

ISAR SCe-EM MAINTENANCE & REPAIR



Wilo-ISAR MODH1-2CH1-L-****/SCe-EM



Wilo-ISAR MODH1-3CH1-L-****/SCe-EM

Maintenance & Repair

The equipment referred to in the manual are from the ISAR range of cold water booster sets. The range consists of pre assembled baseplate mounted horizontal multistage pumps in either 2 or 3 configuration. These are connected in a parallel arrangement with independent isolation valves. The control is via a single control panel designation SC-e from a single point pressure transducer mounted on the discharge manifold.

Repairs to the equipment referred to in these instructions should only be carried out by qualified personnel.

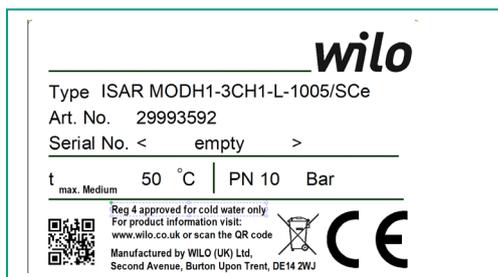
The equipment referred to in this manual is subject to voltages higher than safe Touch voltage.



The voltage supply to this equipment is 1~230VAC . Electric shock risk present. Only qualified personnel to carry out repairs to this equipment.

Identification

The Booster sets are built and tested and identified by a Unique ART serial number. This identification is located on the end of the base plate by the highest pump number.



The Type refers to the booster model.

Art is the Wilo Identification number for the model Type

ISAR = Cold water booster set series

MODH1= -2CH1

3 = number of pumps fitted to the booster set.

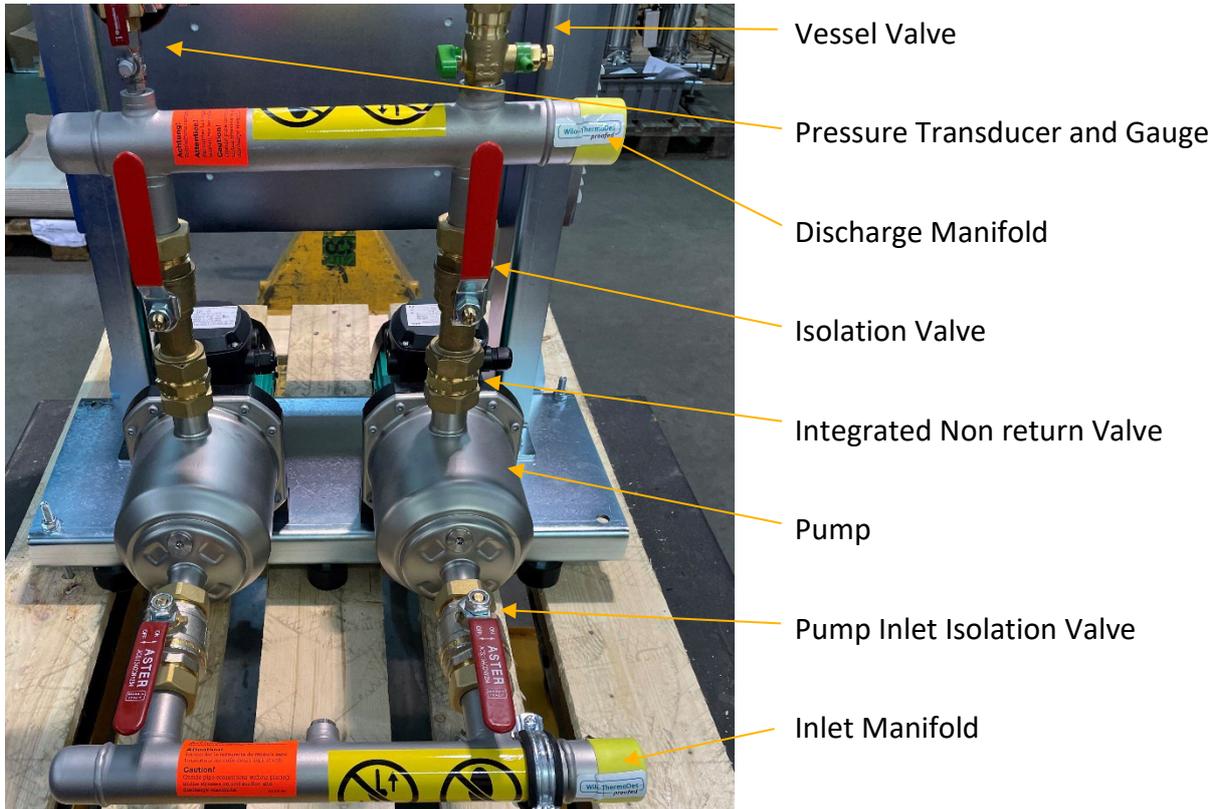
SCe = the control panel fitted to the booster set.

-EM = Input voltage requirements, EM = 1~230V DM= 3~400V

Serial number is the unique number that identifies each booster set this number and also identifies the production date by year and month.

General layout

The booster set is assembled on a common base plate and each pump has:



Model dependant there may be slight variations.

Control Panel

The control panel receives a signal from the pressure transducer mounted on the discharge manifold, Processes the signal and controls the pumps speed either by DC voltage on pumps fitted with integrated inverters or a frequency change by the integrated inverter fitted within the control panel.

SC-E/EM 1 ~230 V supply



Please note there is 1 VLT Microdrive per pump

SC-E control Panel facia



Tools

- The following are a recommended tool list.
- 2 Pole voltage indicator
- Proving unit
- Electrical Lock off kit.
- Multimeter
- Control Panel Key
- Insulated Screw drivers
- Spanner 13mm 17mm 19mm
- 5.5mm insulated nut runner.
- Allen keys
- Pressure Gauge

Commissioning

Please refer to commissioning documentation.

Maintenance

It is recommended that the cold water booster set is subject to a maintenance schedule. The Checklist for Wilo Maintenance Contracts is recommended.

Confirm with site that Pressure set point is suitable for the system and that no issues have been reported.

Vessel Pre-Charge. Isolate vessel, drain fluid and check pre charge, adjust to set point less 10%.

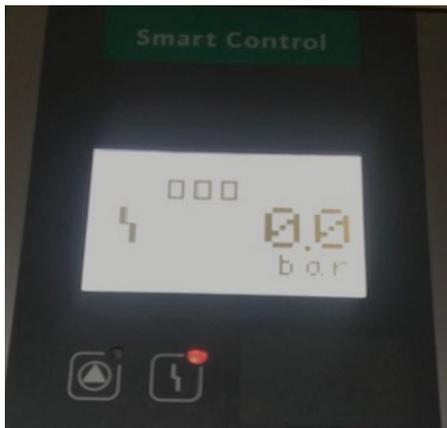
Isolation Valves- These must be “exercised” open and closed to ensure valves do not stick and are free to move. Please note Hardwater areas may require this carried out on a more frequent basis.

Non return Valves- Pumps that appear to be operating whilst not selected or continuous running of the set may indicate failed Non return valves.

Pump operation- Visual check to confirm pumps are not leaking. Clean motor fan cover of debris.

Low water pressure switch- Whilst set is running, close inlet valve to booster ser. The low water alarm E0.62 will indicate. Once alarm has indicated, open the valve and the alarm will clear.

Enter and record the operating Data from Menu 4.0.0.0.



Error Codes

The SC-E control panel will in the event of a fault, generate and indicate a fault code. The presence of a fault is indicated by the error icon.

→ There will also be a short indication of the error code

Code	Error description	Causes	Remedy
E40	Sensor faulty	Pressure sensor defective No electrical connection to the sensor	Renew sensor Repair electrical connection
E60	Maximum pressure exceeded	The output pressure of the system has risen above the value set in menu 5.4.1.0 (e.g. due to a controller fault)	Check controller function Check installation
E61	Pressure below minimum value	The output pressure of the system has dropped below the value set in menu 5.4.2.0 (e.g. due to a pipe burst)	Check whether the set value corresponds to local conditions Check pipe and repair if necessary
E62	Low water	Protection against low water level has tripped	Check inlet/preliminary tank; pumps restart automatically
E80.1 – E80.4	Fault pumps 1...4	Winding overtemperature (WSK/PTC) Motor protection has tripped (overcurrent or short-circuit in the supply line) Collective fault signal of the pump/frequency converter has been activated (only SCe version)	Clean cooling fins; motors are designed for an ambient temperature of +40 °C (see also installation and operating instructions of the pump) Check the pump and supply line (in accordance with the installation and operating instructions of the pump) Check the pump and supply line (in accordance with the installation and operating instructions of the pump)
E82	Fault frequency converter	Frequency converter has signalled a fault Motor protection of frequency converter has tripped (e.g. short-circuit of FC mains power cable; overload of the connected pump)	Read off fault on frequency converter and act in accordance with FC operating instructions Check mains power cable and repair it if necessary; check pump (in accordance with the installation and operating instructions of the pump)

→ E0.40 Requires Sensor replacement. Pressure Transducer ART 2085909

Isolate Electrical supply at local isolator. Recommend the use of LOTO equipment. Isolate Transducer at ¼ Turn lever valve.



Open Brass drain valve to relieve pressure from sensor. Unscrew plug from sensor. Ensure cable is secured away and free from water contact. Using suitable hand tool, remove pressure transducer from Fitting. Clean thread sealant from ¼” BSP thread on 4 way fitting. On replacement transducer, fill thread with WRAS approved sealant, hand tighten transducer into fitting, tighten using suitable hand tool. Refit plug onto transducer and open ¼ turn valve. Remove electrical isolation and energise control panel. Error code 40 will clear but will be held in the memory.

→ E0.60 maximum pressure exceeded.

Pressure in system has exceeded the setting in Menu 5.4.1.0. This setting is factory set at 150% of Theoretical value 1.2.1.1. Check setting 5.4.1.0 and adjust if required. Minimum recommended setting is +10% of operating setpoint. Open system outlet to lower pressure in system and check operation of booster set. Isolate Expansion vessel at vessel valve.



Open drain cock and empty vessel of fluid. Using pressure gauge check vessel pre charge and adjust to 10% of set point using Nitrogen. Close drain valve and open vessel valve.

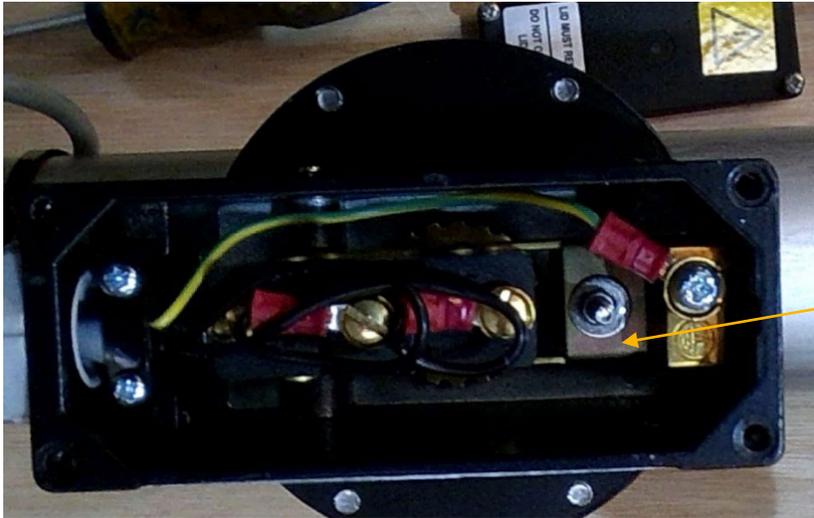
→ E0.61 Pressure below minimum value.

Check value in 5.4.2.0, factory preset 0%. Check setting meet the requirement of the system. Also check setting of 5.4.3.0 and 5.4.5.0 are adjusted to customer requirement. E0.61 can be used to prevent flooding.

→ E0.62 Low water protection.

When E0.62 is triggered,

- 1) Check cold water storage tank has adequate water level. If tank is empty, check incoming supply is adequate, if no incoming supply contact local water authority.
- 2) If tank is full, remove lid from pressure switch and remove red insulation cover.



Range adjustment nut
5.5mm AF

Using a 5.5mm AF insulated nut runner, turn range adjustment nut clockwise until Error clears.

Replace red cover and lid.

- 3) If the pressure switch is found defective, The switch will need to be replaced.
Electrically isolate the control panel, Recommend the use of LOTO at electrical supply.
Close hydraulic valves between booster set and cold water storage tank.
Remove lid from pressure switch.
Remove cables from switch, Common and N/C.
Remove cable from switch via gland
Use of hand tool, unscrew pressure switch from Inlet manifold.
Clean ¼" BSP threaded socket.
New pressure switch threads to be cleaned and threads sealed with WRAS approved sealant.
Screw pressure switch into port.
Refit cable and gland and ensure gland is tight.
Refit cable to switch, ensure connections are correct.
Remove electrical isolation and set pressure switch as 2).

→ E0.81-E.084

E0.81 through to E0.84 indicate errors with pump 1 to 4. Please check individual pump displayed if fitted. Booster set fitted with VLT microdrives, this error code relates to the drive.

→ E0.82

E0.82 check individual drive for the error code. Information regarding VLT Microdrive is found at Danfoss.com/download/drives/MG02BC02

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