

Danfoss 084H5001 Intelligent Purging System IPS 8 Ammonia



# Danfoss 084H5001 Intelligent Purging System IPS 8 Ammonia User Guide

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**Danfoss 084H5001 Intelligent Purging System IPS 8 Ammonia**



## Mechanical / Refrigeration check

1. Verify that IPS 8 purger is installed, wired, and piped as per Danfoss instructions
2. Horizontal alignment requirements must be within 2 degrees to IPS top cover. See Fig. 1
3. The purger unit should be always kept in an upright position – from receipt to final installation, including possible lift to a high final location. See Fig. 2
4. Leave space around IPS for air circulation flow. Do not install it right up to a wall. See Fig. 3
5. Inspection of possible dirt in gas lines. See Fig. 4
  - For purge point connect gas line a slope towards the IPS8 purger, must be observed.
  - No liquid traps
6. Remember to remove rubber plug. See Fig. 5.
7. Carry out proper vacuum on the purge point connect gas line and R717 side of IPS 8 purger. The R717 side of IPS 8 purger must be pressurized prior to the IPS 8 being put into operation.
8. Before connecting power supply to IPS let it stand upright for min. 6 hours after it has been placed at its final location
9. After mechanical installation, but before connecting power supply IPS, please check:
  - If Danfoss drain valve used (Type SV or ICF with ICFD), then check:
    - SV: See Fig. 6a
      1. Check throttle valve A is opened, and SV is properly assembled.
      2. Check that port B is closed by bolt.
    - ICFD: See Fig. 6b
      1. Check stop valves
      2. Check coil is installed on solenoids (Solenoid for ICF w/ICFD (DO6) – if used)
10. Open stop valves D, as we have vacuumized the pipes before. Open manually one of purge point solenoids E. See Fig. 6a and 6b

For general mechanical installation guidance/practice. See Fig. 6c

## Electrical check

11. Check Main power supply. See Fig. 7

- 084H5001, IPS 8: 230 V, AC 50 Hz
- 084H5002, IPS 8: 230 V, AC 60 Hz
- Power to be connected to Main switch: QS1 and Terminal: XT0
  1. Terminals on QS1
    1. 3, L2 – Line phase
    2. 1, L1 – Neutral
  2. Terminal XT0
    1. PE – Earth

12. Check connections to field connected Purge point solenoids and ICFD solenoid (if used) See Fig. 8a and 8b

- Coils voltage. Same as Main power supply. No further action needed.
- At different voltage for field connected solenoids coils. See Fig. 9

#### IPS controller (MCX15B2) setup

After Mechanical / Refrigeration check, the conditions for startup must be checked. See Fig. 10 for overview of Electrical Panel and location of Thermal magnetic miniature circuit breakers

13. Switch ON:

- QS1, QM2 and QM4. See Fig. 10

14. Before start of compressor, temperatures needs to be checked. Should all be within:  $\pm 1\text{ K}$  (OK) – if OK then go to 15)



If Temperatures are not within:  $\pm 1\text{ K}$  then check cables and connections of pressure and temperature sensors. (NOK)



15. Preparation for start compressor

- Switch ON – See Fig. 10
  1. QM1 and QM3

Below (E10, System is OFF and the icon ) inform that MainSwitch is OFF

```

System is OFF


E10      ACTIVE

```

```

P7170ff      6.5 bar
Psat717      7.0 bar
Psat452      10.6 bar
UClseT      -28.9 °C
UOpenT      -33.9 °C
Tsat452      23.7 °C

```



#### 16. Navigation to Main Switch parameter

- <Enter>
- Select "Start"
- Select "Main Switch ON" and <Enter>

```

Main Menu
-L0-----
Alarms
Login
Start
Input/Output
Service

```

```

Start
-L0-----
Main Switch ON
Main Switch OFF

```

Go to Main Screen and watch compressor in operation and pressure/temperature changing.



As compressor is in operation, pressure and temperature is changing, after about 15-25 minutes we should observe changes as reflected on below screens.

See development below from left to right

```

P7170ff      6.5 bar
Psat717      7.0 bar
Psat452      10.6 bar
UClseT      -28.9 °C
UOpenT      -33.9 °C
Tsat452      23.7 °C


```

```

P7170ff      6.5 bar
Psat717      7.0 bar
Psat452      0.8 bar
UClseT      -28.9 °C
UOpenT      -33.9 °C
Tsat452      -30.3 °C

```




```

Dis. Temp      23.7 °C
SuctionTemp    23.7 °C
NC Temp        23.7 °C
TshCalculate    0.0 K
TshValve        ON



```

```

Dis. Temp      60.0 °C
SuctionTemp    -30.0 °C
NC Temp        23.7 °C
TshCalculate    0.3 K
TshValve        ON

```

If the compressor is running for 15-25 minutes, without pressure and temperature really changing (example below) and compressor then becomes very hot [90 °C-110 °C] on its surface, – then STOP IPS and call Danfoss.

P7170ff	6.5 bar	Dis. Temp	24.2 °C
Psat717	10.0 bar	SuctionTemp	24.2 °C
Psat452	10.6 bar	NC Temp	23.7 °C
UClseT	-25.7 °C	TshCalculate	0.5 K
UOpenT	-30.7 °C	TshValve	ON
Tsat452	23.7 °C		
	 1		



## IPS MCX controller – Quick start



Basically, the IPS with the built-in MCX controller, only need one setting, How many Purge points? See steps below for how to navigate to the parameter for entering how many Purge points which is connected.

- Navigate from the Main Menu to Start by <Enter>
- Select “Main Switch OFF”
- Go to Main Menu
- Navigate from the Main Menu to “Login”
- Enter password “200”
- Choose “Parameters”
- Choose “Unit Conŷg”
- Choose “Valve Settings”
- Enter the number of purge solenoid valves connected to the IPS (factory setting is:8)
- Go back to Start and chose ‘Main Switch ON’, and go back to main screen

See development below from left to right



P7170ff	6.5 bar	Main Menu	Start
Psat717	10.0 bar	-L0-----	-L0-----
Psat452	10.6 bar	Alarms	Main Switch ON
UClseT	-25.7 °C	Login	Main Switch OFF
UOpenT	-30.7 °C	Start	
Tsat452	23.7 °C	Input/Output	
	 1	Service	

P7170ff	6.5 bar	Main Menu	<b>Password</b> 
Psat717	10.0 bar	-L0-----	
Psat452	10.6 bar	Alarms	
UClseT	-25.7 °C	Login	
UOpenT	-30.7 °C	Start	
Tsat452	23.7 °C	Input/Output	
		Service	

Main Menu	Parameters	Unit config
-L2-----	-L2-----	-L2-----
Alarms	General	Compressor
Login	Unit config	Valve settings
Start		Filter settings
Parameters		Bubbler settings
Input/Output		Limits settings
Service		Reset memory

Max_PP	Max_PP	Main Menu
		-L2-----
		Alarms
		Login
		Start
		Parameters
		Input/Output
		Service
U10	U10	
8	6	

Start	P7170ff	6.5 bar
-L2-----	Psat717	10.0 bar
Main Switch ON	Psat452	10.6 bar
Main Switch OFF	UClseT	-25.7 °C
Next Purge Point	UOpenT	-30.7 °C
	Tsat452	23.7 °C
		 1

### IPS MCX controller – Quick start

It can be useful during commissioning to quickly move the next Purge point, in order not to wait to IPS internal time cycle between purge points.

See steps below for how to navigate to the parameter in question.

1. Navigate from the Main Menu to Start by <Enter>
2. Enter password “200”
3. Choose “Start”
4. Choose “Next Purge Point” and <Enter>
5. Press <X>, to go back to main screen
6. Check that Purge Point has been changed to the next one. (below example from Purge Point 3 to Purge Point 4)

See development below from left to right

P7170ff Psat717 Psat452 UClseT UOpenT Tsat452	6.5 bar 10.0 bar 10.6 bar -25.7 °C -30.7 °C 23.7 °C	Main Menu -L0----- Alarms Login Start Input/Output Service	Password ***
Main Menu -L2----- Alarms Login Start Parameters Input/Output Service		Start -L2----- Main Switch ON Main Switch OFF Next Purge Point	P7170ff Psat717 Psat452 UClseT UOpenT Tsat452
			6.5 bar 10.0 bar 10.6 bar -25.7 °C -30.7 °C 23.7 °C
			4

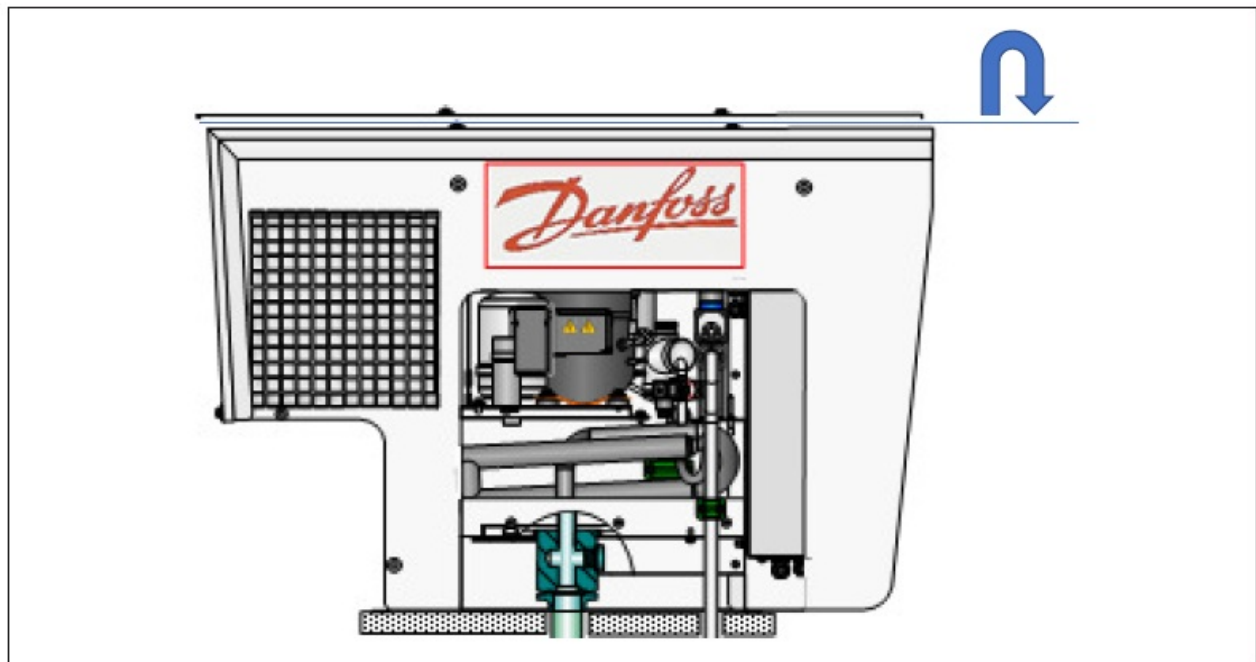


Fig. 1



It is important that the support construction is level to ensure the internal liquid trap is properly filled.  
**Angle to horizontal < 2 degrees**

## Lifting Procedure

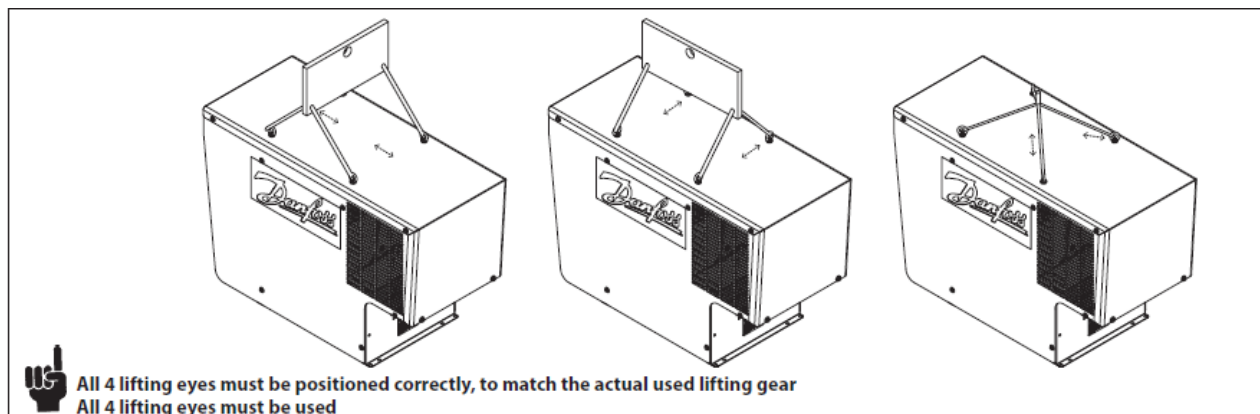


Fig. 2

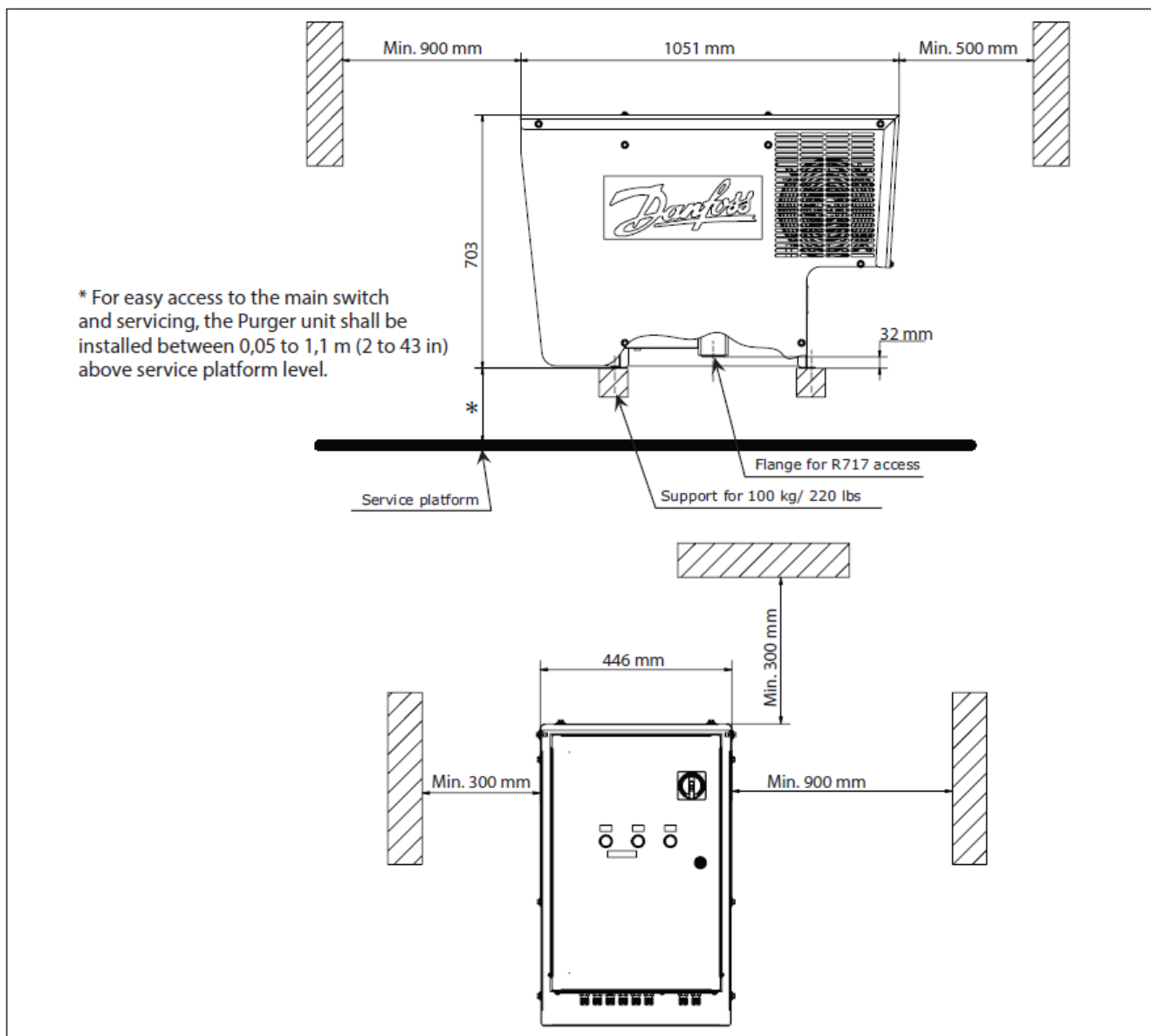


Fig. 3 Installation dimensions

## Connection points



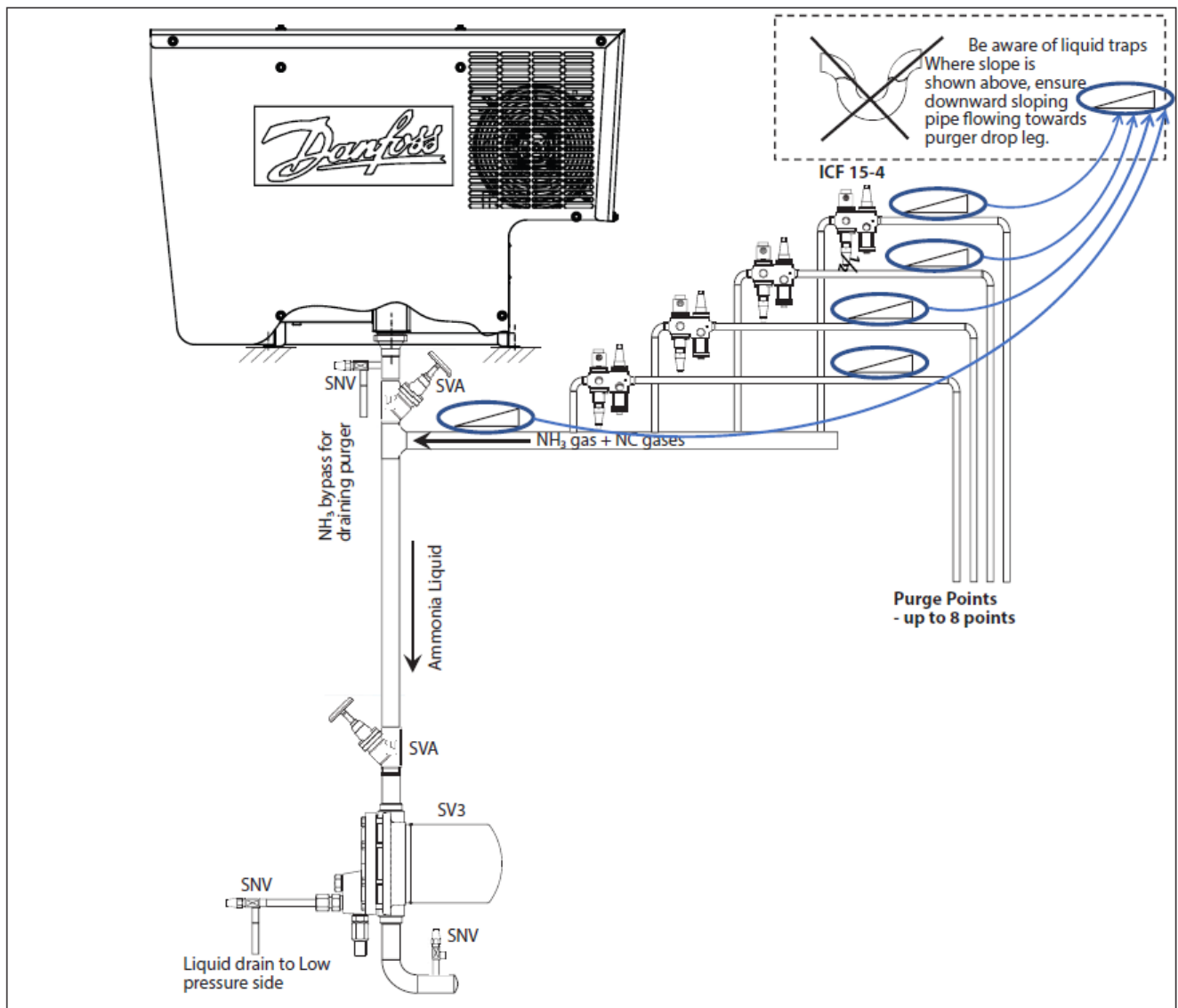


Fig. 4 Multi-point purging from up to 8 purging points

## Installation

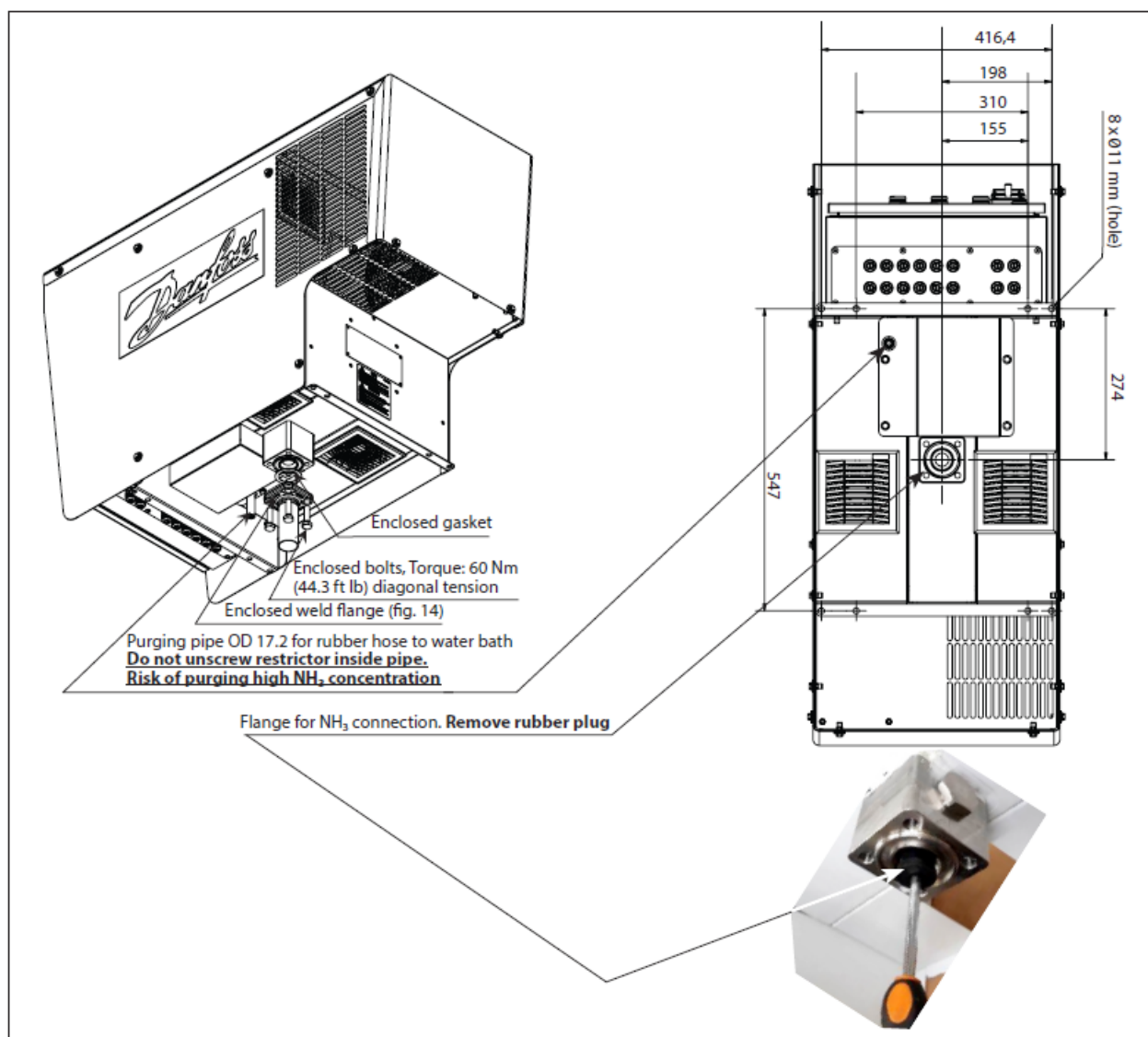


Fig. 5 Ammonia connection

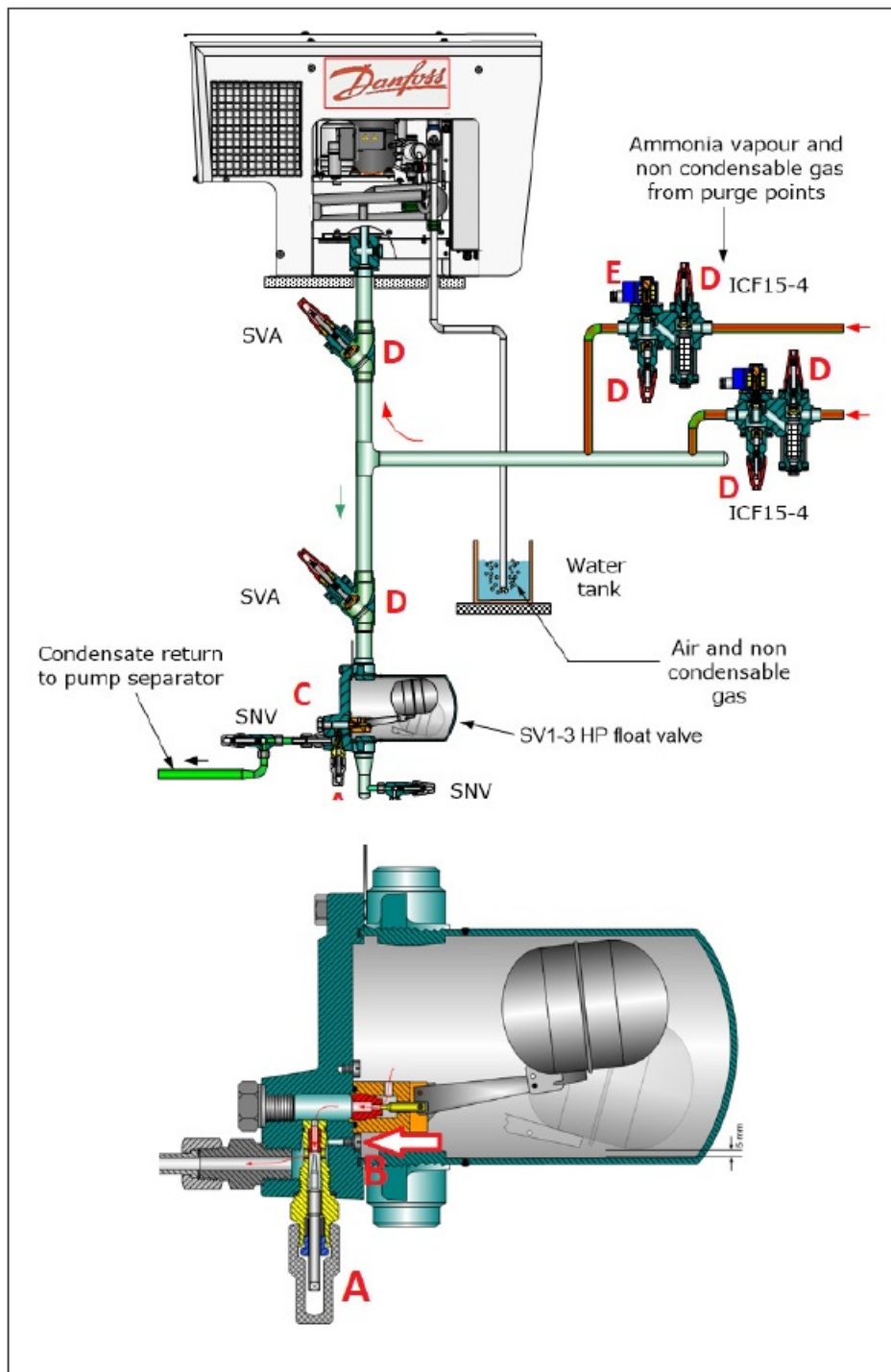


Fig. 6a

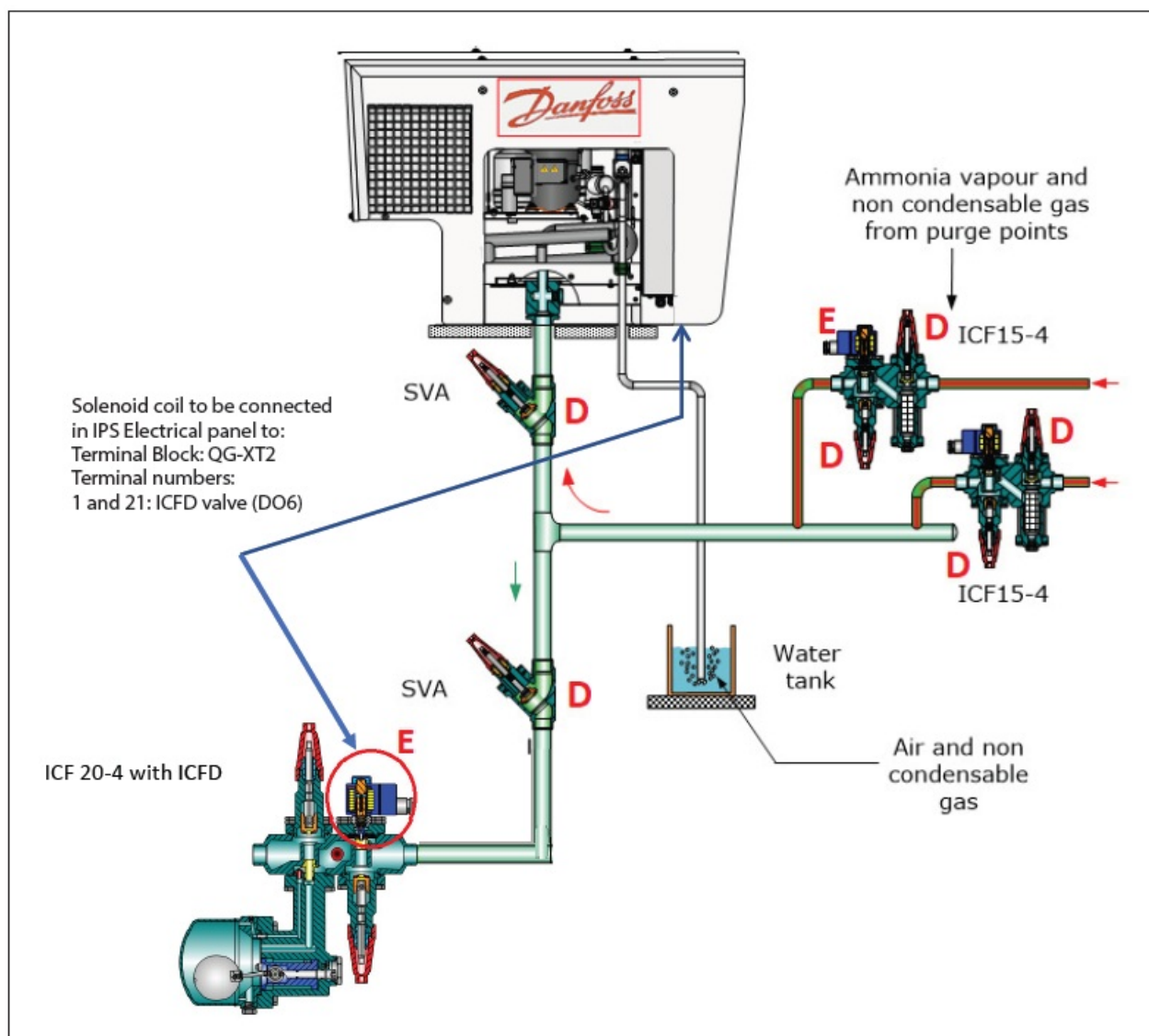


Fig. 6b

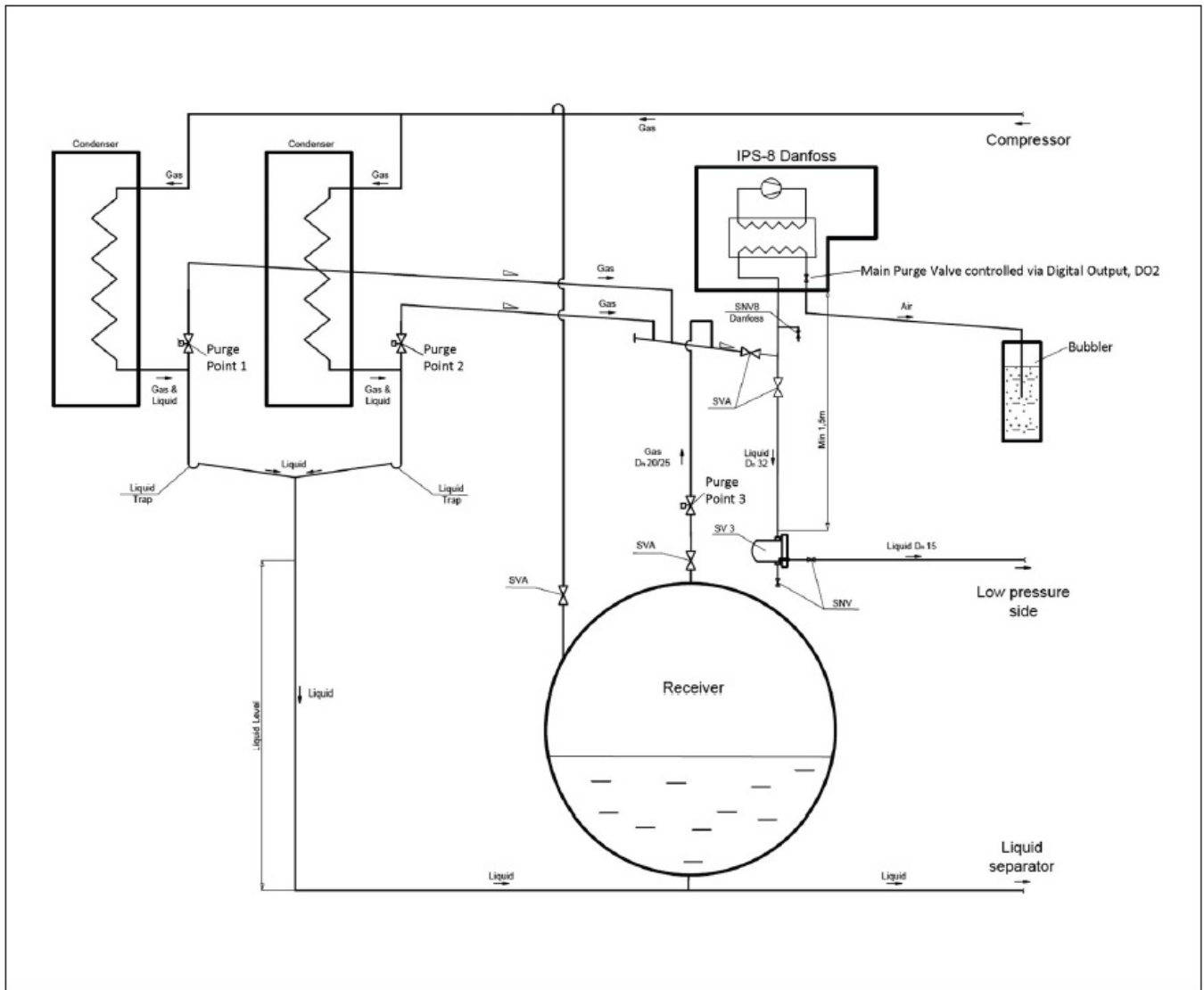


Fig. 6C

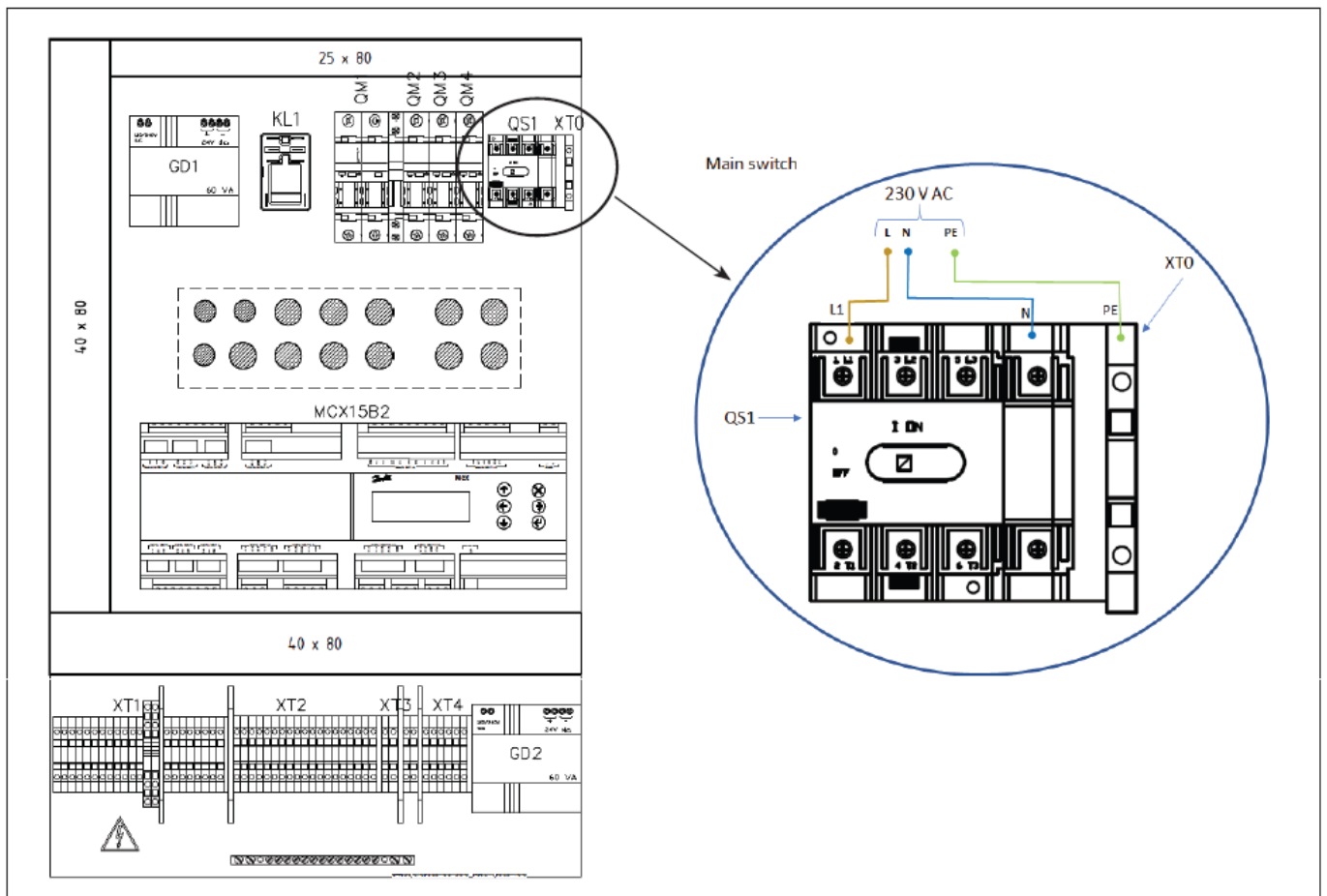


Fig. 7a Controller box internal



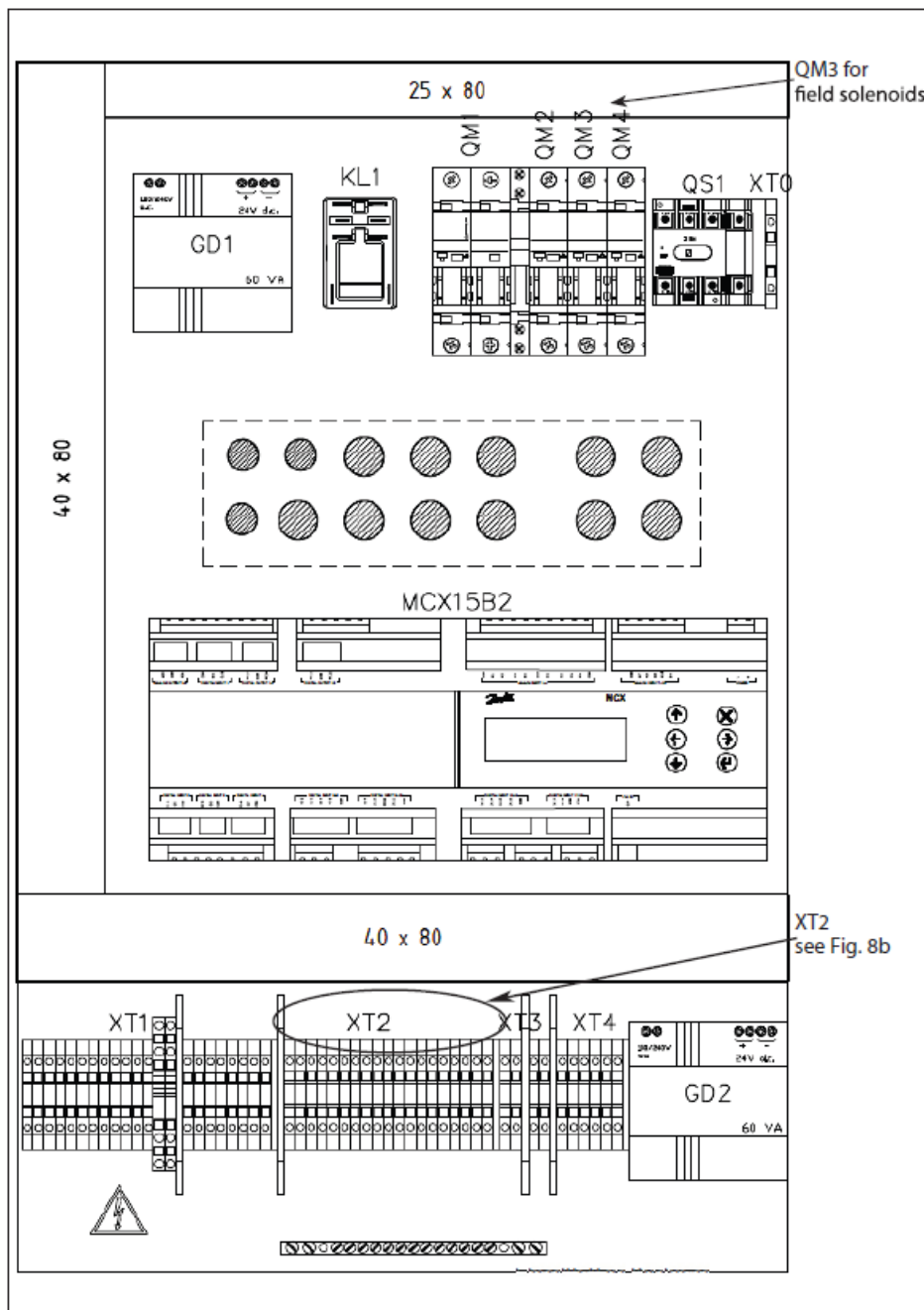
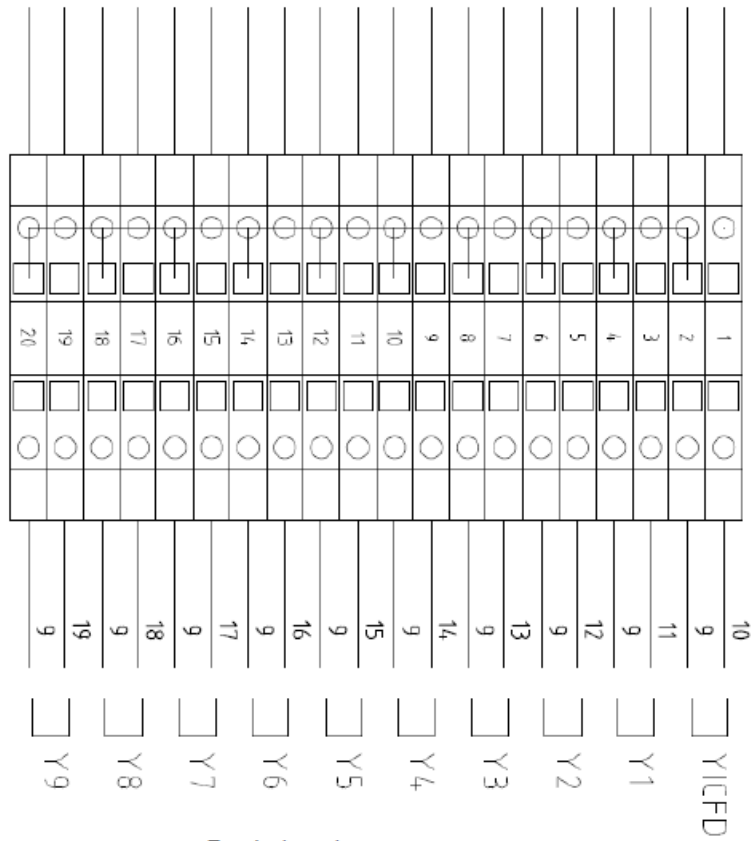


Fig. 8a Controller box internal

XT2 terminal block  
for field connected solenoids



Terminal numbers:

- 1 and 2: ICFD valve (DO6)
- 3 and 4: Purge valve no. 1 (DO7)
- 5 and 6: Purge valve no. 2 (DO8)
- 7 and 8: Purge valve no. 3 (DO9)
- 9 and 10: Purge valve no. 4 (DO10)
- 11 and 12: Purge valve no. 5 (DO11)
- 13 and 14: Purge valve no. 6 (DO12)
- 15 and 16: Purge valve no. 7 (DO13)
- 17 and 18: Purge valve no. 8 (DO14)
- 19 and 20: Bubbler (DO15)

Fig. 8b XT2 terminal block

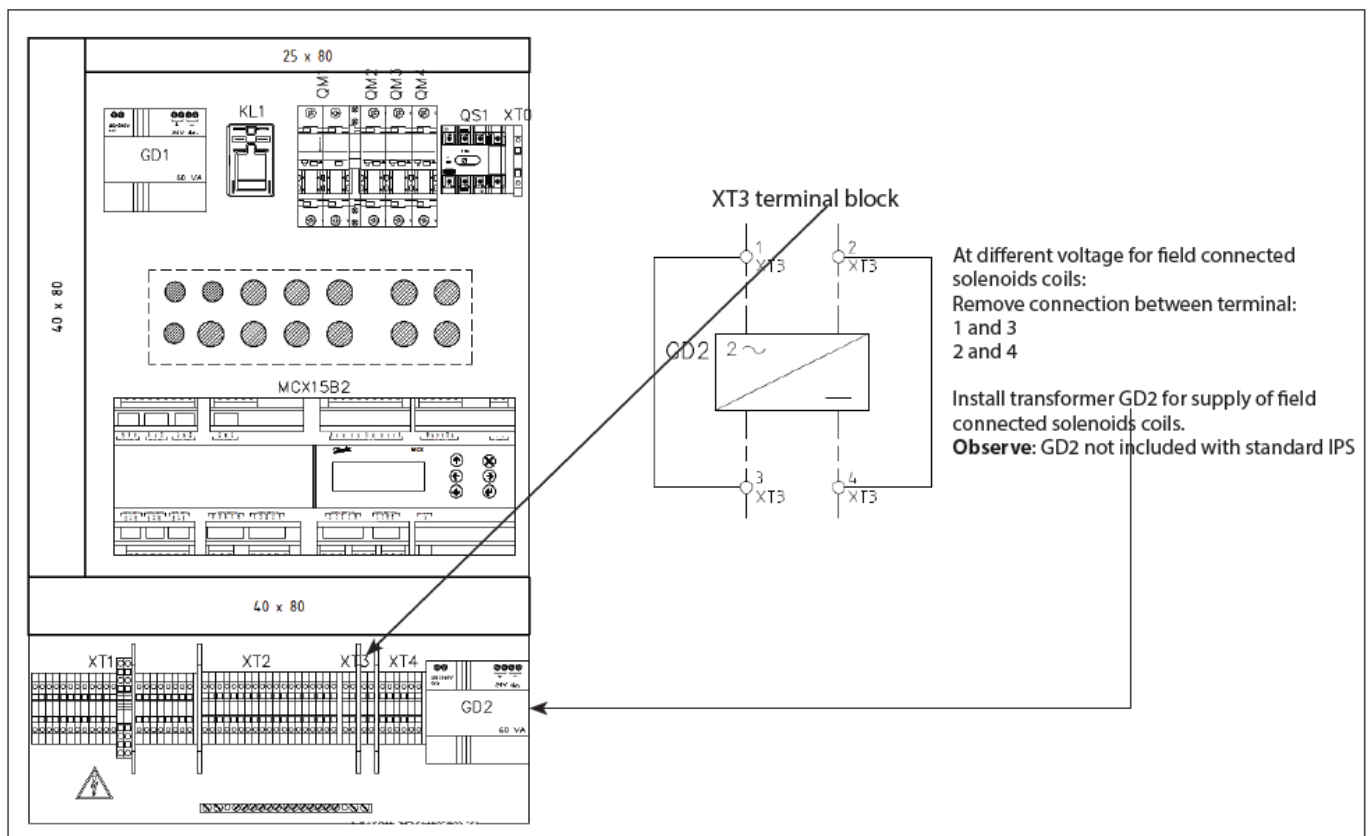


Fig. 9 Controller box internal

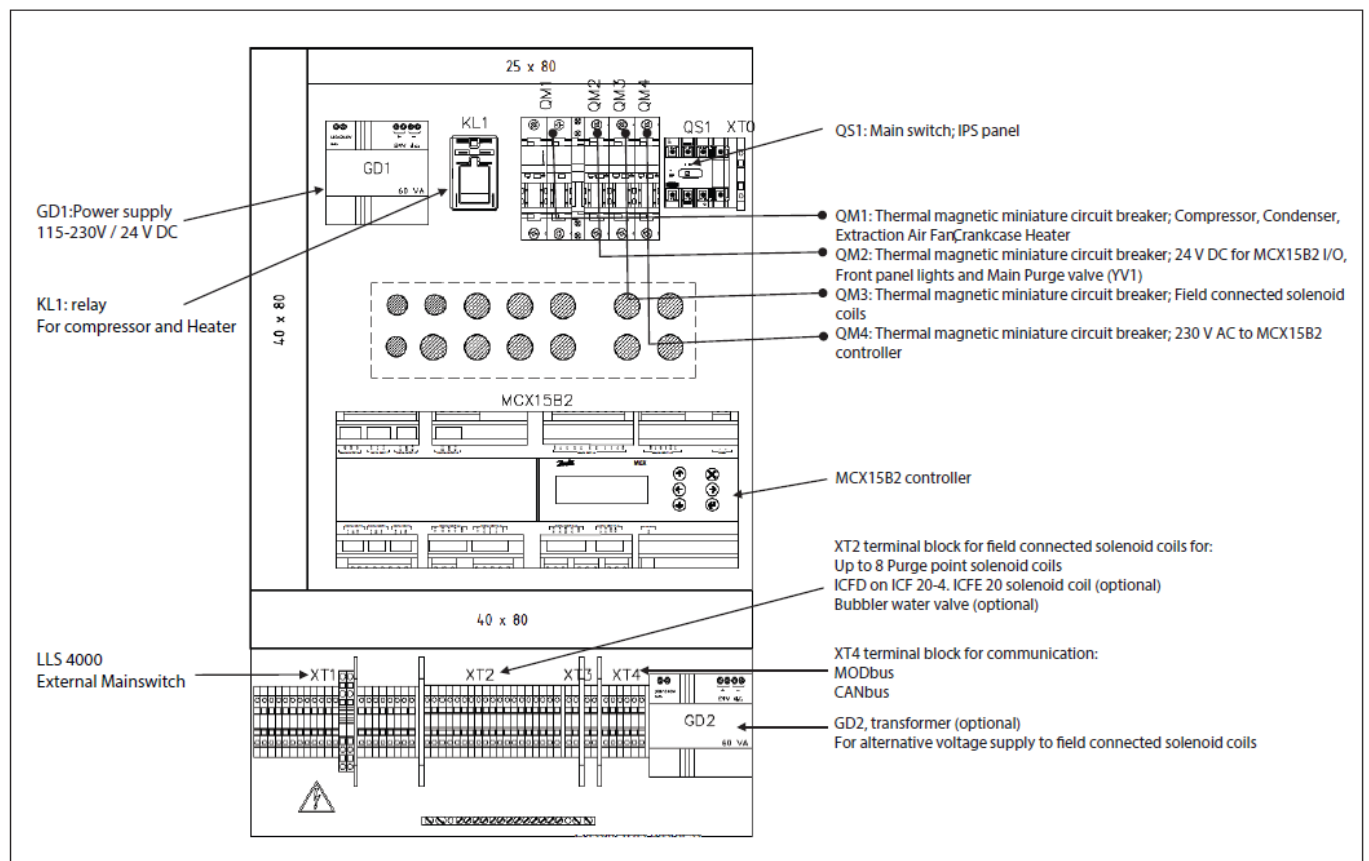


Fig. 10 Controller box internal

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## Documents / Resources

	<p><a href="#">Danfoss 084H5001 Intelligent Purging System IPS 8 Ammonia</a> [pdf] User Guide</p> <p>084H5001 Intelligent Purging System IPS 8 Ammonia, Intelligent Purging System IPS 8 Ammonia, Purging System IPS 8 Ammonia, System IPS 8 Ammonia, Ammonia</p>
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## References

- [User Manual](#)

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