

Assembly Instructions M8126-EN

Spare part flow rate measuring board DFM-52 (O/ID T26417)

Purpose

Replacement of flow rate measuring board DFM-52 (A 9.x)

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.

1. Proceed as follows in order to cool down the unit and empty the mould (mould evacuation)
 - Display menu page **Functions**.
 - Select the function **Cooling** and activate with the **OK** key.
 - Select the function **Mould evacuation** and activate with the **OK** key.
- The activated function is indicated with the **✓** symbol.
2. Main switch off, remove the plug from the mains and empty the unit.
3. Remove control cable to ext. flow rate meter Flow-5.
4. Proceed as follows in order to replace the printed circuit board DFM-52 (A 9.x):

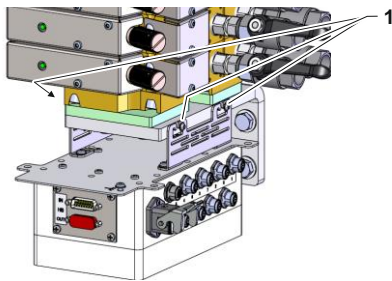


Fig. 1: Remove evaluation unit

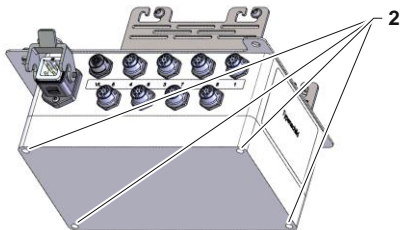


Fig. 2: Remove housing cover

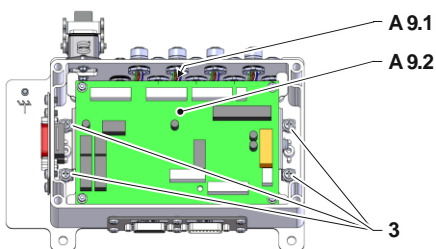


Fig. 3: Evaluation unit up to 8 circuits

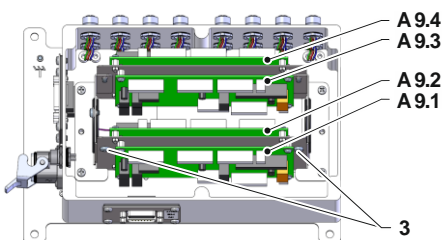



Fig. 4: Evaluation unit up to 16 circuits

- Detach screws (Label 1 → Fig. 1), remove evaluation unit with holder from Flow-5.
 - Detach screws (Label 2 → Fig. 2) and remove housing cover.
 - Remove or detach screws (Label 3 → Fig. 3, Fig. 4) and take out PC board holder.
 - Pull out plug connections of affected printed circuit board.
- Assignment DFM-52:

Circuit	DFM-52
1-4	A 9.1
5-8	A 9.2
9-12	A 9.3
13-16	A 9.4

- Remove the fastening nuts of the printer circuit board DFM-52.
 - Remove printed circuit board DFM-52 from printed circuit board holder.
5. Proceed as follows in order to install the printed circuit board DFM-52 (A 9.x).
 - Attach new printed circuit board DFM-52 to printed circuit board holder and mount fastening nuts.
 - Connect plug connections to the printed circuit board.
 - Insert the printed circuit board holder with printed circuit board and attach or tighten screws (Label 3 → Fig. 3, Fig. 4) .
 - Attach housing cover and mount screws (Label 2 → Fig. 2).
 - Attach evaluation with holder to Flow-5 tightend screws (Label 1 → Fig. 1) .



6. Connect control cable to ext. flow rate meter Flow-5.
7. Reconnect mains plug and switch on main switch.
8. Switch the unit on with the  key.




NOTICE!

If a new printed circuit board DFM-52 (A 9.x) is recognised, the configuration is requested automatically via the input window.

9. Proceed as follows to assemble the new printed circuit board DFM-52 (A 9.x):

- Change to the next screen page with the  key.
- Configure ext. flow rate meter (→ information on the rating plate)
- Select the **Apply configuration** function and activate with the  key.

→ The activated function is indicated with the  symbol.

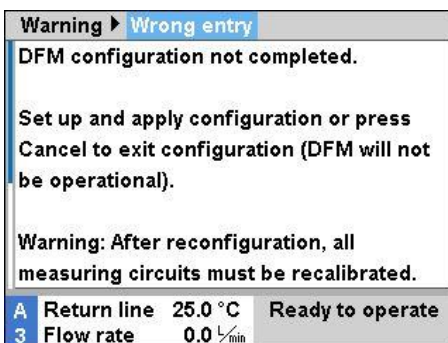


Fig. 5: Warning configuration notice

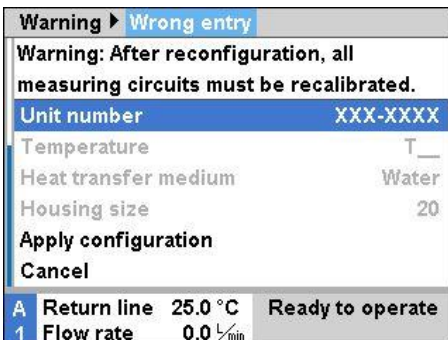


Fig. 6: Entry of configuration

10. Assigning the ext. flow rate meter address (→ Operating instructions Flow-5, registering of new external Flow rate meter)



11. Proceed as follows to calibrate the flow rate metre:

- When setting parameters set **DFM recognition** to the "integrated" value (in [Settings / Miscellaneous](#)), continue with Step 12.
- When setting parameters set **DFM recognition** to the "modular" value (in [Settings / Miscellaneous](#)), continue with Step 13.

Integrated operation

12. Proceed as follows to calibrate the corresponding flow rate metre:

(from software version SW51-1 0849B)

- In normal operation operate the device at 40 °C for at least 10 minutes.
 - **Only in the case of water units:**
If present set the parameter **Pressure relief with unit OFF** at [Setting / Miscellaneous](#) to "OFF".
 - Switch the unit off using button  and wait at least 10 seconds.
 - Set corresponding parameter **Flow rate ext. 1..8 Calibration** at [Service / Calibration / Flow rate external 1 to 4](#) or [Service / Calibration / Flow rate external 5 to 8](#) to "ON".
- The flow rate is calibrated automatically.
- **Only in the case of water devices:**
If present set the parameter **Pressure relief with unit OFF** at [Setting / Miscellaneous](#) to "ON".
 - Switch the unit on with the  key.

(up to software version SW51-1 0849B)

- In normal operation operate the device at 40 °C for at least 10 minutes.
- Set corresponding parameter **Flow rate ext. ... offset** at [Service / Calibration / Flow rate external 1 to 4](#) or [Service / Calibration / Flow rate external 1 to 4](#) to "5 L/min".
- Close the corresponding shut-off valve between the feed and return line and wait for 1 minute.
- Read current **Flow rate**.
- Set the parameter **Flow rate ext. ... offset** according to the following calculation:
→ **Flow rate ext. ... offset** new = 5 – **flow rate** as it currently stands
- Opening the shut-off valve

... ▶ Calibrating ▶ Flow rate external 1 to 4			
	Flow rate ext. filter		10 s
	Flow rate ext. 1..4 Calibration		ON
	Flow rate ext. 1 offset	0.0	L/min
	Flow rate ext. 1 ascent corr.	0.0 %	
	Flow rate ext. 1 Calibration		OFF
	Flow rate ext. 2 offset	0.0	L/min
	Flow rate ext. 2 ascent corr.	0.0 %	
	Flow rate ext. 2 Calibration		OFF
1	Main line Pressure	40.0 °C 0.8 bar	Ready to operate

Fig. 7: Calibrate flow rate during integrated operation

... ▶ Calibrating ▶ Flow rate external 1 to 4			
	Flow rate ext. filter		10 s
	Flow rate ext. 1..4 Calibration		OFF
	Flow rate ext. 1 offset	0.0	L/min
	Flow rate ext. 1 ascent corr.	0.0 %	
	Flow rate ext. 1 Calibration		OFF
	Flow rate ext. 2 offset	0.0	L/min
	Flow rate ext. 2 ascent corr.	0.0 %	
	Flow rate ext. 2 Calibration		OFF
1	Main line Flow rate	40.0 °C 5.0 L/min	Normal operation





Fig. 8: Calibrate flow rate during integrated operation (<SW51-1 0849B)

Service ▶ Calibrating ▶ Flow rate			
No.	1	A..Z	A1 A2 A3 A4 A5 ...
Flow rate filter			10 s
Durchfluss Offset			0.0 $\frac{L}{min}$
Flow rate ascent corr.			0.0 %
Flow rate calibration			ON
<hr/>			
A	Return line	33.6 °C	Ready to operate
1	Flow rate	2.9 $\frac{L}{min}$	

Fig. 9: Calibrate flow rate during modular operation

Operation Modular

13. Proceed as follows to calibrate the corresponding flow rate metre:

- In normal operation operate the device at 40 °C for at least 10 minutes.
 - **Only in the case of water devices:**
If present set the parameter **Pressure relief with unit OFF** at **Setting / Miscellaneous** to "OFF".
 - Switch the unit off using button  and wait at least 10 seconds.
 - Select the module affected e.g. "A1" with the  or  buttons.
 - Set parameter **Flow rate calibration** at **Service / Calibration / Flow rate** to "ON".
- The flow rate is calibrated automatically.
- **Only in the case of water devices:**
If present set the parameter **Pressure relief at unit OFF** at **Setting / Miscellaneous** to "ON".
 - Switch the unit on with the  key.

14. Inspection of calibration of Flow rate meter

- In normal operation operate the unit at 40 °C for at least 5 minutes following calibration.
- Close the corresponding shut-off valve between main and return lines.
- Flow rate returns to 0 L/min.
- If this is not the case repeat the Flow rate meter point.
- Repeat the Flow rate meter calibration item for each measuring circuit.

15. Proceed as follows in order to calibrate the temperature sensor:

- When setting parameters set **DFM recognition** to the "integrated" value (in **Settings / Various**), continue with Step 16.
- When setting parameters set **DFM recognition** to the "modular" value (in **Settings / Various**), continue with Step 17.

Integrated operation

16. Temperature sensor main line ext 1..8 and temperature sensor return line ext. Proceed as follows in order to calibrate 1..8 , if necessary, the temperature sensor:



- With a constant deviation set parameter **Sensor... offset** under **Service / Calibration / Temperature**.
- With a linear deviation, set parameter **Sensor... asc.cor.** under **Service / Calibration / Temperature**.

Service ▶ Calibrating ▶ Temperature		
Sensor external offset		0.0 K
Sensor external ascent corr.		0.0 %
Sensor external filter		15 s
Sensor main l. ext.1 offset		0.0 K
Sensor return l. ext.1 offset		0.0 K
Sensor return l. ext.1 asc.cor.		0.0 %
Sensor return l. ext.2 offset		0.0 K
Sensor return l. ext.2 asc.cor.		0.0 %
1	Main line	40.2 °C
	Flow rate	5.0 l/min
Normal operation		

Fig. 10: Sensor calibration during integrated operation

Operation Modular

17. Proceed as follows, if necessary calibrate the temperature sensor for the main line and temperature sensor of the return line:

- Select the module affected e.g. "A1" with the  or  buttons.
- With a constant deviation set parameter **Sensor... offset** under **Service / Calibration / Temperature**.
- With a linear deviation, set parameter **Sensor... asc.cor.** under **Service / Calibration / Temperature**.




Service ▶ Calibrating ▶ Temperature		
No.	A..Z	A1 A2 A3 A4 A5 ...  
Sensor main line offset		0.0 K
Sensor main line ascent corr.		0 %
Sensor main line filter		20 s
Sensor return line offset		0.0 K
Sensor return line ascent corr.		0 %
Sensor return line filter		20 s
A	Return line	26.9 °C
7	Flow rate	0.6 l/min
Normal operation		

Fig. 11: Sensor calibration during modular operation

18. Check unit functions.

19. Switch the unit off by press the  key.

20. Main switch off.

Parts list

Pos	Description	O/ID	Pcs
01	Flow rate measuring board DFM-52	T24693-2	1
02	Assembly instructions German	M8126-DE	1
03	Assembly instructions English	M8126-EN	1
04	Assembly instructions French	M8126-FR	1