

Assembly Instructions M8095-EN

Spare part unit board GIF-51 (O/ID T25240-X, T27401-X)

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Purpose

Replacement of control unit board GIF-51 (A 4)

Precondition



WARNING!

Danger for unauthorized persons!

Conversion work may only be carried out by specialist staff who have been trained accordingly.

Therefore:

- Keep unauthorized persons away from the work area.



NOTE!

Knowledge of the Instruction Manual is a precondition for carrying out conversion work on the unit.

Procedure



DANGER!

Danger to life caused by electric current!

Touching conductive parts causes a direct danger to life.

Therefore:

- For all work on the electrical system, for maintenance, cleaning or repair work, disconnect from the mains or disconnect all phases of the external power supply and secure them against being switched on again. Check unit is isolated from power supply.



WARNING!

Danger of crushing due to rolling away or tipping

With an uneven floor or when the castors are not locked, there is a danger that the unit tips over or rolls away causing crushing.

Therefore:

- Only install the unit on an even floor.
- Ensure that the castors are locked.

Product group Thermo-5

1. Switch off master switch and disconnect from mains supply.
2. Loosen the screws in the front panel and hinge it down.
3. Proceed as follows in order to remove the GIF-51 (A 4):
 - Remove all connectors.
 - Remove the flexes that are led through current transformers (TA 1.1, 1.2, 1.3) at the contactor or terminal:

Cable routing (from → to)		Unit type
KM 1	X 86	Housing size 1+2, 8 kW, 400/460 V
KM 1	XT 2	Housing size 1, 8 kW, 210 V
KM 1	XT 2	Housing size 2, 16 kW, 400/460 V
XT 2	V x.x	Housing size 2, 8+16 kW, 210 V
KM 1	FS 4	Housing size 3, Pump type G_, L_, 6_, 8_

- Remove the screws on the sides of the board.
 - On oil unit unplug the printed circuit board level measuring (A 10).
4. Proceed as follows in order to fit the new GIF-51 (A4):
 - On oil unit insert the printed circuit board level measuring (A 10) into new GIF-51.
 - Fit the GIF-51 and fix with the screws.
 - Route the wires through current transformers (TA 1.1, 1.2, 1.3) and connect them (→ Fig. 1).

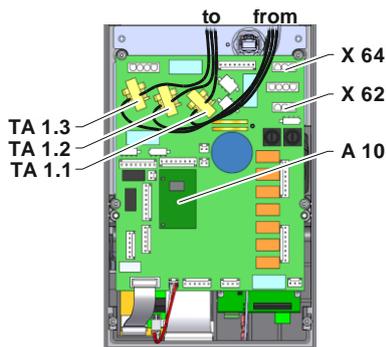


Fig. 1: Cable routing

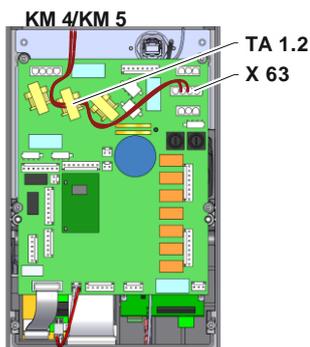


Fig. 2: Cable routing housing size 3 pump G_, L_, 6_, 8_

Cable routing (from → to)		Unit type
KM 1	X 86	Housing size 1+2, 8 kW, 400/460 V
KM 1	XT 2	Housing size 1, 8 kW, 210 V
KM 1	XT 2	Housing size 2, 16 kW, 400/460 V
XT 2	V x.x	Housing size 2, 8+16 kW, 210 V
KM 1	FS 4	Housing size 3, Pump type G_, L_, 6_, 8_

- For housing size 3, pump type G_, L_, 6_, 8_ additionally lead wires from cable connector (X 63) through current transformer (TA 1.2) and connect to contactor KM 4/A1, KM 5/A1 (→ Fig. 2).
- Connect all connectors.
- Connect main pump cable (X 62/X 64):
 - Voltage 200–220 V → Slot X 62 (triangle)
 - Voltage 380–480 V → Slot X 64 (star)

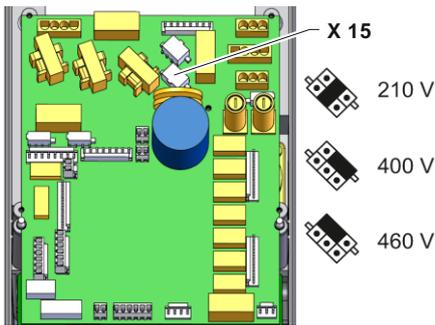


Fig. 3: Voltage selection GIF-51

5. Voltage selection at X 15 with bridge plug (O/ID T21608):
 - Verify mains voltage (→ specification on the nameplate)
 - Place bridge according (→ Fig. 3)



ATTENTION!
Danger if wrongly connected

Wrong voltage selection or wrong connections can damage the unit

Therefore:

- Thoroughly check connections and voltage selection

6. Close and secure the front panel.
7. Reconnect mains plug and switch on main switch.



NOTE!

The unit will maybe perform an automatic software update.



NOTICE!

If configuration is incomplete, the warning text "Wrong entry" will be displayed. By cancelling the configuration, the user can exit configuration mode and subsequently conduct a Reset complete.

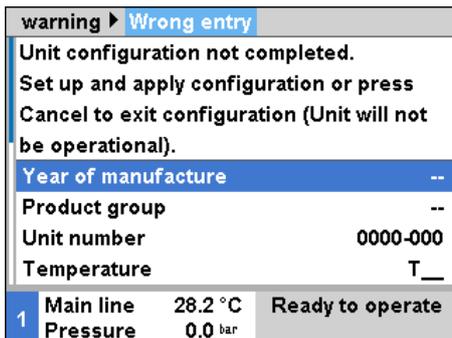


Fig. 4: Input window configuration

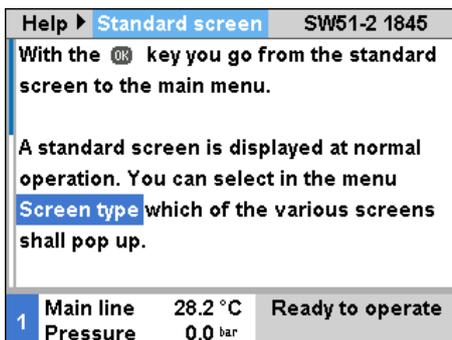


Fig. 5: Software version display

8. Checking the software version



NOTICE!

You can verify the currently installed software version using the  button on the basic screen. The software version is indicated in the top right corner (→ Fig. 5).

Software version designation:

Ex. **SW51-2 18 45 A**

↑

↑

↑

↑

↑

↑

Index (optional)
Calendar week
Year

Service ▶ Configuration			
Rated current pump 50Hz		2.6 A	
Rated current pump 60Hz		2.6 A	
Pump performance		1.0 kW	
Connections		9.1 kW	
Cooling capacity	<	30 kW	
Reference temp. cooling		60 K	
Code current measuring		1	
Reset complete			
1	Main line	28.2 °C	Ready to operate
	Pressure	0.0 bar	

Fig. 6: Reset complete

Service ▶ Configuration			
Product group			TG
Unit number		1110-001	
Year of manufacture		2020	
Temperature		160	
Hydraulic system		Z	
Housing size		1	
Heating type		8	
Pump type		4M	
1	Main line	28.2 °C	Ready to operate
	Pressure	0.0 bar	

Fig. 7: Configuration

warning ▶ Wrong entry			
Unit configuration not completed. Set up and apply configuration or press Cancel to exit configuration (Unit will not be operational).			
Year of manufacture			--
Product group			--
Unit number		0000-000	
Temperature		T_	
1	Main line	28.2 °C	Ready to operate
	Pressure	0.0 bar	

Fig. 8: Input window configuration

9. Carrying out a Complete reset

(Software version prior to SW51-1 0849B)

→ Service \ Support using "Support" user profile

(From software version SW51-1 0849B onwards)

→ Service \ Configuration using "Support" user profile



NOTICE!

From software version SW51-1 0916 onwards, the Service \ Configuration menu is accessed using the code 1???

10. Configure unit

(to Software Version SW51-2 1431)

→ Service \ Configuration menu using the "Support" user profile.



NOTICE!

When configuring note the following:

- Select product group according to table below
- Check data on the nameplate
- Read appendix of Operating Manual (for special versions)

Product group	Product type
TG	Thermo-5 temperature control unit
TR	Treat-5 water treatment unit
CL	Clean-5 cleaning unit

(from Software Version SW51-2 1449)



NOTICE!

As of software SW51-2 1449, the configuration is requested after power ON automatically via the input window (→ Fig. 8).

Service ▶ Configuration			
! Enter the following values only if configuration off above parameters can't follow automatically!			
Special device type OEM			E
Special device OEM version			1
Limit temperature		160 °C	
Heat transfer medium		Water	
1	Main line	25.0 °C	Ready to operate
	Pressure	0.8 bar	

Fig. 9: Configuration special devices

Additionally with special devices

- Parameter **Special device type OEM** and **Special device OEM version** under **Service / Configuration** as stated on rating plate.

Exa. device type **HB160ZM1LE1**



- Check that the unit is free of pressure (→ Pressure gauge rear of unit).

- Calibrating the unit



NOTICE!

A quality check can be carried out if required. During the automatic check, the most important measurements of the temperature control unit can be compared. Points 13–18 are omitted when the automatic check is carried out.

Requirement:

- Software version >SW51-2_1540 is installed.
- Checking device HB-TP180/200 for heating unit, proceed according to the operating instructions for HB-TP180/200 (O8354-X).

13. Calibrate the pressure sensor

with pressure sensor system (BP 1)

Service ▶ Calibrating ▶ Pressure		
Type of pressure sensor		0-20
Pressure sensor 1 offset	0.0	bar
Pressure sensor 1 ascent c.	0.0	%
Pressure sensor 2 offset	0.0	bar
Pressure sensor 2 ascent c.	0.0	%
Pressure sensor filter		2 s
1 Main line	28.0 °C	Ready to operate
Pressure	0.0 bar	

Fig. 10: Calibrate the pressure sensor 1

- Read off the current **System pressure actual value** under **Display \ Actual value**.
- Set the parameter **Pressure sensor 1 offset** under **Service \ Calibrating \ Pressure** according to the following calculation:
 → $\text{Pressure sensor 1 offset}_{\text{new}} = \text{Pressure sensor 1 offset}_{\text{current}} - \text{System pressure actual value}_{\text{current}}$

with pressure sensor main line (BP 2)

Service ▶ Calibrating ▶ Pressure		
Type of pressure sensor		0-20
Pressure sensor 1 offset	0.0	bar
Pressure sensor 1 ascent c.	0.0	%
Pressure sensor 2 offset	0.0	bar
Pressure sensor 2 ascent c.	0.0	%
Pressure sensor filter		2 s
1 Main line	28.2 °C	Ready to operate
Pressure	0.0 bar	

Fig. 11: Calibrate the pressure sensor 2

- Read off the current **Main line pressure** under **Display \ Actual value**
- Set the parameter **Pressure sensor 2 offset** under **Service \ Calibrating \ Pressure** according to the following calculation:
 → $\text{Pressure Sensor 2 offset}_{\text{new}} = \text{Pressure Sensor 2 offset}_{\text{current}} - \text{Main line pressure}_{\text{current}}$

14. Check calibration pressure sensor

- Parameter **System pressure actual value** resp. **Main line pressure** under **Display \ Actual value** must be $0 \text{ bar} \pm 0,1$.
- If this is not the case, item calibration pressure sensor must be repeated.



ATTENTION!

Risk of incorrect calibration!

False calibrations can lead to faults with the unit.

Therefore:

- Check the calibrations.

Service ▶ Calibrating ▶ Flow rate		
Tolerance pump condition		30 %
Flow rate internal offset	0.0	$\frac{L}{min}$
Flow rate internal ascent corr.	0.0	%
Flow rate internal filter	10	s
Flow rate calibration		OFF
1	Main line Pressure	28.2 °C 0.0 bar
		Ready to operate

Fig. 12: Calibrating the flow rate

Service ▶ Calibrating ▶ Flow rate		
Tolerance pump condition		30 %
Flow rate internal offset	0.0	$\frac{L}{min}$
Flow rate internal ascent corr.	0.0	%
Flow rate internal filter	10	s
Flow rate calibration		ON
1	Main line Pressure	28.2 °C 0.0 bar
		Ready to operate

Fig. 13: Calibrating the flow rate

15. Flow rate calibration

(Software versions prior to SW51-1 0849B)

- Operate unit in regular mode at 40 °C for at least 10 minutes.
- Set **Flow rate internal offset** parameter in **Service \ Calibrating \ Flow rate** internally to "5 L/min".
- Close shut-off valve between main or return line and wait for 1 minute.
- Note current **Flow rate**.
- Set **Flow rate internal offset** according to the following calculation:
→ New **Flow rate internal offset** = 5 – current **Flow rate**
- Open shut-off valve.

(From software version SW51-1 0849B onwards)

- Operate unit in regular mode at 40 °C for at least 10 minutes.
- **Only for water units:**
If available, set **Pressure relief with unit OFF** parameter in **Setting \ Miscellaneous** to "OFF".
- Switch off unit using  button and wait at least 10 seconds.
- Set **Flow rate calibration** parameter in **Service \ Calibrating \ Flow rate** internally to "ON".
→ The flow rate is calibrated automatically.
- **Only for water units:**
If available, set **Pressure relief with unit OFF** parameter in **Setting \ Miscellaneous** to "ON".
- Switch on the unit using the  key.

16. Check flow rate calibration:

- After calibration, run the unit for at least 5 minutes at 40 °C in normal mode.
- Close shut-off valve between feed and return lines.
- Flow rate switches to 0 L/min and alarm indication ‚Flow rate zero’ is given.



NOTE!

The alarm message ‚Flow rate zero’ is delayed in time.

- If this is not the case, repeat the flow rate calibration.



ATTENTION!

Risk of incorrect calibration!

False calibrations can lead to faults with the unit.

Therefore:

- Check the calibrations.

17. Acknowledge alarm and open shut-off valve.

18. Check unit functions.

19. Switch the unit off by press the  key.

Product group Treat-5 and Clean-5

1. Main switch off, remove the plug from the mains and empty the unit.
2. Loosen the screws in the front panel and hinge it down.
3. Proceed as follows in order to remove the GIF-51 (A 4):
 - Remove all connectors.
 - Remove screws on the sides of the board.
 - Unplug the printed circuit board level measuring (A 10)

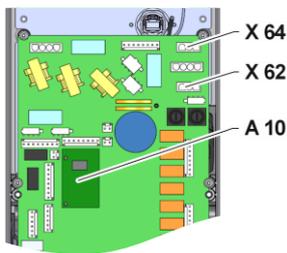


Fig. 14: Front panel

4. Change unit board GIF-51 (A 4):
 - Remove the printed circuit board level measuring (A 10) and plug in on the new GIF-51.
 - Install new GIF-51 and fasten it with screw.
 - Connect plug connections.
 - Connection main pump cable (X 62/X 64):
 - Voltage 200–220 V → Slot X 62 (triangle)
 - Voltage 380–480 V → Slot X 64 (star)

5. Voltage selection at X 15 with bridge plug (O/ID T21608):
 - Verify mains voltage (→ specification on the nameplate)
 - Place bridge according (→ Fig. 15)

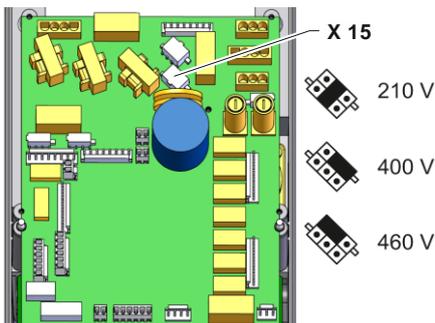


Fig. 15: Voltage selection GIF-51



ATTENTION!

Danger if wrongly connected

Wrong voltage selection or wrong connections can damage the unit

Therefore:

- Thoroughly check connections and voltage selection

6. Close and secure the front panel.

7. Reconnect mains plug and switch on main switch.



NOTE!

The unit will maybe perform an automatic software update.

warning ▶ Wrong entry		
Unit configuration not completed. Set up and apply configuration or press Cancel to exit configuration (Unit will not be operational).		
Year of manufacture	--	
Product group	--	
Unit number	0000-000	
Temperature	T_	
1 Main line	28.2 °C	Ready to operate
Pressure	0.0 bar	

Fig. 16: Input window configuration



NOTICE!

If configuration is incomplete, the warning text "Wrong entry" will be displayed. By cancelling the configuration, the user can exit configuration mode and subsequently conduct a Reset complete.

8. Checking the software version



NOTICE!

You can verify the currently installed software version using the button on the basic screen. The software version is indicated in the top right corner (→ Fig. 17).

Help ▶ Standard screen SW51-2 1845		
With the key you go from the standard screen to the main menu.		
A standard screen is displayed at normal operation. You can select in the menu Screen type which of the various screens shall pop up.		
1 Main line	28.2 °C	Ready to operate
Pressure	0.0 bar	

Fig. 17: Software version display

Software version designation:

Ex. SW51-2 18 45 A

9. Carrying out a complete reset

→ **Service \ Configuration** using "Support" user profile



NOTICE!

From software version SW51-1 0916 onwards, the **Service \ Configuration** menu is accessed using the code **1???**.

Service ▶ Configuration		
Pump pressure 60Hz	68 m	
Rated current pump 50Hz	1.5 A	
Rated current pump 60Hz	1.5 A	
Pump performance	0.5 kW	
Connections	0.6 kW	
Code current measuring	1	
Factor tank volume	0.070 $\frac{1}{mm}$	
Reset complete		
1 Filling vol.	1.7 L	Ready to operate
Pressure	0.0 bar	

Fig. 18: Complete reset

Service ▶ Configuration			
Product group		TG	
Unit number		1110-001	
Year of manufacture		2020	
Temperature		160	
Hydraulic system		Z	
Housing size		1	
Heating type		8	
Pump type		4M	
1	Main line	28.2 °C	Ready to operate
	Pressure	0.0 bar	

Fig. 19: Configuration

warning ▶ Wrong entry			
Unit configuration not completed. Set up and apply configuration or press Cancel to exit configuration (Unit will not be operational).			
Year of manufacture		--	
Product group		--	
Unit number		0000-000	
Temperature		T__	
1	Main line	28.2 °C	Ready to operate
	Pressure	0.0 bar	

Fig. 20: Input window configuration

Service ▶ Calibrating ▶ Pressure			
Type of pressure sensor		0-20	
Pressure sensor 1 offset		0.0 bar	
Pressure sensor 1 ascent c.		0.0 %	
Pressure sensor 2 offset		0.0 bar	
Pressure sensor 2 ascent c.		0.0 %	
Pressure sensor filter		2 s	
1	Main line	28.2 °C	Ready to operate
	Pressure	0.0 bar	

Fig. 21: Calibrate the pressure sensor 2

10. Configure unit

(to Software Version SW51-2 1431)

→ Service \ Configuration menu using the "Support" user profile.



NOTICE!

When configuring note the following:

- Select product group according to table below
- Check data on the nameplate
- Read appendix of Operating Manual (for special versions)

Product group	Product type
TG	Thermo-5 temperature control unit
TR	Treat-5 water treatment unit
CL	Clean-5 cleaning unit

(from Software Version SW51-2 1449)



NOTICE!

As of software SW51-2 1449, the configuration is requested after power ON automatically via the input window (→ Fig. 20).

11. Calibrate the pressure sensor

- Read off the current **Main line pressure** under **Display \ Actual value**
- Set the parameter **Pressure sensor 2 offset** under **Service \ Calibrating \ Pressure** according to the following calculation:

→ **Pressure Sensor 2 offset new** = **Pressure Sensor 2 offset current** – **Main line pressure current**

12. Check calibration pressure sensor

- Parameter **System pressure actual value** resp. **Main line pressure** under **Display \ Actual value** must be 0 bar ± 0,1.
- If this is not the case, item calibration pressure sensor must be repeated.



ATTENTION!

Risk of incorrect calibration!

False calibrations can lead to faults with the unit.

Therefore:

- Check the calibrations.

13. Check unit functions.

14. Switch the unit off by press the  key.

Parts list

Pos	Description	O/ID	O/ID				
			T27401	T27401-1	T27401-2	T25240	T25240-1
			Pcs	Pcs	Pcs	Pcs	Pcs
01	Unit board GIF-51	T27400	1	-	-	1	-
02	Unit board GIF-51 finished	T27400-1	-	1	-	-	1
03	Unit board GIF-51 UL	T27400-2	-	-	1	-	-
04	Plug jumper voltage pre-selection (mounted on X 15, 400 V as standard setting)	T21608	1	1	1	1	1
05	Assembly instructions German	M8095-DE	1	1	1	1	1
06	Assembly instructions English	M8095-EN	1	1	1	1	1
07	Assembly instructions French	M8095-FR	1	1	1	1	1