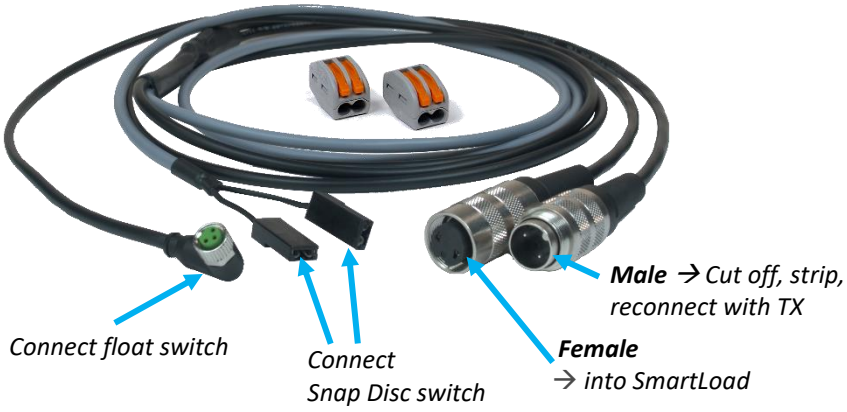
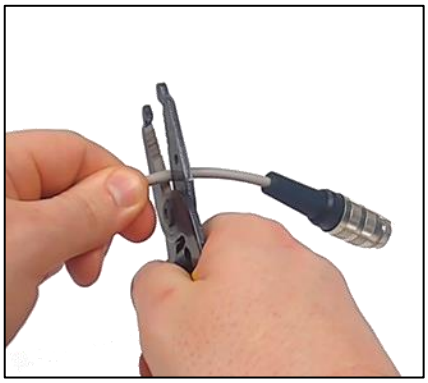
3 Special cases

3.1 Optional: Interlock loop rewiring

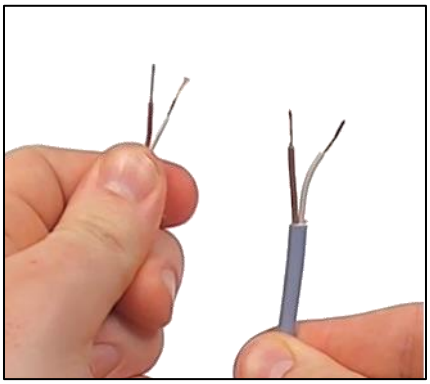
Applicable only if the interlock cable was directly wired into the electrical cabinet



1. Connect female plug of y-cable into interlock input port
2. Cut off wired interlock cable



3. X-cable: cut off male plug



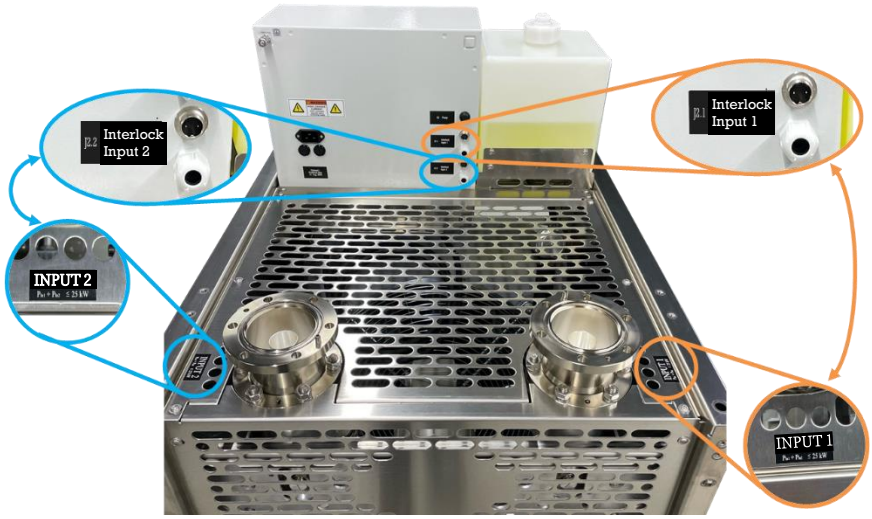
4. Strip open ends of interlock cable and x-cable

5. Connect strands of x-cable and interlock cable with cable clamps (polarity is neglectable)

3.2 Special case: SmartLoad with two RF inputs “dual load”

Make sure to match
RF “Input “1” / ”2” to
“Interlock Input “1” / ”2”.

Check labels next to RF input and interlock inputs:
E.g., the float switch at RF input “1”, should be connected to “Interlock Input 1” by the x-cable.



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4 Installation

4.1 Install float switch, reposition sensor, connect with interlock loop

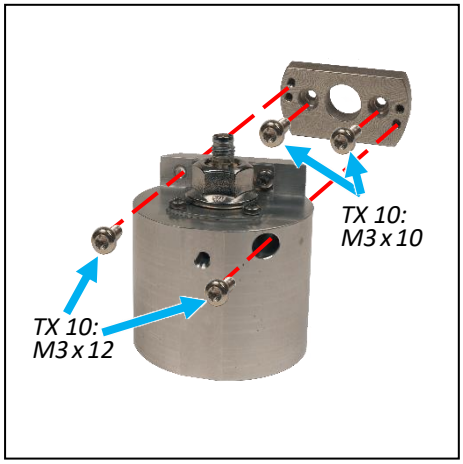
4) Integrate switches into interlock loop

Float and Snap Disc switch Connectors:
Guide through perforated plate near RF input.
Tighten union nut

Snap disc switch connectors: no polarity

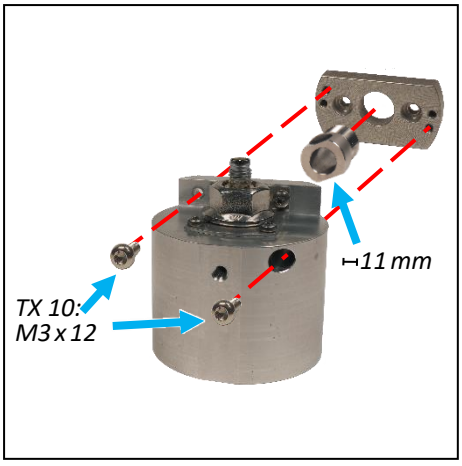
1) Mount float switch

Have test in 2.4 successfully performed before installing!



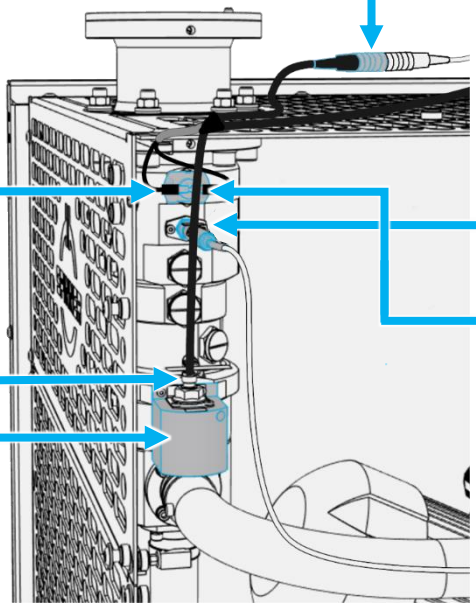
Current Versions

1. *Fix mounting plate to former sensor position (2 screws M10)*
2. *Fix float switch to mounting plate (2 screws M12)*



Legacy Versions

1. *Fix mounting plate with hollow screw into former sensor position to the load element*
2. *Fix float switch with two screws M12*



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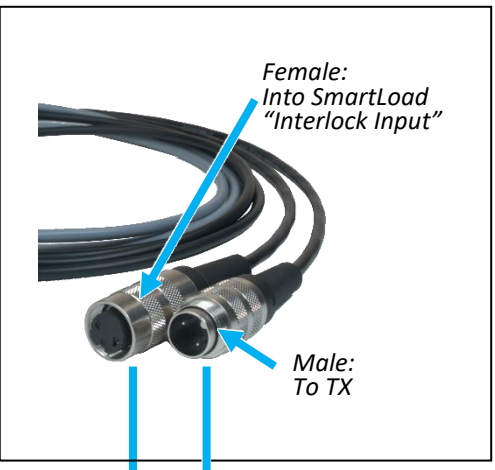
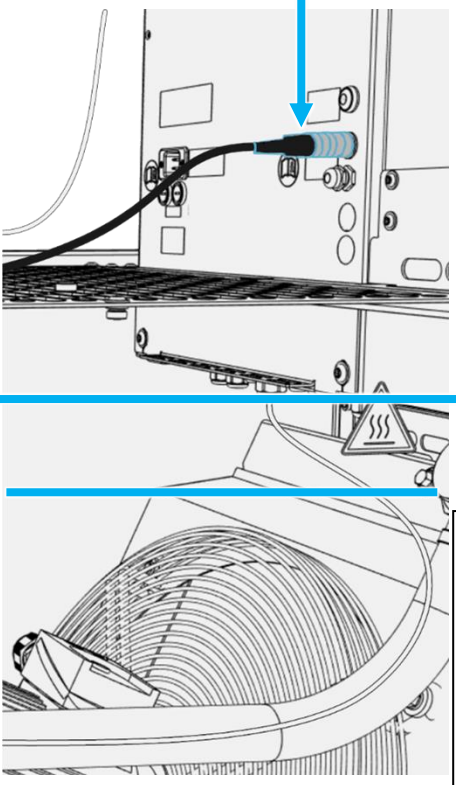
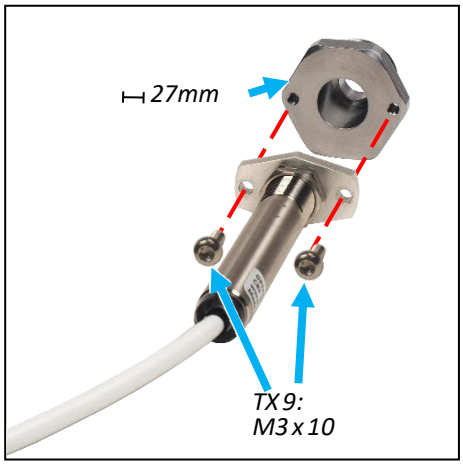


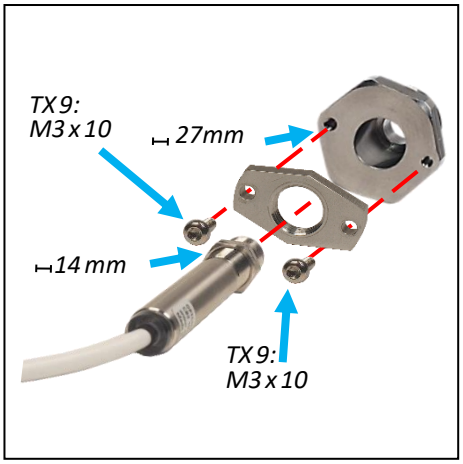


2) Install sensor at new position



Current Versions

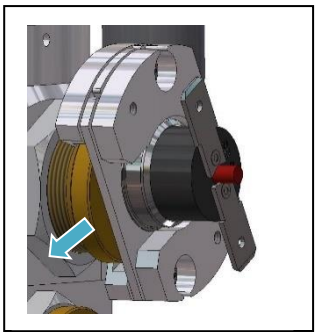
1. *Screw adapter ring completely into open tuning port**
2. *Fix adapter plate of sensor with two screws to adapter ring*



Legacy Versions

1. *Screw adapter ring completely into open tuning port**
2. *Screw adapter plate onto sensor housing. Sensor to stick out from adapter plate by 6 - 10 mm (~1/4"). Loosening the slim counter nuts could be helpful. Fix them once the right position is found.*
3. *Fix adapter plate with screws to adapter ring as for "current versions"*

3) Mount snap disc switch



*Slide snap disc switch onto the round head of the 5th tuning screw (highest position). Fix w/ integrated screws **50/55 kW external** heat exchanger: 5th screw is outside housing*

** Counter nut of previous tuning screw not needed.*

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5 Functional test

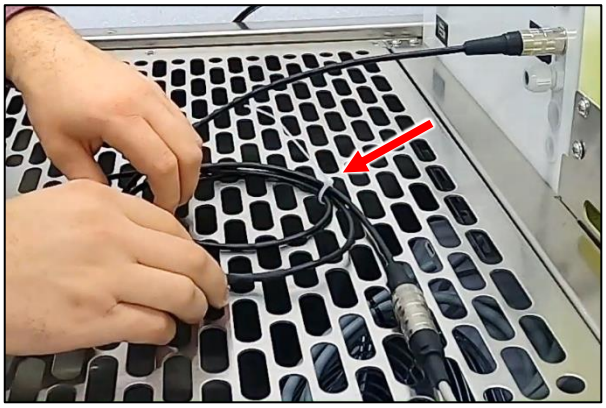
Perform functional test as described in the videos and the service notice on our website:
https://www.spinner-group.com/smart-load-service.com

Send the checklist in the service notice with your results back to us:
after-sales-service@spinner-group.com

6 Finishing up

6.1 Fix cables / strain relief

- Fix lose cable of the sensor inside housing with cable ties
- Pull out x-cable a little to minimize excess cable in the housing. Roll the cable up and create strain relief with cable ties.
- Create strain relief for interlock cable from the coupling to the TX according to your local setup



6.2 Close housing

- Reattach the covers removed in 2.2

6.3 Getting back on air

- Reattach power cord and switch SmartLoad back on. Wait for the green signal to light up
- Power TX back up to nominal power.
- Set TX control back to “remote”

Also watch the explaining video:
https://www.spinner-group.com/smart-load-service

Questions? Contact: after-sales-service@spinner-group.com