

Data sheet

# Valve station

ICF 15, ICF 20, ICF 25, ICF 50 and ICF 65



Based on advanced technology the ICF valve station incorporates several functions in one housing, which can replace a series of conventional mechanical, electro-mechanical and electronically operated valves.

This valve station not only provides a number of advantages in the design phase of a refrigeration plant but also in the installation, service and maintenance.

The ICF valve stations are designed for low and high pressure refrigerants and can be used in pumped liquid lines, liquid injection lines, liquid drain lines and hot gas lines.

Supplied as a complete assembly, it is fully tested at high pressure and its functions are tested under factory controlled conditions.

One code number equals one application solution.

## Features

- Designed for industrial refrigeration applications for a maximum working pressure of 52 bar/754 psig. (For ICF with ICFD defrost module; see Technical Data, Pressure)
- Applicable to HCFC, non flammable HFC, R717 (Ammonia) and R744 (CO<sub>2</sub>). The use of ICF valve stations with flammable hydrocarbons is not recommended.
- Direct weld connections (No leaks through flanges)
- Connection types include butt weld and socket weld.
- Low temperature steel housing.
- Low weight and compact design.
- V-port regulating cones on the control modules ensure optimum regulating accuracy particularly at part load.
- Modular Concept  
Each housing is available with several different connection types and sizes. Valve service is performed by replacing the function module.
- Side ports for the connection of pressure gauges, transmitters, sight glasses, service valve etc.
- UL approved



ICF valve station		
Nominal bore	DN ≤ 25 (1 in.)	DN 32-65 (1¼ - 2½")
Classified for	Fluid group I	
Category	Article 3, paragraph 3	II

Contents	Page
Features.....	1
Technical data .....	3
Design.....	3
Description of the function modules for ICF 15 and 20.....	7
Description of the function modules for ICF 25 .....	8
Description of the function modules for ICF 50 and ICF 65 .....	9
Material specification .....	10
Code number selection .....	19
Applications.....	23
Ordering ICF valve station .....	24
Dimensions .....	33

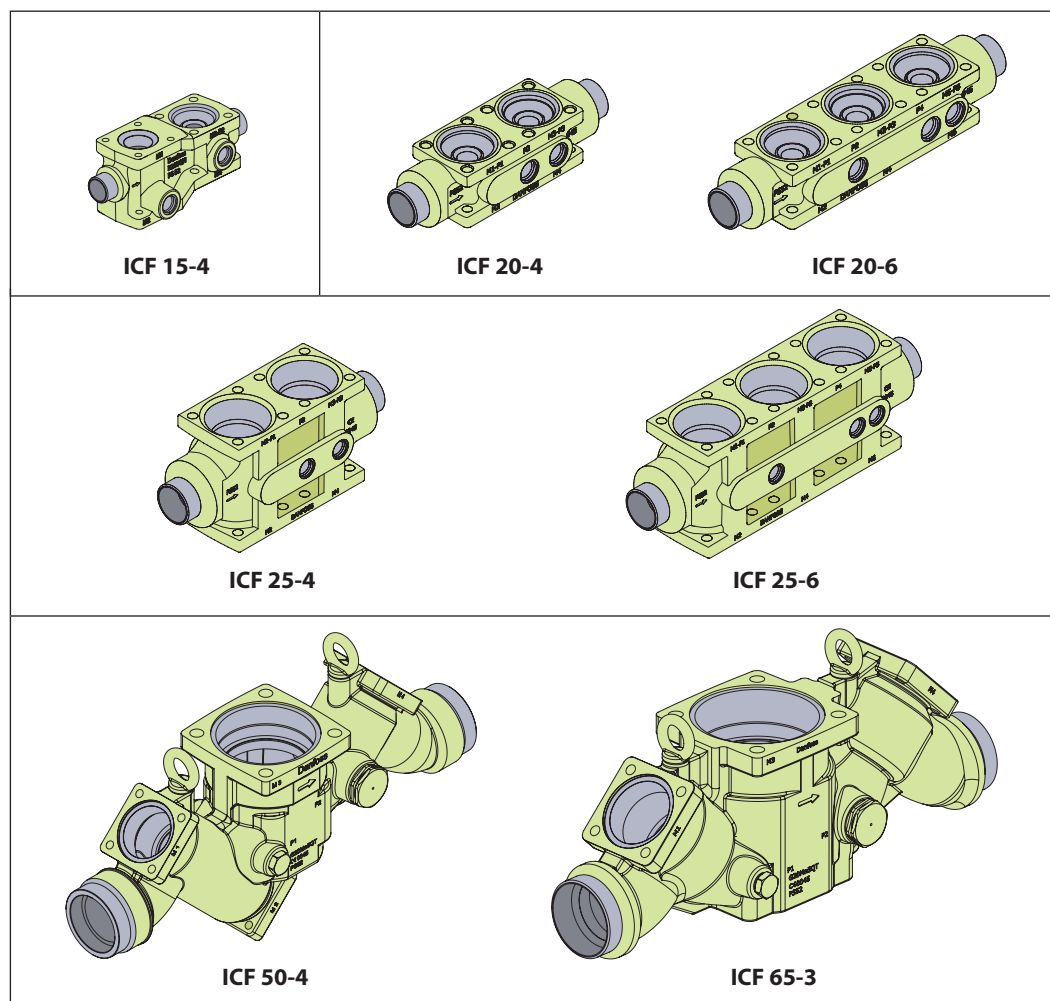
**Technical data**

- Refrigerants**  
 Applicable to HCFC, non flammable HFC, R717 (Ammonia) and R744 (CO<sub>2</sub>).  
 The use of ICF valve stations with flammable hydrocarbons is not recommended.  
 For further information please contact the local Danfoss sales company.
  - Temperature range**  
 -60/+120°C (-76/+248°F).  
 If the ICM module is going to be used in liquid refrigerant with a temperature above +75°C (+167°F), please contact Danfoss.
  - Ambient temperature for ICF with ICAD:**  
 -30°C/+50°C (-22°F/122°F)
  - Surface protection**  
 The external surface is zinc-TLP treated to provide corrosion protection according to EN ISO 2081:2009
- Additional on-site corrosion protection is recommended.
- Pressure**  
 The ICF is designed for:  
 Max. working pressure: 52 bar g (754 psig)  
 For ICF with ICFD module the max. working pressure is 28 bar g (406 psi g).  
 If the refrigeration system include ICFD module, a test pressure of the system must not exceed 28 bar (406 psi g), unless the ICFD float is temporarily taken out before test.  
 Max. working pressure for ICFD without float: 52 Bar/754 psig.
- Opening differential pressure:**  
 Please refer to the individual function module data.

**Design**

- The main components of the ICF valve station are:
- A housing
  - A maximum of four or six function modules (ICF 65 - max. 3)
    - In all ICF 15 the modules M1 and M2 are predefined as shut-off valve and strainer module.
    - In all ICF 50 the modules M1 and M2 are predefined as shut-off valve and blind cover (prepared for strainer).
    - In all ICF 65 the module M1 is predefined as shut-off valve

*Housing*



*Function modules*

**Each housing accommodates a maximum of four or six function modules (ICF 65 max. 3), of the following types:**

- Shut-off valve module
- Manual regulating valve module
- Strainer module
- Solenoid valve module
- Electronic expansion valve module
- Manual opening module
- Check valve module
- Stop & check valve module
- Pilot operated servo valve module
- Defrost drain module
- Motor operated valve module
- External welding connection module
- Blind top cover

*Optional:*

The housings are supplied with a predefined number of side ports for the following options:

- Sight glass
- Temperature or pressure sensor
- Pressure gauge
- Side exit for drain or bypass.

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The design allows maximum capacity and minimum pressure drop, using advanced technology and double seats – offering higher capacity than conventional systems using individual valves and components.

The ICF valve station is multifunctional.

ICF valve station offers compact dimensions and shortened installation time due to the reduced number of direct welded connections.

Supplied as a complete assembly, it is leak tested at high pressure and its functions are tested under factory controlled conditions.

*Connections*

- SOC: Socket weld, ANSI (B 16.11)

*Approvals*

The ICF concept is designed to fulfil global refrigeration requirements.

For specific approval information, please contact Danfoss.

*Housing and function module material*

Low temperature steel

**When using TIG/MIG/SMAW welding technology, it is possible to install the ICF valve station without prior removal of the function modules from the housing. If using other welding methods the modules must be removed during welding.**

Please consult the product instruction for more details.

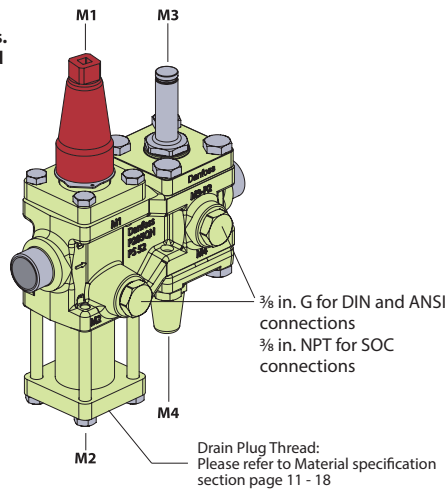
**Data sheet | Valve station, ICF 15, ICF 20, ICF 25, ICF 50 and 65**

Module and side port arrangement

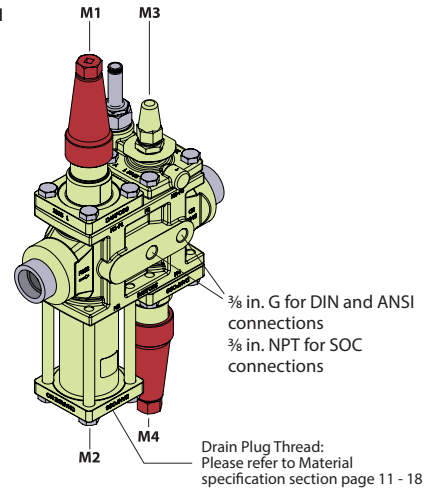
<p>ICF 15-4</p>	<p>Flow in an ICF 15-4</p>
<p>ICF 20-4, 25-4</p>	<p>Flow in an ICF 20-4, 25-4</p>
<p>ICF 20-6, 25-6</p>	<p>Flow in an ICF 20-6, 25-6</p>
<p>ICF 50-4</p>	<p>Flow in an ICF 50-4</p>
<p>ICF 65-3</p>	<p>Flow in an ICF 65-3</p>

Module and side port arrangement (continued)

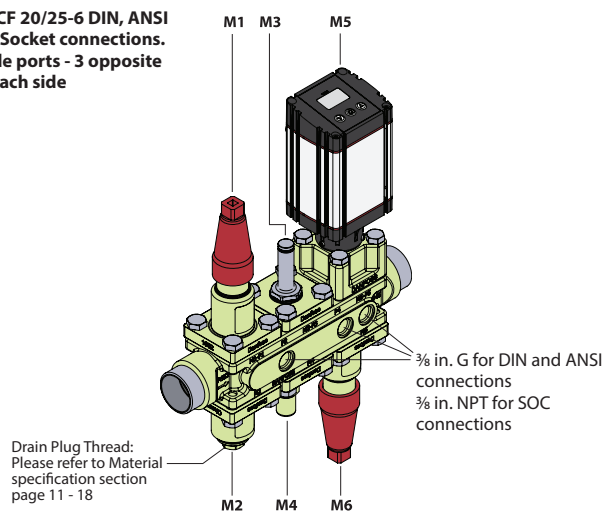
All ICF 15-4 DIN, ANSI and Socket connections. 2 side ports - right hand side in flow direction.



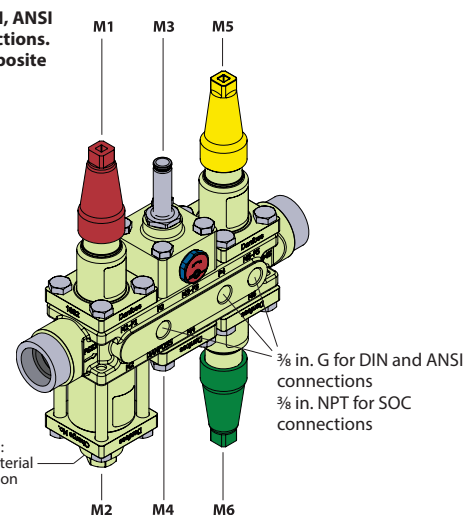
All ICF 20/25-4 DIN, ANSI and Socket connections. 4 side ports - 2 opposite on each side.



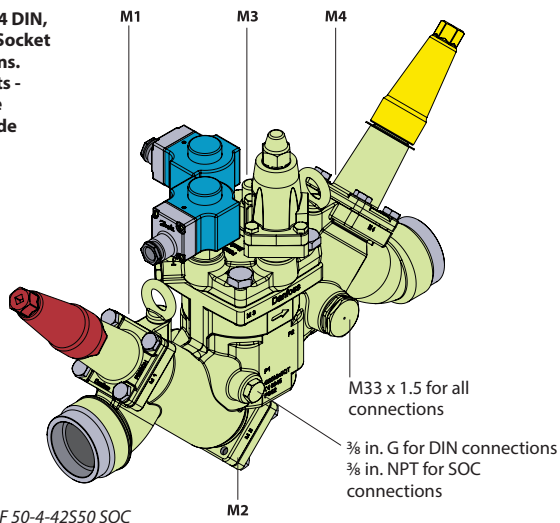
All ICF 20/25-6 DIN, ANSI and Socket connections. 6 side ports - 3 opposite on each side



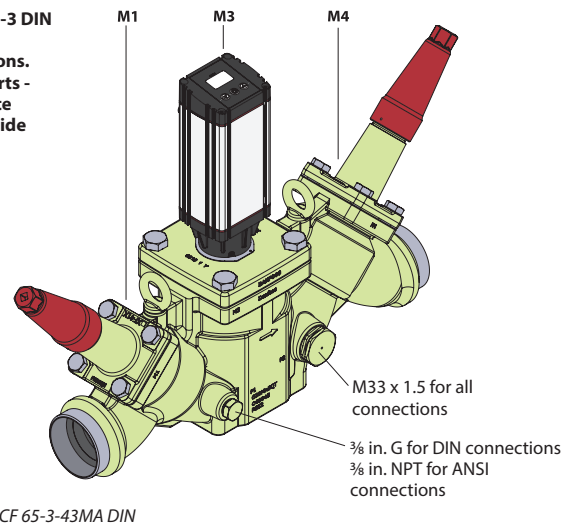
All ICF 20/25-6 DIN, ANSI and Socket connections. 6 side ports - 3 opposite on each side.



All ICF 50-4 DIN, ANSI and Socket connections. 4 side ports - 2 opposite on each side



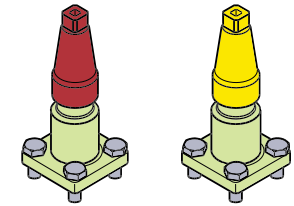
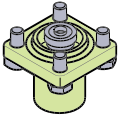
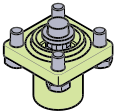
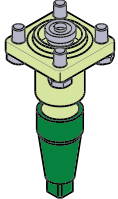
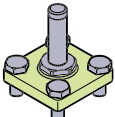
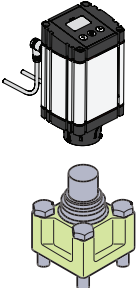
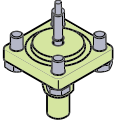
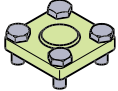
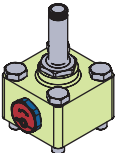
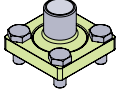
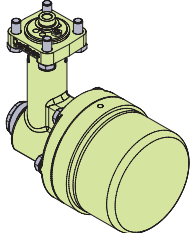

All ICF 65-3 DIN and ANSI connections. 4 side ports - 2 opposite on each side



**Description of the function modules for ICF 15 and 20**

ICF 15 and ICF 20 have the same function modules except for the two fixed modules M1 (stop valve ICFS 15) and M2 (filter ICFF 15) in ICF 15.

**ICF 15 and ICF 20**

<p><b>ICFS 15 / ICFS 20</b> <i>Shut-off valve module</i> This module has the function of a stop valve, and has a red cap.</p> <p><b>ICFR 20A</b> <i>Manual regulating valve module</i> This module has the function of a hand regulating valve, and has a yellow cap.</p>	 <p>ICFS 15/ICFS 20      ICFR 20A</p>	<p><b>ICFC 20</b> <i>Check valve module</i> This module has the function of a check valve.</p>	 <p>ICFC 20</p>
<p><b>ICFF 15/20 / ICFF 20E</b> <i>Strainer module</i> This module functions as a strainer.</p> <p>ICF 15, all connections: Strainer element 150µ (100 mesh) 60 cm<sup>2</sup> (9.3 in<sup>2</sup>) ICF 20, with DIN/ANSI connections: Pleated 150µ (100 mesh) 45 cm<sup>2</sup> (7.0 in<sup>2</sup>)</p> <p>ICF 20 with SOC connections (ICFF 20E): Pleated 150µ (100 mesh) / 160 cm<sup>2</sup> (24.8 in<sup>2</sup>)</p>	 <p>ICFF 15/20 / ICFF 20E</p>	<p><b>ICFN 20</b> <i>Stop &amp; check valve module</i> This module has the function of a combined stop and check valve, and has a green cap.</p>	 <p>ICFN 20</p>
<p><b>ICFE 20</b> <i>Solenoid valve module</i> This module has the function of a normally closed solenoid valve for controlling the refrigerant flow.</p> <p><b>ICFA 20</b> <i>Electronic expansion valve module</i> This module has the function of an electronic pulse width modulating (PWM) expansion valve.</p>	 <p>ICFE 20 / ICFA 20</p>	<p><b>ICM 20-A, B or C</b> <i>Motor operated valve module</i> This module is a stepper motor actuator valve for on/off and modulating control of the refrigerant flow.</p>	
<p><b>ICFO 20</b> <i>Manual opening module</i> This module facilitates the manual opening of the solenoid valve (type ICFE).</p>	 <p>ICFO 20</p>	<p><b>ICFB 20</b> <i>Blind top cover</i> This provides a blanking cover for unused module ports.</p>	 <p>ICFB 20</p>
<p><b>ICFE 20H</b> <i>Solenoid valve module with integrated manual opener</i> This module has the function of a normally closed solenoid valve for controlling the refrigerant flow.</p>	 <p>ICFE 20H</p>	<p><b>ICFW 20</b> <i>Welding module 20 DIN or 3/4" SOC</i> This module is used for drain connection during hot-gas defrosting - in case of high capacity.</p>	 <p>ICFW 20</p>
<p><b>ICFD 20</b> <i>Float operated valve module.</i> This module opens for liquid flow when the float is lifted by the internal liquid level.</p>		<p><b>Please note:</b> At about 10% of maximum mass flow of ICFE 20H, the pressure differential correspond to about 0.07 Bar (1 psi). ICFE 20H will start to open at these conditions. At a pressure differential of minimum 0.2 Bar (2.9 psi) ICFE 20H will be 100 % open.</p> 	

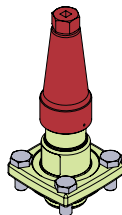
Description of the function modules for ICF 25

ICF 25

**ICFS 25**

*Shut-off valve module*

This module has the function of a stop valve, and has a red cap.

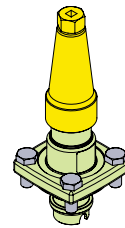


ICFS 25

**ICFR 25, A or B**

*Manual regulating valve module*

This module has the function of a hand regulating valve, and has a yellow cap.

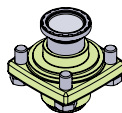


ICFR 25

**ICFC 25**

*Check valve module*

This module has the function of a check valve.



ICFC 25

**ICFF 25 / ICFF 25E**

*Strainer module*

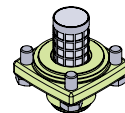
This module functions as a strainer.

Strainer size:

ICF with DIN and ANSI (ICFF 25) connections: Pleated 150 $\mu$  (100 mesh) / 160 cm<sup>2</sup> (24.8 in<sup>2</sup>)

ICF with SOC connections (ICF 25E):

Pleated 150 $\mu$  (100 mesh) / 330 cm<sup>2</sup> (51.2 in<sup>2</sup>)

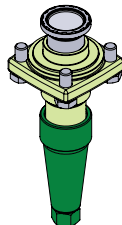


ICFF 25 / ICFF 25E

**ICFN 25**

*Stop & check valve module*

This module has the function of a combined stop and check valve, and has a green cap.



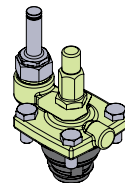
ICFN 25

**ICFE 25**

*Solenoid valve module*

This module has the function of a normally closed solenoid valve for controlling the refrigerant flow.

It has a built-in manual opening function.

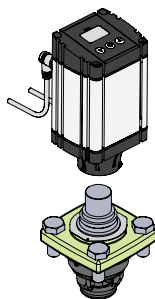


ICFE 25

**ICM 25-A or B**

*Motor operated valve module*

This module is a stepper motor actuator valve for on/off and modulating control of the refrigerant flow.



ICM 25-A or B



**Please note:**

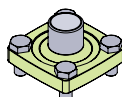
At about 10% of maximum mass flow of ICFE 25, the pressure differential correspond to about 0.07 Bar (1 psi). ICFE 25 will start to open at these conditions.

At a pressure differential of minimum 0.2 Bar (2.9 psi) ICFE 25 will be 100 % open.

**ICFW 25**

*Welding module, 25 DIN or 25 (1") SOC*

This module is used for drain connection during hot-gas defrosting - in case of high capacity.

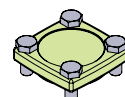


ICFW 25

**ICFB 25**

*Blind top cover*

This provides a blanking cover for unused module ports.



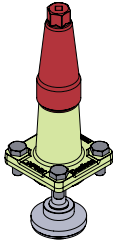
ICFB 25



Description of the function modules for ICF 50 and ICF 65

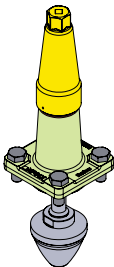
ICF 50 and ICF 65

**SVA-S 50 / SVA 65**  
*Shut-off valve module*  
 This module has the function of a stop valve, and has a red cap.



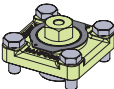
SVA-S 50 / SVA-S 65

**REG-SB 50 / REG-SB 65**  
*Manual regulating valve module*  
 This module has the function of a hand regulating valve, and has a yellow cap.



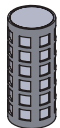
REG-SB 50 / REG-SB 65

**ICFB 50**  
*Blind cover*  
 Prepared for insert of strainer (see below)



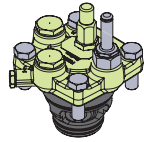
ICFB 50

**FIA 50 (option)**  
*Strainer insert*  
 Please order FIA 50 strainer insert and element from the FIA part programme. For further information please consult the data sheet for FIA strainers.  
 Available elements:  
 See below.

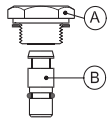


FIA 50

**ICS 50 / ICS 65**  
*Pilot-operated valve module*  
 This module has the function of a pilot-operated valve for on/off and modulating control of the refrigerant flow.  
 All ICS modules are 3-pilot versions. They are supplied with two blanking plugs (A) and one sealing plug (B).



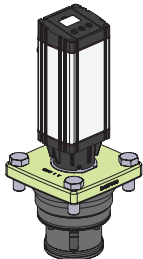
ICS 50 / ICS 65



ICS 50 and 65 inserts are available in different capacities:

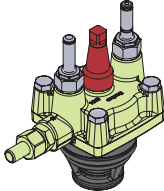
<b>ICS 50:</b>	<b>ICS 65:</b>
ICS 50	ICS 65
ICS 50-32	ICS 65-40
ICS 50-40	ICS 80

**ICM 50 / ICM 65 - A or B**  
*Motor operated valve module*  
 This module is a stepper motor actuator valve for on/off and modulating control of the refrigerant flow.



ICM 50 / ICM 65 - A or B

**ICLX 50 / ICLX 65**  
*2-step solenoid valve module*  
 This module has the function of a normally closed solenoid valve for controlling the refrigerant flow.  
 It has a built-in manual opening function.  
 The ICLX module functions as a shut-off valve to open after hot gas defrost.



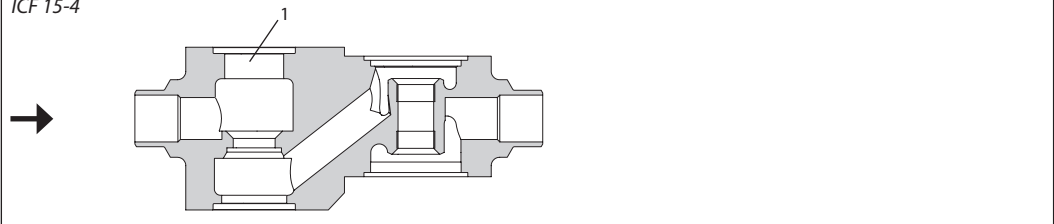
ICLX 50 / ICLX 65

Strainer insert	Strainer insert	Strainer insert	Strainer insert	Pleated Strainer insert	Pleated Strainer insert	Pleated Strainer insert
100µ	150µ	250µ	500µ	150µ	250µ	500µ
150 mesh	100 mesh	72 mesh	38 mesh	100 mesh	72 mesh	38 mesh
148H3157	148H3130	148H3138	148H3144	148H3179	148H3184	148H3189

Material specification

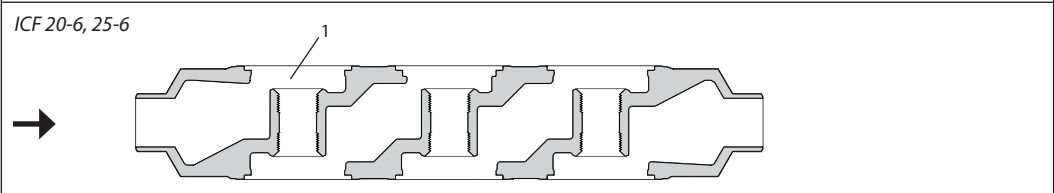
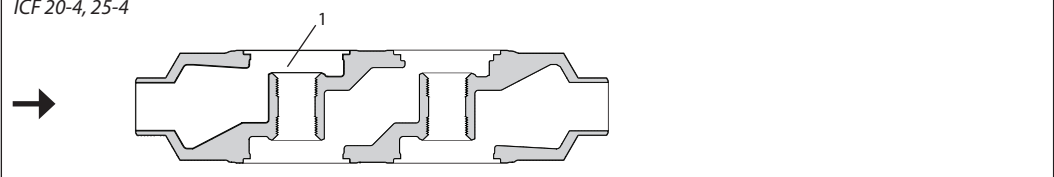
ICF housing

ICF 15-4



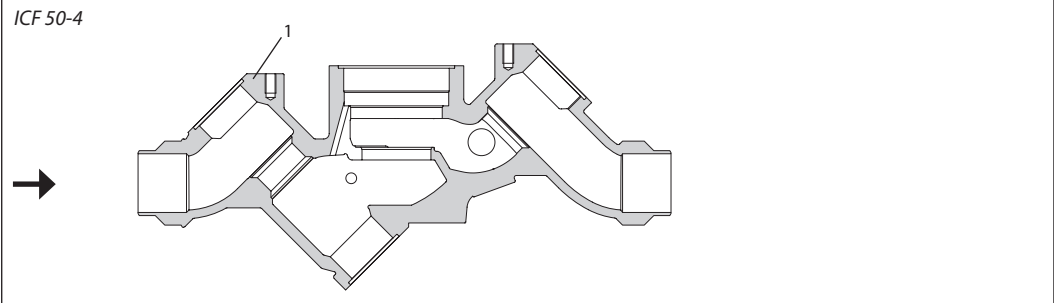
Pos.	Part	Material	EN	ASTM	JIS
1	Housing	Steel	P285QH, 10222-4	LF2, A350	

ICF 20-4, 25-4

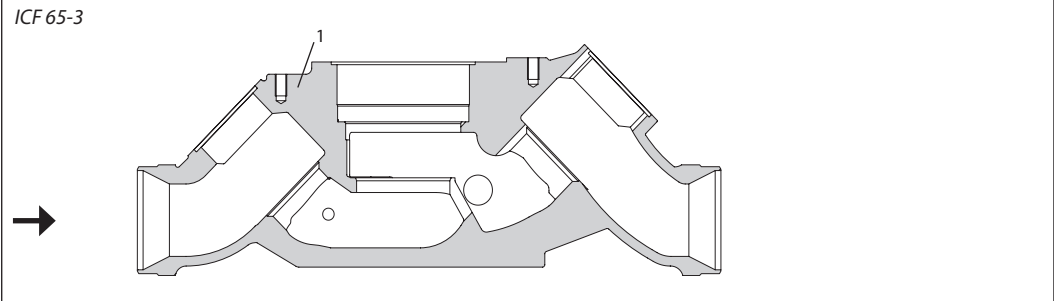


Pos.	Part	Material	EN	ASTM	JIS
1	Housing	Cast steel low temperature	G20MN5QT EN 10213-3	LCC, A352	SCPL1, G5151

ICF 50-4



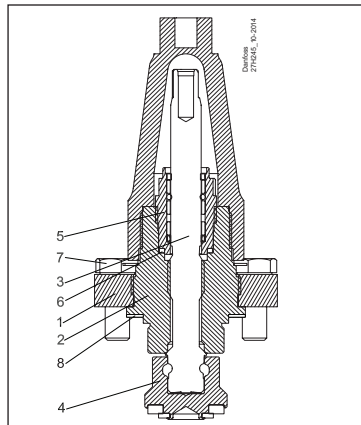
ICF 65-3



Pos.	Part	Material	EN	ASTM	JIS
1	Housing	Cast steel low temperature	G20MN5QT EN 10213-3	LCC, A352	SCPL1, G5151

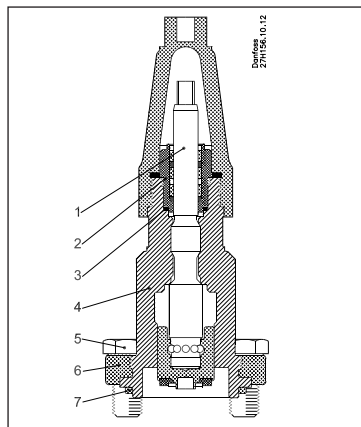
**Material specification**  
(continued)

*ICFS 15 shut-off valve module*



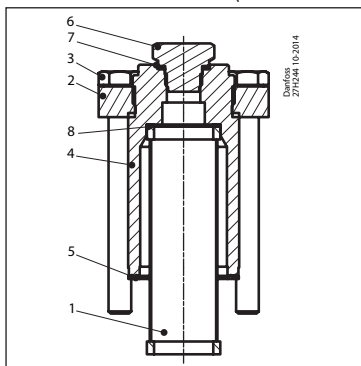
Pos.	Part	Material	EN	ASTM	JIS
1	Bonnet, Flange Steel	Steel	G20Mn5QT, 10213-3 P285QH+QT, 10222-4 P275NL, 10028-3	LCC, A352 LF2, A350	
2	Bonnet, Insert	Steel	11SMn30 10087	AISI 1213	Type 2 R 683/9
3	Spindle	Stainless steel	X8CrNiS18-9 10088	AISI 303	Type 17 683/13
4	Cone	Steel	11SMn30 10087	AISI 1213	Type 2 R 683/9
5	Packing gland	Stainless steel	X8CrNiS18-9 10088	AISI 303	Type 17 683/13
6	Packing washer	Aluminium			
7	Bolts	Stainless steel	A2-70	Type 308	A2-70
8	Gasket	Fiber, Non-asbestos			

*ICFS 20 shut-off valve module*



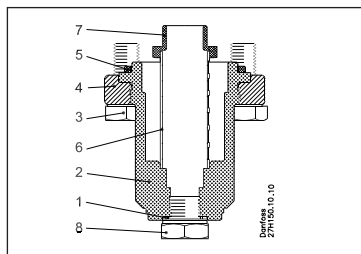
Pos.	Part	Material	EN	ASTM	JIS
1	Spindle	Stainless steel	X8CrNiS 18-9 EN 10088		G4303 G4304
2	Thread part	Stainless steel	X8CrNiS 18-9 EN 10088		G4303 G4304
3	AL-gasket/ Refrig. gasket		AL99 alloy no. 1200 DIN 1712.BL.3	AL1200	
4	Bonnet	Steel	S235JRG2 EN 10025	A283	G3101
5	Hex-head bolt M10 x 25	Stainless steel	A2-70 EN 24017	A320	A2-70
6	Flange	Cast steel low tem- perature	G20Mn5QT EN 10213-3	A352	G5152
7	Gasket	Chloroprene (Neoprene)			

*ICFF 15 strainer module (strainer element 150µ (100 mesh) 60 cm² (9.3 in²))*



Pos.	Part	Material	EN	ASTM	JIS
1	Strainer	Stainless steel			
2	Flange bonnet	Steel	G20Mn5QT, 10213-3 P285QH+QT, 10222-4 P275NL, 10028-3	LCC, A352 LF2, A350	
3	Bolt	Stainless steel	A2-70	Type 308	A2-70
4	ICFF 15 bonnet G1/4	Steel	11SMn30	AISI 1213	Type 2
5	Flat gasket	Fiber, Non-asbestos			
6	Plug 1/2" NPT	Steel	11SMnPb30		
7	Gasket - metal joint	Aluminium			
8	Wave spring	Steel			

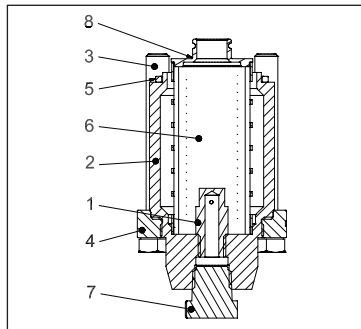
*ICFF 20 strainer module*



Pos.	Part	Material	EN	ASTM	JIS
1	Gasket	AL 99 F11			
2	Bonnet	Steel	S235JRG2 EN 10025	A283	G3101
3	Hex-head bolt M10 x 25	Stainless steel	A2-70 EN 24017	A320	A2-70
4	Flange	Cast steel low tem- perature	G20Mn5QT EN 10213-3	A352	G5152
5	Gasket	Chloroprene (Neoprene)			
6	Strainer element	Stainless steel 150µ	1.4301	A304	SUS304
7	Plug	Steel			
8	Plug 1/2" RG for butt weld 1/2" NPT for socket weld	Stainless steel	A2-70 EN 24017	A320	A2-70

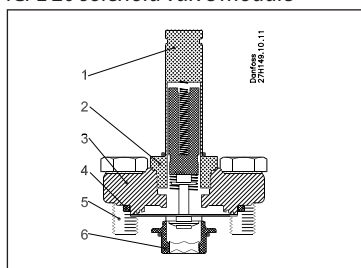
**Material specification**  
(continued)

*ICFF 20E extended strainer module*



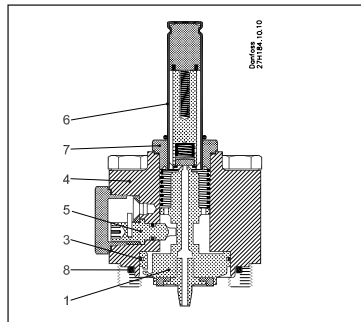
Pos.	Part	Material	EN	ASTM	JIS
1	Dirt protection plug	Steel	11SMn30 EN 10087	Grade 1213 A29	G4804
2	Bonnet	Steel	11SMn30 EN 10087	Grade 1213 A29	G4804
3	Hex-head bolt M12x80	Stainless steel	A2-70 EN 1515-1	Grade B8 A320	A2-70 B1054
4	Flange	Steel	P285QH; EN 10222-4 G20Mn5QT; EN 10213-3	LF2 - A350 LCC - A352	SFL2 - G3205 SCPL1 - G5152
5	Gasket	Chloroprene (Neoprene)			
6	Strainer element	Stainless steel 250µ	1.4301	A304	SUS304
7	Plug 1/2" NPT	Steel	11SMn30 EN 10087	Grade 1213 A29	G4804
8	Strainer adaptor	Steel	11SMn30 EN 10087	Grade 1213 A29	G4804

*ICFE 20 solenoid valve module*



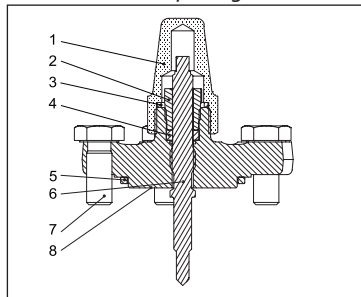
Pos.	Part	Material	EN	ASTM	JIS
1	Armature tube	Stainless steel	X2CrNi19-11 EN 10088		
2	Armature tube nut	Stainless steel	X8CrNiS18-9 EN 10088		
3	Flange	Cast Steel low tem- perature	G20Mn5QT EN 10213-3	A352	G5152
4	Gasket	Chloroprene (Neoprene)			
5	Hex-Head bolt M10 x 25	Stainless steel	A2-70 EN 24017	A320	A2-70
6	Seat	High density polymer			

*ICFE 20H solenoid valve module*



Pos.	Part	Material	EN	ASTM	JIS
1	Piston	Steel	11SMn30 EN EN 10025		
2	Seat	Teflon			
3	Piston ring				
4	Bonnet cylinder	Steel	P285QH EN 10222	A350	G3205
5	Manual opener	Steel			
6	Armature tube	Stainless steel	X2CrNi19-11 EN10028		
7	Armature tube nut	Stainless steel	X2CrNi19-11 EN10216	A320	A2-70
8	Gasket	Chloroprene (Neo- prene)			

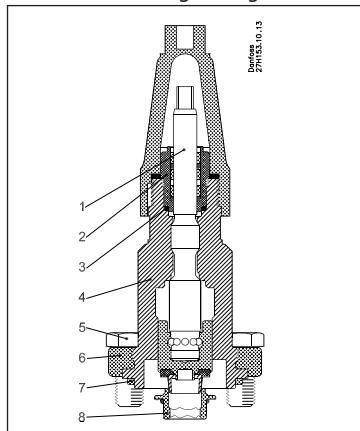
*ICFO 20 manual opening module*



Pos.	Part	Material	EN	ASTM	JIS
1	Seal cap	Steel	DIN 1651-9SMn28 TLP surface treatment	1213 (SAE)	SUM 22
2	Gland nut	Steel	DIN 1651 9SMn28 Zinc Chromate Surface treatment	1213 (SAE)	SUM 22
3	Seal cap gasket	Nylon	Polyamid A6	Polyamid PA6	Polyamid PA6
4	Sealing ring	Teflon	PTFE	PTFE	PTFE
5	Rubber gasket	Chloroprene rubber	CR	CR	CR
6	Spindle	Stainless steel	X8CrNiS 18-9 EN 10088	G4303 G4304	SUS 303
7	Hex-head bolt M10 x 25	Stainless steel	A2-70 EN 24017	A320	A2-70
8	Flange	Cast steel low tem- perature	EN10222-4 P285QH		

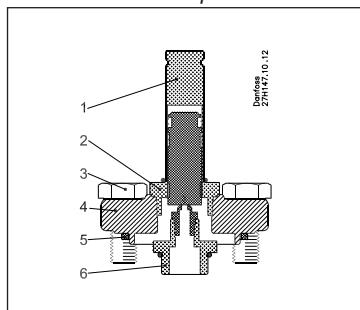
**Material specification**  
(continued)

*ICFR 20 manual regulating valve module*



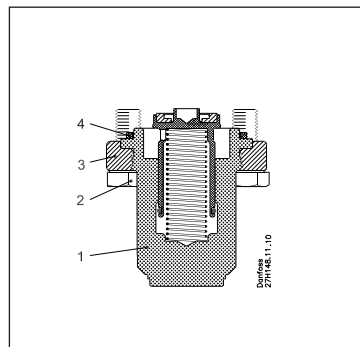
Pos.	Part	Material	EN	ASTM	JIS
1	Spindle	Stainless steel	X8CrNiS 18-9 EN 10088		G4303 G4304
2	Thread part	Stainless steel	X8CrNiS 18-9 EN 10088		G4303 G4304
3	AL-gasket		AL99 alloy no. 1200 DIN 1712 BL.3		
4	Bonnet	Steel	S235JRG2 EN 10025	A283	G3101
5	Hex-head bolt M10 × 25	Stainless steel	A2-70 EN 24017	A320	A2-70
6	Flange	Cast steel low temperature	G20Mn5QT EN 10213-3	A352	G5152
7	Gasket	Chloroprene (Neoprene)			
8	Seat	High density polymer			

*ICFA 20 electronic expansion valve module*



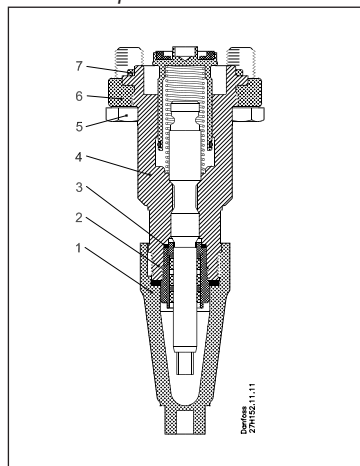
Pos.	Part	Material	EN	ASTM	JIS
1	Armature tube	Stainless steel	X2CrNi19-11 EN 10088		
2	Armature tube nut	Stainless steel	X8CrNiS18-9 EN 10088		
3	Hex-head bolt M10 × 25	Stainless steel	A2-70 EN 24017	A320	A2-70
4	Flange	Cast steel low temperature	G20Mn5QT EN 10213-3	A352	G5152
5	Gasket	Chloroprene (Neoprene)			
6	Adaptor	Steel			

*ICFC 20 check valve module*



Pos.	Part	Material	EN	ASTM	JIS
1	Bonnet	Steel	S235JRG2	A283	G3101
2	Hex-head bolt M10 × 25	Stainless steel	A2-70 EN 24017	A320	A2-70
3	Flange	Cast steel low temperature	G20Mn5QT EN 10213-3	A352	AG5152
4	Gasket	Chloroprene (Neoprene)			

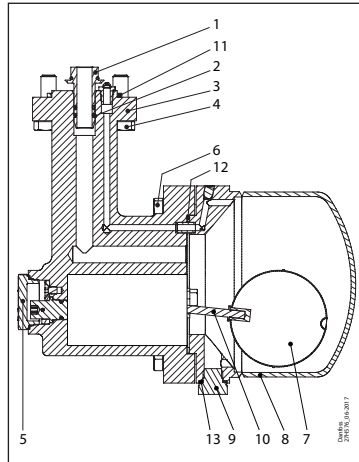
*ICFN 20 stop & check valve module*



Pos.	Part	Material	EN	ASTM	JIS
1	Spindle	Stainless steel	X8CrNiS 18-9 EN 10088		G4303 G4304
2	Thread part	Stainless steel	X8CrNiS 18-9 EN 10088		G4303 G4304
3	AL-gasket		AL99 alloy no. 1200 DIN 1712 BL.3		
4	Bonnet	Steel	S235JRG2 EN 10025	A283	G3101
5	Hex-head bolt M10 × 25	Stainless steel	A2-70 EN 24017	A320	A2-70
6	Flange	Cast steel low temperature	G20Mn5QT EN 10213-3	A352	G5152
7	Gasket	Chloroprene (Neoprene)			

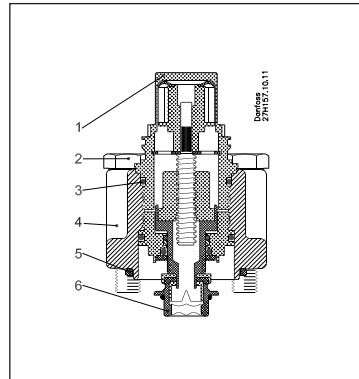
**Material specification**  
(continued)

*ICFD 20 defrost module*



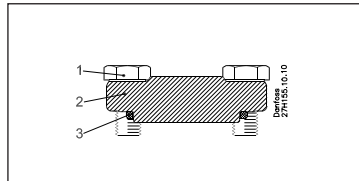
Pos.	Part	Material	EN	ASTM	JIS
1	Inlet connector	steel	S235JR EN 10025 - 2	A283	G3101
2	O-ring Inlet connector	Chloroprene			
3	Valve Body	Cast Iron	EN-GJS-400-18-LT EN 1563		
4	Hex-head bolt M10x30	Stainless Steel	A2-70 EN 24017	A320	A2-70
5	Union nut	Stainless Steel	X8CrNi518-9 EN 10088-3	AISI303	SUS303
6	Hex-head bolt M10x35	Stainless Steel	A2-70 EN 24017	A320	A2-70
7	Float	Stainless Steel	S.S 316		
8	Float housing	Stainless Steel	X5CrNi18-10 EN 10088-2	AISI 304	SUS304
9	Drain plug 1/4" G	Steel	115MnPb30 EN 10087		
10	Float lever	Steel	S235JR EN 10025 - 2	A283	G3101
11	Rubber Gasket	Chloroprene (Neoprene)			
12	Gasket	Fibre, Non Asbestos			
13	Gasket - Drain Plug	AL 99F11			

*ICM 20-A, 20-B or 20-C motor operated valve module*



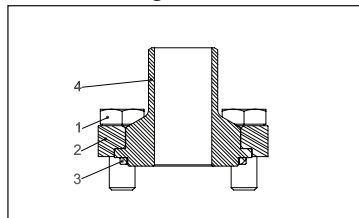
Pos.	Part	Material	EN	ASTM	JIS
1	Adapter	Stainless steel	X5CrNi18-10 EN 10088	A240	G4303 G4304
2	Hex-head bolt M10 x 50	Stainless steel	A2-70 EN 24014	A320	A2-70
3	O-ring	Chloroprene			
4	Bonnet	Cast steel low temperature	G20Mn5QT EN 10213-3	A352	G5152
5	Gasket	Chloroprene (Neoprene)			
6	Seat	High density polymer			

*ICFB 20 blind top cover*



Pos.	Part	Material	EN	ASTM	JIS
1	Hex-head bolt M10 x 25	Stainless Steel	A2-70 EN 24017	A320	A2-70
2	Flange	Cast steel low temperature	G20Mn5QT EN 10213-3	A352	G5152
3	Gasket	Chloroprene (Neoprene)			

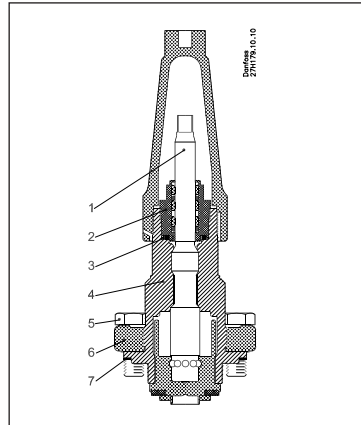
*ICFW 20 welding module, 20 DIN or 3/4" SOC*



Pos.	Part	Material	EN	ASTM	JIS
1	Hex-head bolt M10 x 25	Stainless Steel	A2-70 EN 24017	A320	A2-70
2	Flange	Cast steel low temperature	G20Mn5QT EN 10213-3	A352	G5152
3	Gasket	Chloroprene (Neoprene)			
4	Weld connection	Steel	S355J2+N EN 10025-2	A572-50	G3106 SM49

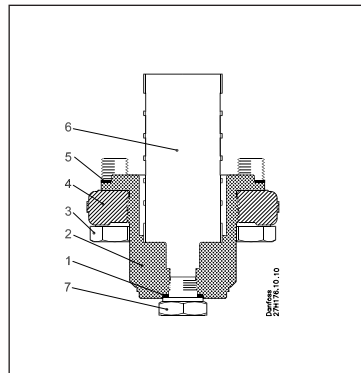
**Material specification**  
(continued)

*ICFS 25 shut-off valve module*



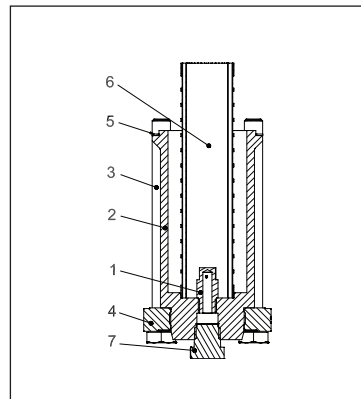
Pos.	Part	Material	EN	ASTM	JIS
1	Spindle	Stainless steel	X8CrNiS 18-9 EN 10088		G4303 G4304
2	Thread part	Stainless steel	X8CrNiS 18-9 EN 10088		G4303 G4304
3	O-ring	Chloroprene			
4	Bonnet	Steel	S235JRG2 EN 10025	A283	G3101
5	Hex-head bolt M12 x 30	Stainless steel	A2-70 EN 24017	A320	A2-70
6	Flange	Cast steel low temperature	G20Mn5QT EN 10213-3	A352	G5152
7	Gasket	Fiber non asbestos			

*ICFF 25 strainer module*



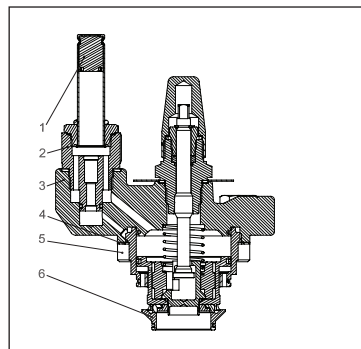
Pos.	Part	Material	EN	ASTM	JIS
1	Al. Gasket	AL 99 F11			
2	Bonnet	Steel	S235JRG2 EN 10025	A283	G3101
3	Hex-head bolt M12 x 30	Stainless steel	A2-70 EN 24017	A320	A2-70
4	Flange	Cast steel low temperature	G20Mn5QT EN 10213-3	A352	G5152
5	Gasket	Fiber non asbestos			
6	Strainer element	Stainless steel 150µ	1.4301	A304	SUS304
7	Plug 1/2" RG for butt weld 1/2" NPT for socket weld	Stainless steel	A2-70 EN 24017	A320	A2-70

*ICFF 25E extended strainer module*



Pos.	Part	Material	EN	ASTM	JIS
1	Dirt protection plug	Steel	11SMn30 EN 10087	Grade 1213 A29	G4804
2	Bonnet	Steel	11SMn30 EN 10087	Grade 1213 A29	G4804
3	Hex-head bolt M12x140	Stainless steel	A2-70 EN 1515-1	Grade B8 A320	A2-70 B1054
4	Flange	Steel	P285QH; EN 10222-4 G20Mn5QT; EN 10213-3	LF2 - A350 LCC - A352	SFL2 - G3205 SCPL1 - G5152
5	Gasket	Fiber non asbestos			
6	Strainer element	Stainless steel 250µ	1.4301	A304	SUS304
7	Plug 1/2" NPT	Steel	11SMn30 EN 10087	Grade 1213 A29	A29

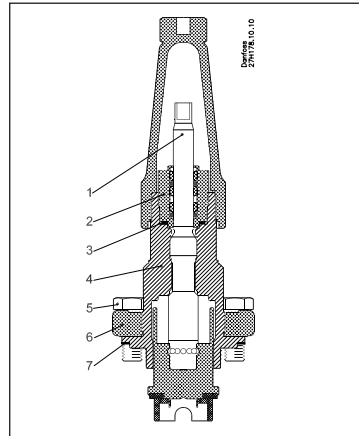
*ICFE 25 solenoid valve module*



Pos.	Part	Material	EN	ASTM	JIS
1	Armature tube	Stainless steel	X2CrNi19-11 EN 10088		
2	Armature tube nut	Stainless steel	X8CrNiS18-9 EN 10088		
3	Bonnet	Cast steel low temperature	G20Mn5QT EN10213-3	A352	G5152
4	Gasket	Fiber non asbestos			
5	Hex-Head bolt M10 x 25	Stainless steel	A2-70 EN 24017	A320	A2-70
6	Seat	High density polymer			

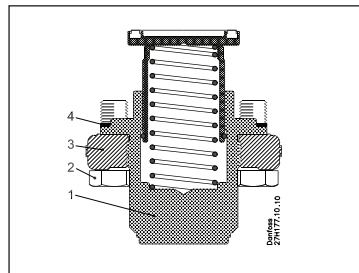
**Material specification**  
(continued)

*ICFR 25 manual regulating valve module, A or B*



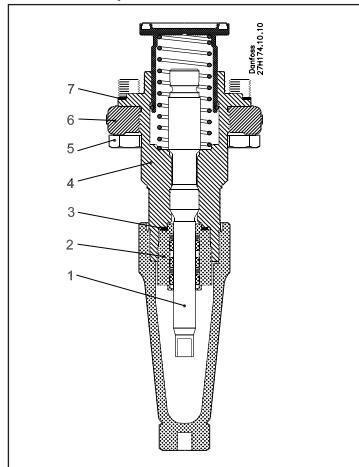
Pos.	Part	Material	EN	ASTM	JIS
1	Spindle	Stainless steel	X8CrNiS 18-9 EN 10088		G4303 G4304
2	Thread part	Stainless steel	X8CrNiS 18-9 EN 10088		G4303 G4304
3	O-ring	Chloroprene			
4	Bonnet	Steel	S235JRG2 EN 10025	A283	G3101
5	Hex-head bolt M12 × 30	Stainless steel	A2-70 EN 24017	A320	A2-70
6	Flange	Cast steel low tem- perature	G20Mn5QT EN 10213-3	A352	G5152
7	Gasket	Fiber non asbestos			
8	Seat	High density polymer			

*ICFC 25 check valve module*



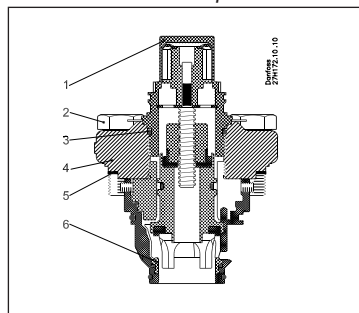
Pos.	Part	Material	EN	ASTM	JIS
1	Bonnet	Steel	S235JRG2	A283	G3101
2	Hex-head bolt M12 × 30	Stainless steel	A2-70 EN 24017	A320	A2-70
3	Flange	Cast steel low tem- perature	G20Mn5QT EN 10213-3	A352	AG5152
4	Gasket	Fiber non asbestos			

*ICFN 25 stop & check valve module*



Pos.	Part	Material	EN	ASTM	JIS
1	Spindle	Stainless steel	X8CrNiS 18-9 EN 10088		G4303 G4304
2	Thread part	Stainless steel	X8CrNiS 18-9 EN 10088		G4303 G4304
3	O-ring	Chloroprene			
4	Bonnet	Steel	S235JRG2 EN 10025	A283	G3101
5	Hex-head bolt M12 × 30	Stainless steel	A2-70 EN 24017	A320	A2-70
6	Flange	Cast steel low tem- perature	G20Mn5QT EN 10213-3	A352	G5152
7	Gasket	Fiber non asbestos			

*ICM 25-A or B motor operated valve module*

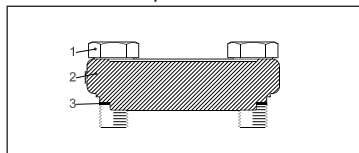


Pos.	Part	Material	EN	ASTM	JIS
1	Adapter	Stainless steel	X5CrNi18-10 EN 10088	A240	G4303 G4304
2	Hex-head bolt M12 × 30	Stainless steel	A2-70 EN 24014	A320	A2-70
3	O-ring	Chloroprene			
4	Bonnet	Cast steel low tem- perature	G20Mn5QT EN 10213-3	A352	G5152
5	Gasket	Fiber non asbestos			
6	Seat	High density polymer			



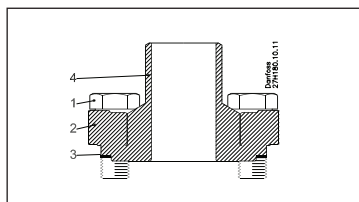
**Material specification**  
(continued)

*ICFB 25 blind top cover*



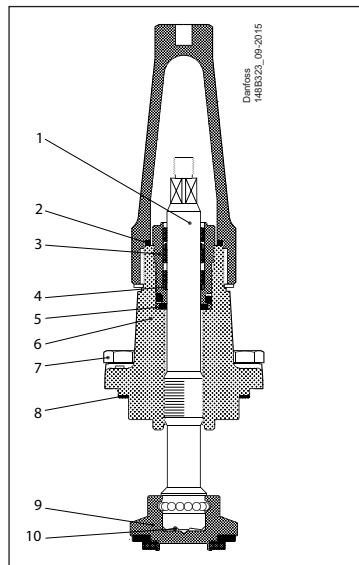
Pos.	Part	Material	EN	ASTM	JIS
1	Hex-head bolt M10 x 25	Stainless Steel	A2-70 EN 24017	A320	A2-70
2	Flange	Cast steel low temperature	G20Mn5QT EN 10213-3	A352	G5152
3	Gasket	Fiber non asbestos			

*ICFW 25 welding module, 25 DIN or 25 (1") SOC*



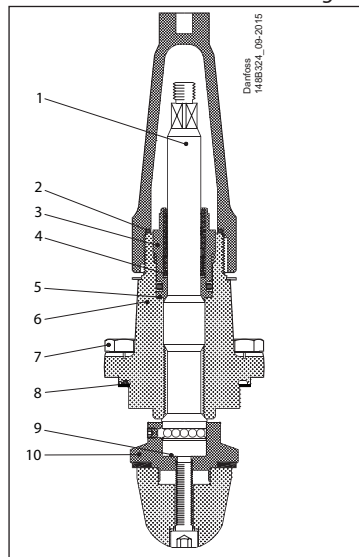
Pos.	Part	Material	EN	ASTM	JIS
1	Hex-head bolt M10 x 25	Stainless Steel	A2-70 EN 24017	A320	A2-70
2	Flange	Cast steel low temperature	G20Mn5QT EN 10213-3	A352	G5152
3	Gasket	Fiber non asbestos			
4	Weld connection	Steel	S355J2+N EN 10025-2	A572-50	G3106 SM49

*SVA-S 50 / SVA-S 65 shut-off valve module*



Pos.	Part	Material	EN	ASTM
1	Spindle	Stainless steel	X8CrNiS18-9 10088	AISI 303
2	Gasket for cap	Nylon		
3	Packing gland	Stainless steel	X8CrNiS18-9 10088	AISI 303
4	Spring loaded Teflon ring	PTFE		
5	Packing washer	Aluminium		
6	Bonnet	Steel	P285QH+QT, EN 10222-4	LF2, A350
7	Bolts	Stainless steel	A2-70	Type 308
8	Gasket	Fiber, non asbestos		
9	Cone	Steel	115Mn30 10087	AISI 1213
10	Disk spring	Steel		

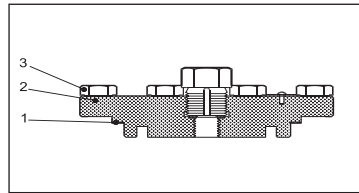
*REG-SB 50 / REG-SB 65 manual regulating valve module*



Pos.	Part	Material	EN	ASTM
1	Spindle	Stainless steel	X8CrNiS 18-9, 17440	AISI 303
2	Gasket for cap	Nylon		
3	Packing gland	Stainless Steel	X8CrNiS 18-9, 10088	AISI 303
4	Spring loaded Teflon ring	PTFE		
5	Packing washer	Aluminium		
6	Bonnet	Steel	P285QH+QT 10222-4	LF2 A350
7	Bolts	Stainless steel	A2-70	Type 308
8	Gasket	Fiber, non asbestos		
9	Disk spring	Steel		
10	Cone	Steel		

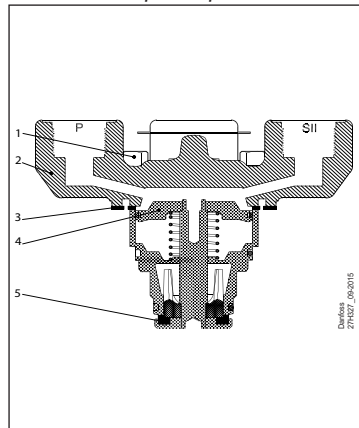
**Material specification**  
(continued)

*ICFB 50 blind top cover*



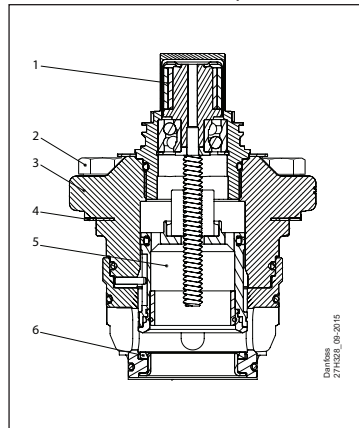
Pos.	Part	Material	EN	ASTM	JIS
1	Gasket	Fiber non asbestos			
2	Flange	Cast steel low temperature	G20Mn5QT EN 10213-3	A352	G5152
3	Hex-head bolt M10 x 25	Stainless Steel	A2-70 EN 24017	A320	A2-70

*ICS 50 / ICS 65 pilot-operated valve module*



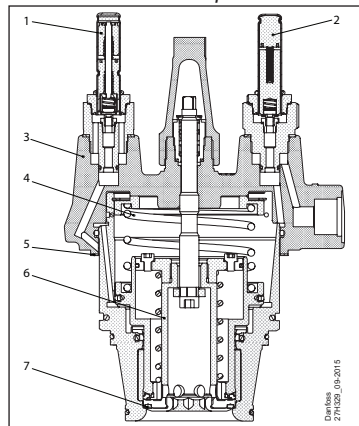
Pos.	Part	Material	EN	ASTM
1	Bolts	Stainless steel	A2-70, EN 1515-1	Grade B8 A320
2	Bonnet	Low temperature steel	G20Mn5QT, EN 10213-3 P285QH+QT EN 10222-4	LCC A352 LF2, A350
3	Gasket	Fiber, non-asbestos		
4	Piston	Steel		
5	Valve plate	PTFE		

*ICM 50 / ICM 65 motor operated valve module*



Pos.	Part	Material	EN	ASTM
1	Adaptor	Stainless steel	X5CrNi18-10 EN 10088	A240
2	Bolts	Stainless steel	A2-70, EN 1515-1	Grade B8 A320
3	Bonnet	Low temperature steel	G20Mn5QT, EN 10213-3	LCC A352
4	Gasket	Fiber, non-asbestos		
5	Piston	Steel		
6	Valve plate	PTFE		

*ICLX 50 / ICLX 65 2-step solenoid valve module*



Pos.	Part	Material	EN	ASTM
1	EVM pilot NO			
2	EVM pilot NC			
3	Bonnet	Low temperature steel	P285QH, EN 10222-4	LF2, A350
4	Spring	Stainless steel		
5	Gasket	Fiber, non-asbestos		
6	Main piston	Steel		
7	Seat plate main	PTFE		

## Code number selection

To determine the correct ICF valve station follow steps 1 through 5.

### Step 1 Determine application and function requirements:

- Line: Pumped liquid, Liquid Injection, Hot gas defrost, Liquid DX, Return line etc.
- Control: On/off solenoid valve, motorised valve
- Defrost: Electric or hot gas

From the above determine the application reference number (see page 23):

### Step 2 Selection criteria - (Please use Danfoss calculation software)

Download the software from:

<http://refrigerationandairconditioning.danfoss.com/support-center/apps-and-software/coolselector/>

- Refrigerant
- Capacity
- Temperature
- Circulation rate

From the above determine the valve station required, e.g.: ICF 20 complete with ICM 20-C

### Step 3 Establish connection sizes and type

- DIN butt-weld, ANSI butt-weld or SOC weld
- 15 (½"), 20 (¾ in.), 25 (1 in.), 32 (1 ¼ in.) or , 40 (1½ in.), 50 (2 in.), 65 (2½ in.) or 80 (3 in.)

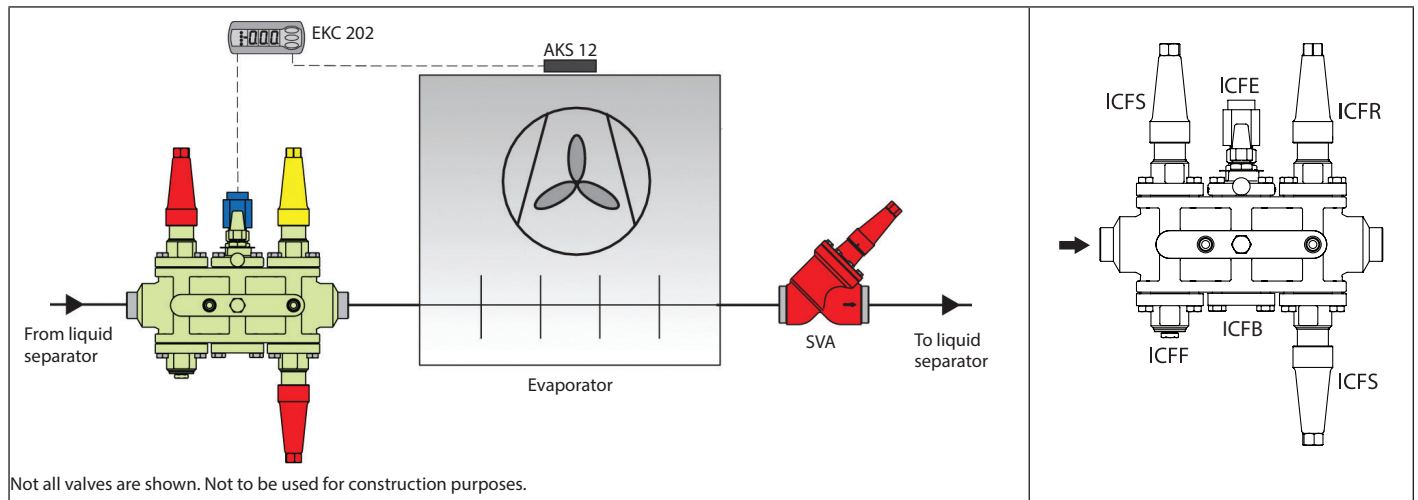
### Step 4 Establish code number

(see pages 24 to 29)

**Data sheet | Valve station, ICF 15, ICF 20, ICF 25, ICF 50 and 65**

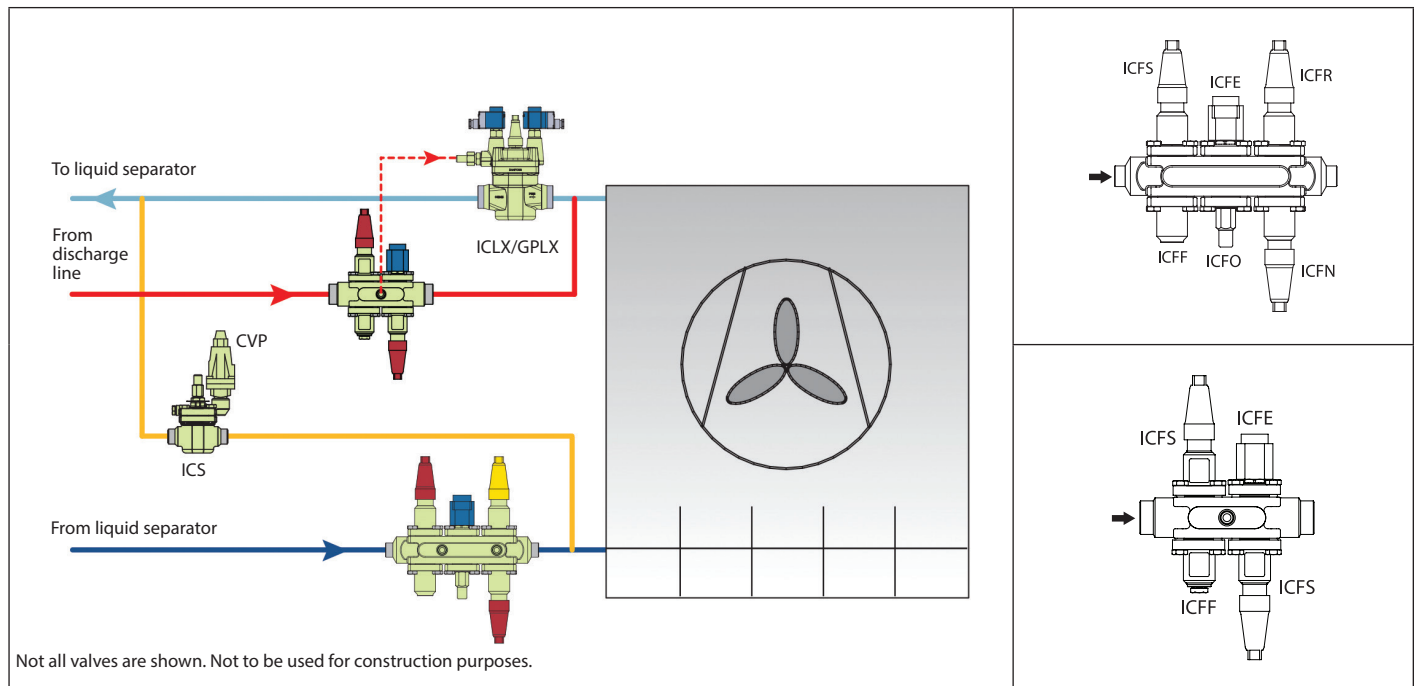
*Example of application:  
Liquid feed line*

A valve combination for a flooded evaporator operating on/off from a thermostat and with electric defrost is required. Manual override of the solenoid valve is requested. Common ICF configurations for this kind of application is shown here:



*Example of application:  
Liquid feed line/  
Hot gas defrost line*

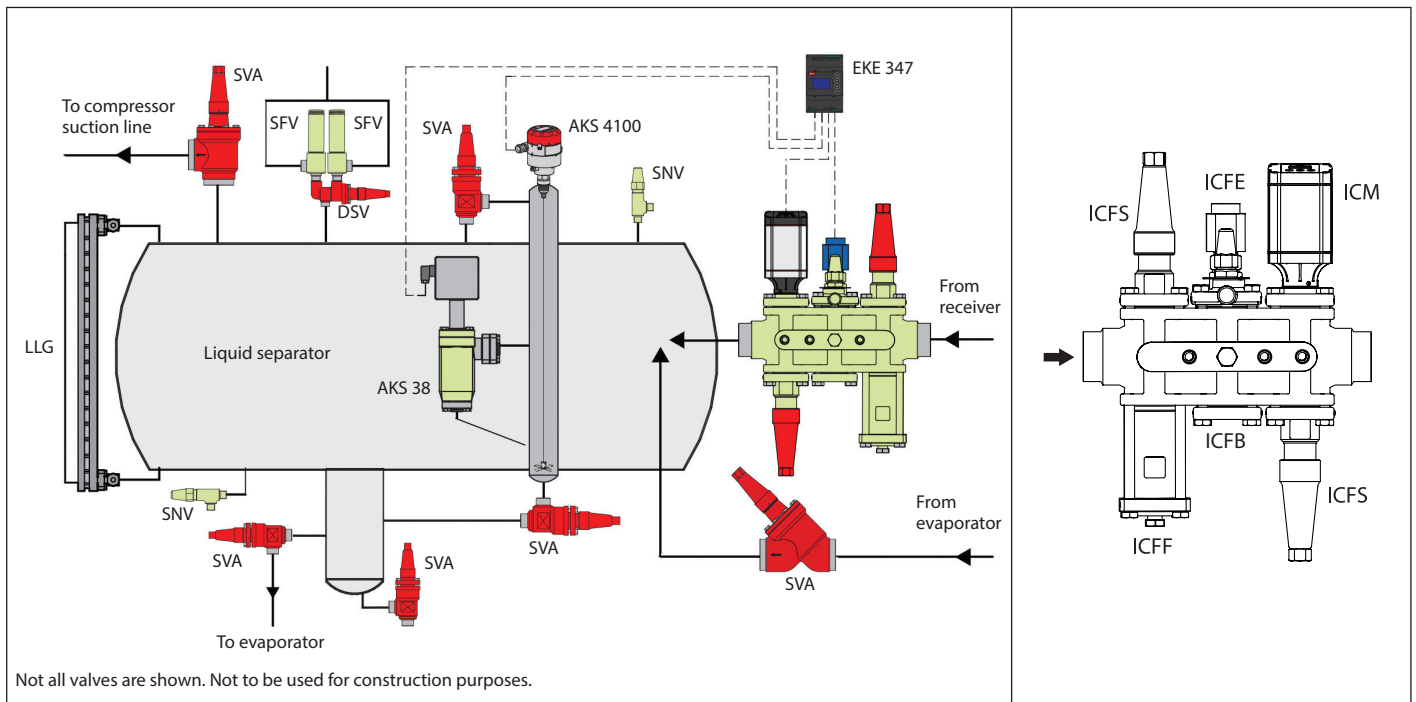
Evaporator with 2 stage gas powered valve ICLX in the suction line and hot gas defrost featuring: ICF liquid feed station and ICF Hot gas station with side port to power ICLX. ICS+CVP as a defrost regulator (OVF optional depending on capacity).



**Data sheet | Valve station, ICF 15, ICF 20, ICF 25, ICF 50 and 65**

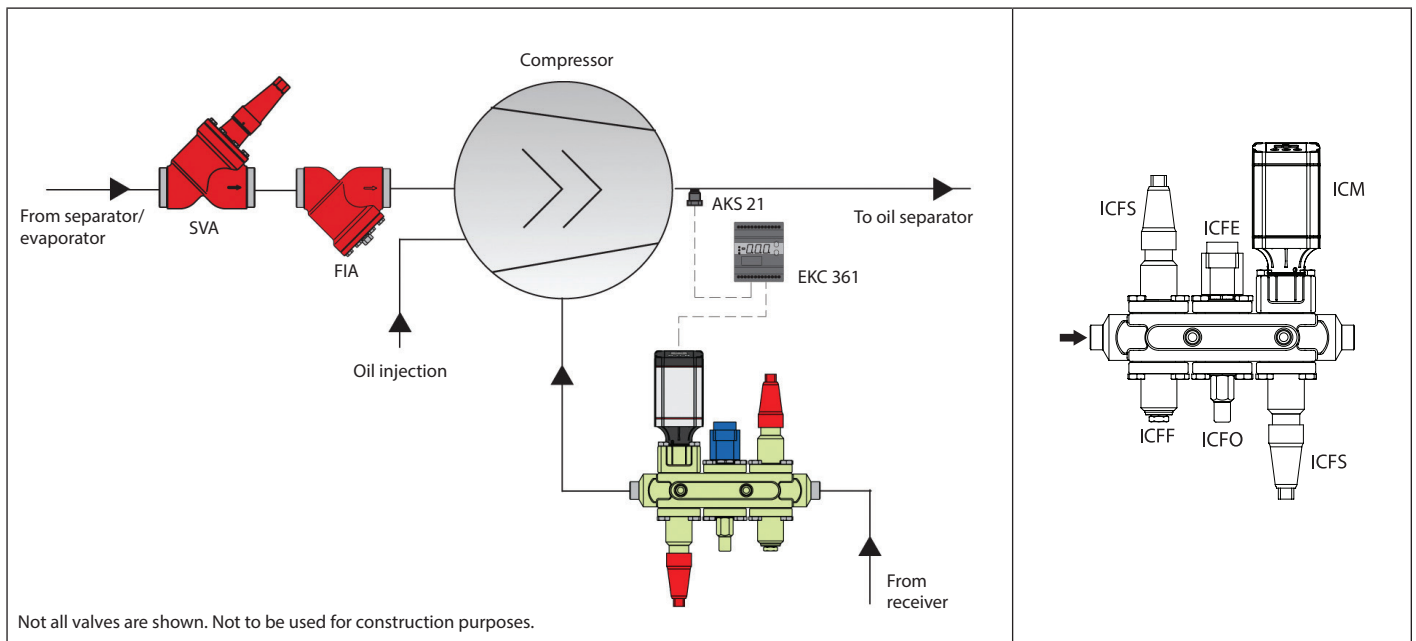
*Example of application:  
Liquid injection line*

A valve combination for liquid injection to separator with electronic injection valve is required. It is requested to have a solenoid valve in front of the control valve.



*Example of application:  
Liquid injection line*

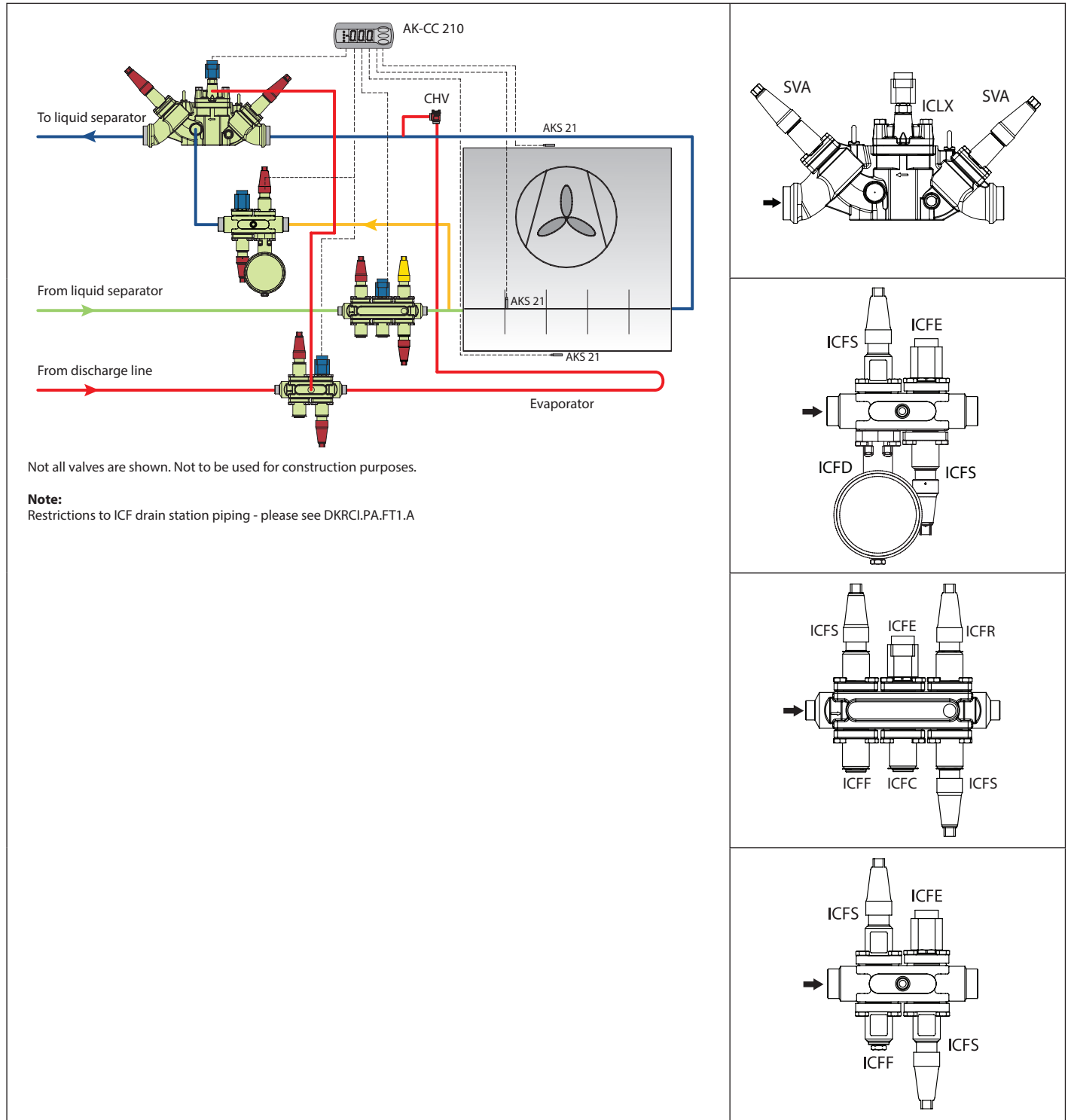
A valve combination for compressor liquid injection with electronic injection valve is required. It is a requested to have a solenoid valve in front of the control valve.



**Data sheet | Valve station, ICF 15, ICF 20, ICF 25, ICF 50 and 65**

*Example of application:  
Liquid feed line/Hot gas defrost  
line Return line/Defrost drain  
line*

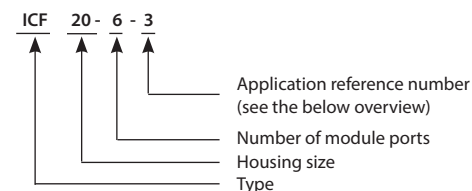
Evaporator with 2 stage gas powered ICLX module in suction line ICF and ICF liquid feed valve station. Hot gas defrost featuring: ICF hot gas valve station with side port to power ICLX module and ICF drain station with float activated liquid drainage to suction line ICF side port.



**Ordering ICF valve station**

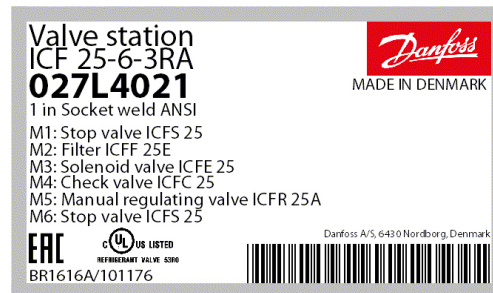
Below Nomenclature show the generic configuration and application by identification of housing size, type and application group.

This designation is often used for discussion on possible solutions and will be the final identification on the valve label (see label example)



For ordering, connection size and type must be chosen to get the final identification. **The final identification is done by code number only** (see next pages)

Label example:


**Application overview (generic configuration - connection type and size excluded)**

Application #		Sequence of functions					
<b>Liquid feed</b>							
1	Liquid feed (No hotgas defrost)	Shut-off	Strainer	Solenoid	Man Open	Regul.	Shut-off
2	Liquid feed	Shut-off	Strainer	Solenoid	Man Open	Regul.	Stop & check
3	Liquid feed	Shut-off	Strainer	Solenoid	Check	Regul.	Shut-off
10	Liquid feed (No hotgas defrost)	Shut-off	Strainer	Solenoid	Regul.		
15	Liquid feed w. external Conn.	Shut-off	Strainer	Solenoid	Check	Welding	Regul.
<b>Solenoid common</b>							
4	Solenoid - Liquid & Hot gas lines	Shut-off	Strainer	Solenoid	Man Open	Shut-off	
8	Solenoid - Liquid & Hot gas lines	Shut-off	Strainer	Solenoid	Man Open		
<b>Liquid injection</b>							
5	Liquid injection (expansion)	Shut-off	Strainer	Solenoid	Man Open	Motor	Shut-off
12	Liquid injection (expansion) PWM	Shut-off	Strainer	El. Exp.	Shut-off		
14	Liquid injection (expansion)	Shut-off	Strainer	Motor	Shut-off		
<b>Hot gas defrost</b>							
9	Hot gas defrost	Shut-off	Strainer	Solenoid	Shut-off		
<b>Solenoid multiple evaporators</b>							
11	Solenoid - Multiple evaporators	Shut-off	Strainer	Solenoid	Check		
18	Solenoid - Multiple evaporators	Shut-off	Strainer	Solenoid	Stop & check		
<b>Liquid PWM</b>							
13	Liquid injection & liquid feed PWM	Shut-off	Strainer	El. Exp.	Stop & check		
<b>Return line (ICF 50 and ICF 65 only)</b>							
41	ON/OFF 2-step solenoid	Shut-off	Strainer option*	Solenoid	Shut-off		
42	Pressure (temperature) Mechanical control	Shut-off	Strainer option*	ICS options**	Shut-off		
43	Pressure (temperature) Electronic control	Shut-off	Strainer option*	Motor	Shut-off		
44	ON/OFF 2-step solenoid + Manuel Regulating	Shut-off	Strainer option*	Solenoid	Regul.		
45	Pressure (temperature) Mechanical control + Manuel Regulating	Shut-off	Strainer option*	ICS options**	Regul.		
46	Pressure (temperature) Electronic control + Manuel Regulating	Shut-off	Strainer option*	Motor	Regul.		

\* ICF 50 only

\*\* ICS typical options: On/Off solenoid, Pressure or Temperature control (see ICS data sheet)

**Miscellaneous**

90	Multipurpose configurations						
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**Defrost drain line**

102	Liquid drain M2 with solenoid - 2 shut-off	Shut-off	Liquid drain	Solenoid	Shut-off		
103	Liquid drain M4 with solenoid - 1 shut-off	Shut-off	Solenoid	Liquid drain			

## Liquid feed

### Application 1: Liquid feed (no hot gas defrost)

Type	# of modules	Appl. #	Connection size		Connection type		Module location						Weight		Code number
			[in.]	[mm]			M1	M2	M3	M4	M5	M6	kg	lbs	
ICF 20	6	1RA	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20	ICFE 20	ICFO 20	ICFR 20A	ICFS 20	10.4	22.9	027L3005
ICF 20	6	1RA	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20	ICFR 20A	ICFS 20	9.9	21.8	027L3007
ICF 20	6	1HRB	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFB 20	ICFR 20B	ICFS 20	10.9	24.0	027L3408
ICF 25	6	1RA	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFB 25	ICFR 25A	ICFS 25	24.1	53.0	027L4003
ICF 20	6	1RA	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20	ICFR 20A	ICFS 20	10.1	22.2	027L3008
ICF 20	6	1HRB	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFB 20	ICFR 20B	ICFS 20	10.9	24.0	027L3409
ICF 25	6	1RA	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFB 25	ICFR 25A	ICFS 25	23.8	52.4	027L4008
ICF 25	6	1RB	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFB 25	ICFR 25B	ICFS 25	24.2	53.2	027L4013
ICF 25	6	1RB	1½	40	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFB 25	ICFR 25B	ICFS 25	23.8	52.4	027L4017

### Application 2: Liquid feed

Type	# of Modules	Appl. #	Connection size		Connection type		Module location						Weight		Code number
			[in.]	[mm]			M1	M2	M3	M4	M5	M6	kg	lbs	
ICF 20	6	2RA	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20	ICFR 20A	ICFN 20	10.1	22.2	027L3014
ICF 20	6	2RA	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20	ICFR 20A	ICFN 20	9.9	21.8	027L3016
ICF 20	6	2HRB	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFB 20	ICFR 20B	ICFN 20	8.8	19.4	027L3412
ICF 20	6	2RA	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20	ICFR 20A	ICFN 20	9.9	21.8	027L3017
ICF 20	6	2HRB	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFB 20	ICFR 20B	ICFN 20	10.9	24.0	027L3413

### Application 3: Liquid feed

Type	# of Modules	Appl. #	Connection size		Connection type		Module location						Weight		Code number
			[in.]	[mm]			M1	M2	M3	M4	M5	M6	kg	lbs	
ICF 20	6	3RA	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFC 20	ICFR 20A	ICFS 20	10.0	22.0	027L3023
ICF 20	6	3HRB	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFC 20	ICFR 20B	ICFS 20	10.7	23.5	027L3418
ICF 20	6	3RA	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFC 20	ICFR 20A	ICFS 20	10.0	22.0	027L3025
ICF 20	6	3HRB	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFC 20	ICFR 20B	ICFS 20	11.2	24.6	027L3416
ICF 25	6	3RA	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFC 25	ICFR 25A	ICFS 25	24.2	53.2	027L4021
ICF 20	6	3RA	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFC 20	ICFR 20A	ICFS 20	10.1	22.2	027L3026
ICF 20	6	3HRB	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFC 20	ICFR 20B	ICFS 20	11.3	24.9	027L3417
ICF 25	6	3RA	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFC 25	ICFR 25A	ICFS 25	24.1	53.0	027L4026
ICF 25	6	3RB	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFC 25	ICFR 25B	ICFS 25	24.1	53.0	027L4031
ICF 25	6	3RB	1½	40	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFC 25	ICFR 25B	ICFS 25	24.2	53.2	027L4035

ICAD and coils are not included and must be ordered separately.

**Please Note:** When used in systems with CO<sub>2</sub>, the o-rings on the ICM module can swell (grow). At service, it is therefore recommended to install new o-rings, before the ICM function module is re-installed in the ICF valve body.

ICAD and coils are not included and must be ordered separately.



## Liquid feed

### Application 10: Liquid feed (no hot gas defrost)

Type	# of Modules	Appl. #	Connection size		Connection type		Module location				Weight		Code number	
			[in.]	[mm]			M1	M2	M3	M4	kg	lbs		
ICF 15	4	10HRB	½	15	Socket weld, ANSI (B 16.11)	S	ICFS 15*	ICFF 15*	ICFE 20H	ICFR 20B		7.0	15.4	027L4530
ICF 20	4	10RA	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFR 20A		7.0	15.4	027L3078
ICF 20	4	10HRB	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFR 20B		8.4	18.5	027L3404
ICF 20	4	10RA	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFR 20A		6.9	15.2	027L3080
ICF 20	4	10HRB	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFR 20B		7.8	17.2	027L3402
ICF 25	4	10RA	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFR 25A		15.8	34.8	027L4077
ICF 20	4	10RA	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFR 20A		7.0	15.4	027L3081
ICF 20	4	10HRB	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFR 20B		8.1	17.8	027L3403
ICF 25	4	10RA	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFR 25A		12.7	27.9	027L4082
ICF 25	4	10RB	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFR 25B		16.2	35.6	027L4087
ICF 25	4	10RB	1½	40	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFR 25B		16.2	35.6	027L4091

### Application 15: Liquid feed with external connection

Type	# of Modules	Appl. #	Connection size		Connection type		Module location						Weight		Code number
			[in.]	[mm]			M1	M2	M3	M4	M5	M6	kg	lbs	
ICF 25	6	15RA	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFC 25	ICFW 25S	ICFR 25A	23.5	51.7	027L4122
ICF 25	6	15RB	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFC 25	ICFW 25S	ICFR 25B	23.6	51.9	027L4127
ICF 25	6	15RB	1½	40	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFC 25	ICFW 25S	ICFR 25B	23.7	52.1	027L4131

## Solenoid common

### Application 4: Solenoid - Liquid & hot gas lines

Type	# of Modules	Appl. #	Connection size		Connection type		Module location						Weight		Code number
			[in.]	[mm]			M1	M2	M3	M4	M5	M6	kg	lbs	
ICF 20	6	4	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20	ICFB 20	ICFS 20	9.4	20.7	027L3124
ICF 20	6	4	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20	ICFB 20	ICFS 20	9.3	20.5	027L3032
ICF 20	6	4	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20	ICFB 20	ICFS 20	9.5	20.9	027L3033

### Application 8: Solenoid - Liquid & hot gas lines

Type	# of Modules	Appl. #	Connection size		Connection type		Module location						Weight		Code number
			[in.]	[mm]			M1	M2	M3	M4	M5	M6	kg	lbs	
ICF 15	4	8	½	15	Socket weld, ANSI (B 16.11)	S	ICFS 15*	ICFF 15*	ICFE 20	ICFO 20			5.7	12.6	027L4526
ICF 20	4	8	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20			6.6	14.5	027L3366
ICF 20	4	8	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20			6.7	14.7	027L3064
ICF 20	4	8	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20			6.7	14.7	027L3065

\* Fixed module

ICAD and coils are not included and must be ordered separately.

**Please Note:** When used in systems with CO<sub>2</sub>, the o-rings on the ICM module can swell (grow). At service, it is therefore recommended to install new o-rings, before the ICM function module is re-installed in the ICF valve body.

ICAD and coils are not included and must be ordered separately.

## Liquid injection

### Application 5: Liquid injection (expansion)

Type	# of modules	Appl. #	Connection size		Connection type	Module location						Weight		Code number	
			[in.]	[mm]		M1	M2	M3	M4	M5	M6	kg	lbs		
ICF 20	6	5MA33	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20	ICM 20-A33	ICFS 20	10.1	22.2	027L3154
ICF 20	6	5MA	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20	ICM 20-A	ICFS 20	10.0	22.0	027L3038
ICF 20	6	5MB66	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20	ICM 20-B66	ICFS 20	10.5	23.1	027L3159
ICF 20	6	5MB	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20	ICM 20-B	ICFS 20	9.8	21.6	027L3127
ICF 20	6	5MA33	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20-E	ICFE 20	ICFO 20	ICM 20-A33	ICFS 20	10.1	22.2	027L3391
ICF 20	6	5MA	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20	ICM 20-A	ICFS 20	10.1	22.2	027L3040
ICF 20	6	5HMA	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFB 20	ICM 20-A	ICFS 20	11.4	25.1	027L3323
ICF 20	6	5MB66	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20	ICM 20-B66	ICFS 20	10.5	23.1	027L3160
ICF 20	6	5MB	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20	ICM 20-B	ICFS 20	10.0	22.0	027L3045
ICF 20	6	5HMB	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFB 20	ICM 20-B	ICFS 20	11.0	24.2	027L3326
ICF 20	6	5MC	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20	ICM 20-C	ICFS 20	10.0	22.0	027L3051
ICF 20	6	5HMC	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFB 20	ICM 20-C	ICFS 20	10.0	22.0	027L3330
ICF 25	6	5MA	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFB 25	ICM 25-A	ICFS 25	23.1	50.8	027L4039
ICF 25	6	5MA33	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25-E	ICFE 25	ICFB 25	ICM 25-A33	ICFS 25	22.0	48.5	027L4173
ICF 25	6	5MA	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFB 25	ICM 25-A	ICFS 25	23.2	51.0	027L4044
ICF 20	6	5MB66	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20-E	ICFE 20	ICFO 20	ICM 20-B66	ICFS 20	10.5	23.1	027L3392
ICF 25	6	5MB	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25-E	ICFE 25	ICFB 25	ICM 25-B	ICFS 25	23.2	51.1	027L4049
ICF 20	6	5MC	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20	ICM 20-C	ICFS 20	10.1	22.2	027L3052
ICF 20	6	5HMB	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20-E	ICFE 20-H	ICFB 20	ICM 20-B	ICFS 20	11.0	24.2	027L3393
ICF 25	6	5MA	1½	40	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFB 20	ICM 20-C	ICFS 20	11.0	24.2	027L3331
ICF 25	6	5MA33	1½	40	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25-E	ICFE 25	ICFB 25	ICM 25-A33	ICFS 25	22.0	48.5	027L4172
ICF 25	6	5MA	1½	40	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25-E	ICFE 25	ICFB 25	ICM 25-A33	ICFS 25	23.1	50.8	027L4132
ICF 25	6	5MB	1½	40	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25-E	ICFE 25	ICFB 25	ICM 25-B	ICFS 25	23.2	51.1	027L4053

### Application 12: Liquid injection (expansion) PWM

Type	# of modules	Appl. #	Connection size		Connection type	Module location						Weight		Code number	
			[in.]	[mm]		M1	M2	M3	M4	M5	M6	kg	lbs		
ICF 15	4	12	½	15	Socket weld, ANSI (B 16.11)	S	ICFS 15*	ICFF 15*	ICFA 20	ICFS 20			6.2	13.7	027L4528
ICF 20	4	12	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFA 20	ICFS 20			6.8	15.0	027L3091

### Application 14: Liquid injection (expansion)

Type	# of modules	Appl. #	Connection size		Connection type	Module location						Weight		Code number	
			[in.]	[mm]		M1	M2	M3	M4	M5	M6	kg	lbs		
ICF 15	4	14MA	½	15	Socket weld, ANSI (B 16.11)	S	ICFS 15*	ICFF 15*	ICM 20-A	ICFS 20			6.8	15.0	027L4531
ICF 15	4	14MB	½	15	Socket weld, ANSI (B 16.11)	S	ICFS 15*	ICFF 15*	ICM 20-B	ICFS 20			6.8	15.0	027L4583
ICF 20	4	14MA	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICM 20-A	ICFS 20			7.5	16.5	027L3099
ICF 20	4	14MA	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICM 20-A	ICFS 20			6.7	14.7	027L3101
ICF 20	4	14MB	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICM 20-B	ICFS 20			6.7	14.7	027L3106
ICF 25	4	14MB	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25	ICM 25-B	ICFS 25			14.4	31.7	027L4188
ICF 25	4	14MB	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICM 25-B	ICFS 25			17.3	38.1	027L4114
ICF 25	4	14MB	1½	40	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICM 25-B	ICFS 25			16.6	36.6	027L4118
ICF 20	4	14MC	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICM 20-C	ICFS 20			6.7	14.7	027L3112
ICF 25	4	14MA	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICM 25-A	ICFS 25			15.8	34.8	027L4104
ICF 20	4	14MC	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICM 20-C	ICFS 20			7.4	16.3	027L3113
ICF 25	4	14MA	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICM 25-A	ICFS 25			15.6	34.3	027L4109
ICF 25	4	14MA	1½	40	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICM 25-A	ICFS 25			15.8	34.8	027L4140

\* Fixed module

ICAD and coils are not included and must be ordered separately.

**Please Note:** When used in systems with CO<sub>2</sub>, the o-rings on the ICM module can swell (grow). At service, it is therefore recommended to install new o-rings, before the ICM function module is re-installed in the ICF valve body. ICAD and coils are not included and must be ordered separately.

## Hot gas defrost

### Application 9: Hot gas defrost

Type	# of Modules	Appl. #	Connection size		Connection type		Module location				Weight		Code number
			[in.]	[mm]			M1	M2	M3	M4	kg	lbs	
ICF 15	4	9	½	15	Socket weld, ANSI (B 16.11)	S	ICFS 15*	ICFF 15*	ICFE 20	ICFS 20	6.3	13.9	027L4538
ICF 15	4	9H	½	15	Socket weld, ANSI (B 16.11)	S	ICFS 15*	ICFF 15*	ICFE 20H	ICFS 20	7.2	15.4	027L4527
ICF 20	4	9H	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFS 20	8.0	17.6	027L3351
ICF 20	4	9	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFS 20	7.0	15.4	027L3071
ICF 20	4	9H	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFS 20	8.1	17.8	027L3336
ICF 25	4	9	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFS 25	16.0	35.2	027L4064
ICF 20	4	9	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFS 20	7.4	16.3	027L3072
ICF 20	4	9H	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFS 20	7.9	17.4	027L3337
ICF 25	4	9	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFS 25	16.0	35.2	027L4069
ICF 25	4	9	1½	40	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFS 25	16.1	35.4	027L4073

## Solenoid multiple evaporators

### Application 11: Solenoid - Multiple evaporators

Type	# of Modules	Appl. #	Connection size		Connection type		Module location				Weight		Code number
			[in.]	[mm]			M1	M2	M3	M4	kg	lbs	
ICF 20	4	11	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFN 20	6.9	15.2	027L3087
ICF 20	4	11H	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFN 20	8.0	17.6	027L3348
ICF 20	4	11	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFN 20	6.7	14.7	027L3088
ICF 20	4	11H	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFN 20	7.4	16.3	027L3349
ICF 25	4	11	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFN 25	13.0	28.6	027L4096
ICF 25	4	11	1½	40	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFN 25	14.3	31.5	027L4100

### Application 18: Solenoid - Multiple evaporators

Type	# of Modules	Appl. #	Connection size		Connection type		Module location				Weight		Code number
			[in.]	[mm]			M1	M2	M3	M4	kg	lbs	
ICF 15	4	18	½	15	Socket weld, ANSI (B 16.11)	S	ICFS 15*	ICFF 15*	ICFE 20	ICFN 20	6.5	14.3	027L4558
ICF 15	4	18H	½	15	Socket weld, ANSI (B 16.11)	S	ICFS 15*	ICFF 15*	ICFE 20-H	ICFN 20	7.2	15.8	027L4557
ICF 15	4	18	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFN 20	8.0	17.6	027L3353
ICF 25	4	18	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFN 25	16.9	37.2	027L4136
ICF 20	4	18H	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFN 20	8.0	17.6	027L3354
ICF 20	4	18H	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFN 20	8.0	17.6	027L3355
ICF 25	4	18	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFN 25	16.0	35.2	027L4137
ICF 25	4	18	1½	40	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFN 25	16.2	35.6	027L4138

## Liquid PWM

### Application 13: Liquid injection & liquid feed PWM

Type	# of Modules	Appl. #	Connection size		Connection type		Module location				Weight		Code number
			[in.]	[mm]			M1	M2	M3	M4	kg	lbs	
ICF 15	4	13	½	15	Socket weld, ANSI (B 16.11)	S	ICFS 15*	ICFF 15*	ICFA 20	ICFN 20	6.2	13.7	027L4529
ICF 20	4	13	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFA 20	ICFN 20	6.8	15.0	027L3094

\* Fixed module

ICAD and coils are not included and must be ordered separately.

**Please Note:** When used in systems with CO<sub>2</sub>, the o-rings on the ICM module can swell (grow). At service, it is therefore recommended to install new o-rings, before the ICM function module is re-installed in the ICF valve body. ICAD and coils are not included and must be ordered separately.

## Return lines

### Application 41: Return lines - ON/OFF

Type	# of Modules	Appl. #	Connection size		Connection type	Module location				Weight		Code number	
			[in.]	[mm]		M1	M2	M3	M4	kg	lbs		
ICF 50	4	41	1½	40	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICLX 50	SVA-S 50	25.5	56.1	027L5022
ICF 50	4	41	2	50	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICLX 50	SVA-S 50	25.5	56.1	027L5024
ICF 65	3	41	2½	65	Butt-weld ANSI (B 36.10)	A	SVA-S 65*		ICLX 65	SVA-S 65	32.7	71.9	027L6522
ICF 65	3	41	3	80	Butt-weld ANSI (B 36.10)	A	SVA-S 65*		ICLX 65	SVA-S 65	32.7	71.9	027L6524

### Application 42: Return lines - Pressure (temperature) - Mechanical control

Type	# of Modules	Appl. #	Connection size		Connection type	Module location				Weight		Code number	
			[in.]	[mm]		M1	M2	M3	M4	kg	lbs		
ICF 50	4	42S50	1½	40	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICS 50	SVA-S 50	25.8	56.8	027L5002
ICF 50	4	42S32	1½	40	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICS 50-32	SVA-S 50	25.8	56.8	027L5006
ICF 50	4	42S50	2	50	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICS 50	SVA-S 50	25.8	56.8	027L5004
ICF 50	4	42S32	2	50	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICS 50-32	SVA-S 50	25.8	56.8	027L5008
ICF 50	4	42S40	2	50	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICS 50-40	SVA-S 50	25.8	56.8	027L5012
ICF 65	3	42S65	2½	65	Butt-weld ANSI (B 36.10)	A	SVA-S 65*		ICS 65	SVA-S 65	33.3	73.3	027L6502
ICF 65	3	42S40	2½	65	Butt-weld ANSI (B 36.10)	A	SVA-S 65*		ICS 65-40	SVA-S 65	33.3	73.3	027L6506
ICF 65	3	42S80	2½	65	Butt-weld ANSI (B 36.10)	A	SVA-S 65*		ICS 80	SVA-S 65	33.3	73.3	027L6510
ICF 65	3	42S65	3	80	Butt-weld ANSI (B 36.10)	A	SVA-S 65*		ICS 65	SVA-S 65	33.3	73.3	027L6504
ICF 65	3	42S40	3	80	Butt-weld ANSI (B 36.10)	A	SVA-S 65*		ICS 65-40	SVA-S 65	33.3	73.3	027L6508
ICF 65	3	42S80	3	80	Butt-weld ANSI (B 36.10)	A	SVA-S 65*		ICS 80	SVA-S 65	33.3	73.3	027L6512

### Application 43: Return lines - Pressure (temperature) - Electronic control

Type	# of Modules	Appl. #	Connection size		Connection type	Module location				Weight		Code number	
			[in.]	[mm]		M1	M2	M3	M4	kg	lbs		
ICF 50	4	43MA	1½	40	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICM 50 - A	SVA-S 50	24.8	54.6	027L5014
ICF 50	4	43MB	1½	40	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICM 50 - B	SVA-S 50	24.8	54.6	027L5018
ICF 50	4	43MA	2	50	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICM 50 - A	SVA-S 50	24.8	54.6	027L5016
ICF 50	4	43MB	2	50	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICM 50 - B	SVA-S 50	24.8	54.6	027L5020
ICF 65	3	43MA	2½	65	Butt-weld ANSI (B 36.10)	A	SVA-S 65*		ICM 65 - A	SVA-S 65	32.9	72.4	027L6514
ICF 65	3	43MB	2½	65	Butt-weld ANSI (B 36.10)	A	SVA-S 65*		ICM 65 - B	SVA-S 65	32.9	72.4	027L6518
ICF 65	3	43MA	3	80	Butt-weld ANSI (B 36.10)	A	SVA-S 65*		ICM 65 - A	SVA-S 65	32.9	72.4	027L6516
ICF 65	3	43MB	3	80	Butt-weld ANSI (B 36.10)	A	SVA-S 65*		ICM 65 - B	SVA-S 65	32.9	72.4	027L6520

### Application 44: ON/OFF 2-step solenoid + Manuel Regulating

Type	# of Modules	Appl. #	Connection size		Connection type	Module location				Weight		Code number	
			[in.]	[mm]		M1	M2	M3	M4	kg	lbs		
ICF 50	4	44	1½	40	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICLX 50	REG 50-B	25.5	56.1	027L5047
ICF 50	4	44	2	50	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICLX 50	REG 50-B	25.5	56.1	027L5048

### Application 45: Pressure (temperature) Mechanical control + Manuel Regulating

Type	# of Modules	Appl. #	Connection size		Connection type	Module location				Weight		Code number	
			[in.]	[mm]		M1	M2	M3	M4	kg	lbs		
ICF 50	4	45S50	1½	40	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICS 50	REG 50-B	25.8	56.8	027L5026
ICF 50	4	45S32	1½	40	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICS 50-32	REG 50-B	25.8	56.8	027L5030
ICF 50	4	45S40	1½	40	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICS 50-40	REG 50-B	25.8	56.8	027L5034
ICF 50	4	45S50	2	50	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICS 50	REG 50-B	25.8	56.8	027L5028
ICF 50	4	45S32	2	50	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICS 50-32	REG 50-B	25.8	56.8	027L5032
ICF 50	4	45S40	2	50	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICS 50-40	REG 50-B	25.8	56.8	027L5036

All ICS modules are 3-pilot versions. They are supplied with two blanking plugs (A) and one sealing plug (B) (see page 9).

\* Fixed module

ICAD and coils are not included and must be ordered separately.

Please Note: When used in systems with CO<sub>2</sub>, the o-rings on the ICM module can swell (grow). At service, it is therefore recommended to install new o-rings, before the ICM function module is re-installed in the ICF valve body.

ICAD and coils are not included and must be ordered separately.

## Return lines

### Application 46: Pressure (temperature) Electronic control + Manual Regulating

Type	# of Modules	Appl. #	Connection size		Connection type	Module location				Weight		Code number		
			[in.]	[mm]		M1	M2	M3	M4	kg	lbs			
ICF 50	4	46MA	1½	40	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICM 50-A	REG 50-B		24.8	54.6	027L5038
ICF 50	4	46MB	1½	40	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICM 50-B	REG 50-B		24.8	54.6	027L5042
ICF 50	4	46MA	2	50	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICM 50-A	REG 50-B		24.8	54.6	027L5040
ICF 50	4	46MB	2	50	Socket weld, ANSI (B 16.11)	S	SVA-S 50*	ICFB 50	ICM 50-B	REG 50-B		24.8	54.6	027L5044

All ICS modules are 3-pilot versions. They are supplied with two blanking plugs (A) and one sealing plug (B) (see page 9).

## Miscellaneous

### Application 90: Miscellaneous

Type	# of modules	Appl. #	Connection size		Connection type	Module location						Weight		Code number			
			[in.]	[mm]		M1	M2	M3	M4	M5	M6	kg	lbs				
ICF 20	4	90	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICM 20-A33	ICFB 20					7.2	15.8	027L3362
ICF 20	4	90	1	25	Socket weld, ANSI (B 16.11)	S	ICFR 20A	ICFF 20E	ICFE 20	ICFN 20					7.2	15.8	027L4179
ICF 20	4	90	1	25	Socket weld, ANSI (B 16.11)	S	ICFR 20B	ICFF 20E	ICFE 20H	ICFN 20					7.9	17.4	027L4578
ICF 20	4	90	1	25	Socket weld, ANSI (B 16.11)	S	ICFB 20	ICFF 20	ICFE 20	ICFN 20					7.0	15.4	027L3357
ICF 25	4	90	1	25	Socket weld, ANSI (B 16.11)	S	ICFB 25	ICFF 25E	ICFE 25	ICFN 25					14.1	31.0	027L4149
ICF 25	4	90	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFB 25	ICFR 25A					16.1	35.5	027L4180
ICF 25	6	90	1½	40	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFB 25	ICFR 25A					16.1	35.5	027L4181
ICF 20	6	90	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20	ICFA 20	ICFS 20			9.3	20.5	027L3055
ICF 20	6	90	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFA 20	ICFC 20	ICFB 20	ICFS 20			9.9	21.8	027L3058
ICF 20	6	90	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20	ICFO 20	ICFB 20	ICFN 20			9.4	20.7	027L3150
ICF 20	6	90	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFC 20	ICFW 20S	ICFS 20			10.4	22.9	027L4153
ICF 20	6	90	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFC 20	ICFW 20S	ICFS 20			11.5	25.3	027L3377
ICF 25	6	90	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFC 25	ICFB 25	ICFS 25			23.1	50.8	027L4156
ICF 25	6	90	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFC 25	ICFW 25S	ICFS 25			25.1	55.2	027L4158
ICF 20	6	90	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFC 20	ICFB 20	ICFS 20			10.5	23.1	027L3378
ICF 20	6	90	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFF 20E	ICFE 20H	ICFC 20	ICFW 20S	ICFS 20			10.5	23.1	027L4152
ICF 25	6	90	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFC 25	ICFW 25S	ICFS 25			25.1	55.2	027L4154
ICF 25	6	90	1½	40	Socket weld, ANSI (B 16.11)	S	ICFS 25	ICFF 25E	ICFE 25	ICFC 25	ICFW 25S	ICFS 25			25.1	55.2	027L4159
ICF 20	6	90	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFB 20	ICFE 20	ICFD 20	ICFB 20	ICFS 20			15.0	33.1	027L3463
ICF 20	6	90	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFB 20	ICFE 20	ICFD 20	ICFB 20	ICFS 20			15.0	33.1	027L3464
ICF 20	6	90	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFB 20	ICFE 20	ICFD 20	ICFB 20	ICFS 20			15.0	33.1	027L3465

#### Note!

For special applications that cannot be covered by our predefined ICF code numbers a solution might be to consult DIRcalc ICF or your local Danfoss Sales company. Download DIRcalc ICF from <http://www.danfoss.com/BusinessAreas/RefrigerationAndAirConditioning/IR+Software+Overview/IRSoftware.htm> Prior to designing „non standard“ configurations there are some basic restrictions to the location of the function modules that must be followed.

## Defrost drain line

### Application 102: Liquid drain M2 with solenoid - 2 shut-off

Type	# of modules	Appl. #	Connection size		Connection type	Module location						Weight		Code number			
			[in.]	[mm]		M1	M2	M3	M4	M5	M6	kg	lbs				
ICF 20	4	102	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFD 20	ICFE 20	ICFS 20					13.2	29.1	027L3480
ICF 20	4	102	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFD 20	ICFE 20	ICFS 20					13.1	29.1	027L3481
ICF 20	4	102	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFD 20	ICFE 20	ICFS 20					12.5	27.6	027L3482

### Application 103: Liquid drain M4 with solenoid - 1 shut-off

Type	# of modules	Appl. #	Connection size		Connection type	Module location						Weight		Code number			
			[in.]	[mm]		M1	M2	M3	M4	M5	M6	kg	lbs				
ICF 20	4	103	¾	20	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFB 20	ICFE 20	ICFD 20					12.6	27.8	027L3460
ICF 20	4	103	1	25	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFB 20	ICFE 20	ICFD 20					12.5	27.8	027L3461
ICF 20	4	103	1¼	32	Socket weld, ANSI (B 16.11)	S	ICFS 20	ICFB 20	ICFE 20	ICFD 20					11.9	26.2	027L3462

**Data sheet | Valve station, ICF 15, ICF 20, ICF 25, ICF 50 and 65**
**Possible module locations**

Module locations are indicated by M1, M2, M3, M4, M5 and M6.  
With respect to refrigerant flow, M1 is closest to inlet.

**ICF 15 with four modules**

Function	Module Type	Can be installed in these locations			
ICFS	Shut-off valve module	*(ICFS 15)	*(ICFF 15)		M4
ICFR	Manual regulating valve module	*(ICFS 15)	*(ICFF 15)		M4
ICFF	Strainer module	*(ICFS 15)	*(ICFF 15)		
ICFE	Solenoid valve module	*(ICFS 15)	*(ICFF 15)	M3	
ICFC	Check valve module	*(ICFS 15)	*(ICFF 15)		M4
ICFN	Stop & check valve module	*(ICFS 15)	*(ICFF 15)		M4
ICM	Motor operated valve module	*(ICFS 15)	*(ICFF 15)	M3	
ICFB	Blind top cover	*(ICFS 15)	*(ICFF 15)	M3	M4
ICFA	Electronic expansion valve module (for ICF 20 only)	*(ICFS 15)	*(ICFF 15)	M3	
ICFO	Manual opening module	*(ICFS 15)	*(ICFF 15)		M4
ICFW	Welding module	*(ICFS 15)	*(ICFF 15)	M3	M4
ICFD	Drain module (for ICF 15 and 20 only)	*(ICFS 15)	*(ICFF 15)		M4

**ICF 20 and ICF 25 with four modules**

Function	Module Type	Can be installed in these locations			
ICFS	Shut-off valve module	M1	M2	M3	M4
ICFR	Manual regulating valve module	M1	M2	M3	M4
ICFF	Strainer module		M2		M4
ICFE	Solenoid valve module			M3	
ICFC	Check valve module				M4
ICFN	Stop & check valve module				M4
ICM	Motor operated valve module	M1		M3	
ICFB	Blind top cover	M1	M2	M3	M4
ICFA	Electronic expansion valve module (for ICF 20 only)	M1		M3	
ICFE20H	Solenoid valve module (for ICF 20 only)	M1		M3	
ICFO	Manual opening module				M4
ICFW	Welding module	M1	M2	M3	M4
ICFD	Drain module (for ICF 15 and 20 only)		M2		M4

**ICF 20 and ICF 25 with six modules**

Function	Module Type	Can be installed in these locations					
ICFS	Shut-off valve module	M1	M2	M3	M4	M5	M6
ICFR	Manual regulating valve module	M1	M2	M3	M4	M5	M6
ICFF	Strainer module		M2		M4		M6
ICFE	Solenoid valve module			M3			
ICFC	Check valve module				M4		M6
ICFN	Stop & check valve module				M4		M6
ICM	Motor operated valve module	M1		M3		M5	
ICFB	Blind top cover	M1	M2	M3	M4	M5	M6
ICFA	Electronic expansion valve module (for ICF 20 only)	M1		M3		M5	
ICFE20H	Solenoid valve module (for ICF 20 only)	M1		M3		M5	
ICFO	Manual opening module				M4		
ICFW	Welding module	M1	M2	M3	M4	M5	M6
ICFD	Drain module (for ICF 15 and 20 only)		M2		M4		M6

**ICF 50 with four modules**

Function	Module Type	Can be installed in these locations			
SVA-S	Shut-off valve module	*(SVA-S 50)			M4
ICFB	Blind top cover	*(SVA-S 50)	M2		
FIA	Strainer module	*(SVA-S 50)	M2		
ICS	Pilot-operated valve module	*(SVA-S 50)		M3	
ICM	Motor operated valve module	*(SVA-S 50)		M3	
ICLX	2-step solenoid valve module	*(SVA-S 50)		M3	
REG-SB	Manual regulating valve module	*(SVA-S 50)			M4

**ICF 65 with three modules**

Function	Module Type	Can be installed in these locations			
SVA-S	Shut-off valve module	*(SVA-S 65)			M4
ICFB	Blind top cover	*(SVA-S 65)			
FIA	Strainer module	*(SVA-S 65)			
ICS	Pilot-operated valve module	*(SVA-S 65)		M3	
ICM	Motor operated valve module	*(SVA-S 65)		M3	
ICLX	2-step solenoid valve module	*(SVA-S 65)		M3	
REG-SB	Manual regulating valve module	*(SVA-S 65)			M4

location not possible

\*) Module is fixed

*Ordering accessories*
*Stop valve type SNV-ST*

	Description	Code no.
	G½ in. (Qty. 1)	<b>148B3778</b>
	NPT-FPT ¾ in. (Qty. 1)	<b>148B3747</b>

Other SNV types see literature: DKRCI.PD.KB0.A

For complete list of Spare parts and accessories for ICF 15 to 65 (including SS versions) please refer to DKRCI.PY.FT0.B.

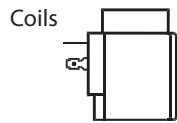
*ICAD 600A/ICAD 1200A*

Description		Code no.
ICAD 600A for ICF 15 to 25		With 1.5 m. cables <b>027H9075</b>
		Without cables <b>027H9120</b>
ICAD 1200A for ICF 50 and 65		With 1.5 m. cables <b>027H9077</b>
		Without cables <b>027H9122</b>
Cable		Cable set 10 m. <b>027H0427</b>
Cable		Cable set 15 m. <b>027H0435</b>
Connector		Connector set female <b>027H0430</b>
Protection cap		Protection cap for ICAD <b>027H0431</b>

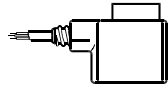
ICAD details see literature: DKRCI.PD.HT0.B

**Data sheet | Valve station, ICF 15, ICF 20, ICF 25, ICF 50 and 65**

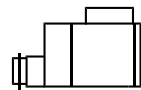
Ordering accessories  
(continued)



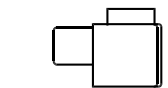
Valve type	Voltage V	Frequency Hz	Code no.			Appendix no.)*	Power consumption
			With 1 m 3-core cable IP 67	With terminal box IP 67	With DIN plugs**)		



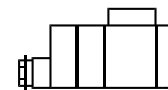
*Alternating current a.c.*



ICFE ICS/ICLX (MOPD < 21 Bar)	12	50		018F6706		15	Holding: 10 W 21 VA
	24	50	018F6257	018F6707	018F7358	16	
	220-230	50	018F6251	018F6701	018F7351	31	Inrush: 44 VA
	115	60	018F6260	018F6710		20	

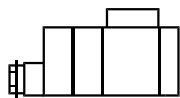


*Direct current d.c.*



ICFE/ICFA ICS/ICLX (MOPD < 21 Bar)	12			018F6856		01	20 W
	24			018F6857		02	

Special coils for ICFE



Valve type	Voltage V	Frequency Hz	Code no.	Appendix no. Indicates voltage and frequency	Power consumption
			With terminal box IP 67		

*Alternating current a.c.*

ICFE ICS/ICLX (MOPD < 21 Bar)	24	50	018F6807	16	Holding: 12 W 26 VA
	110	50	018F6811	22	
	220-230	50	018F6801	31	Inrush: 55 VA

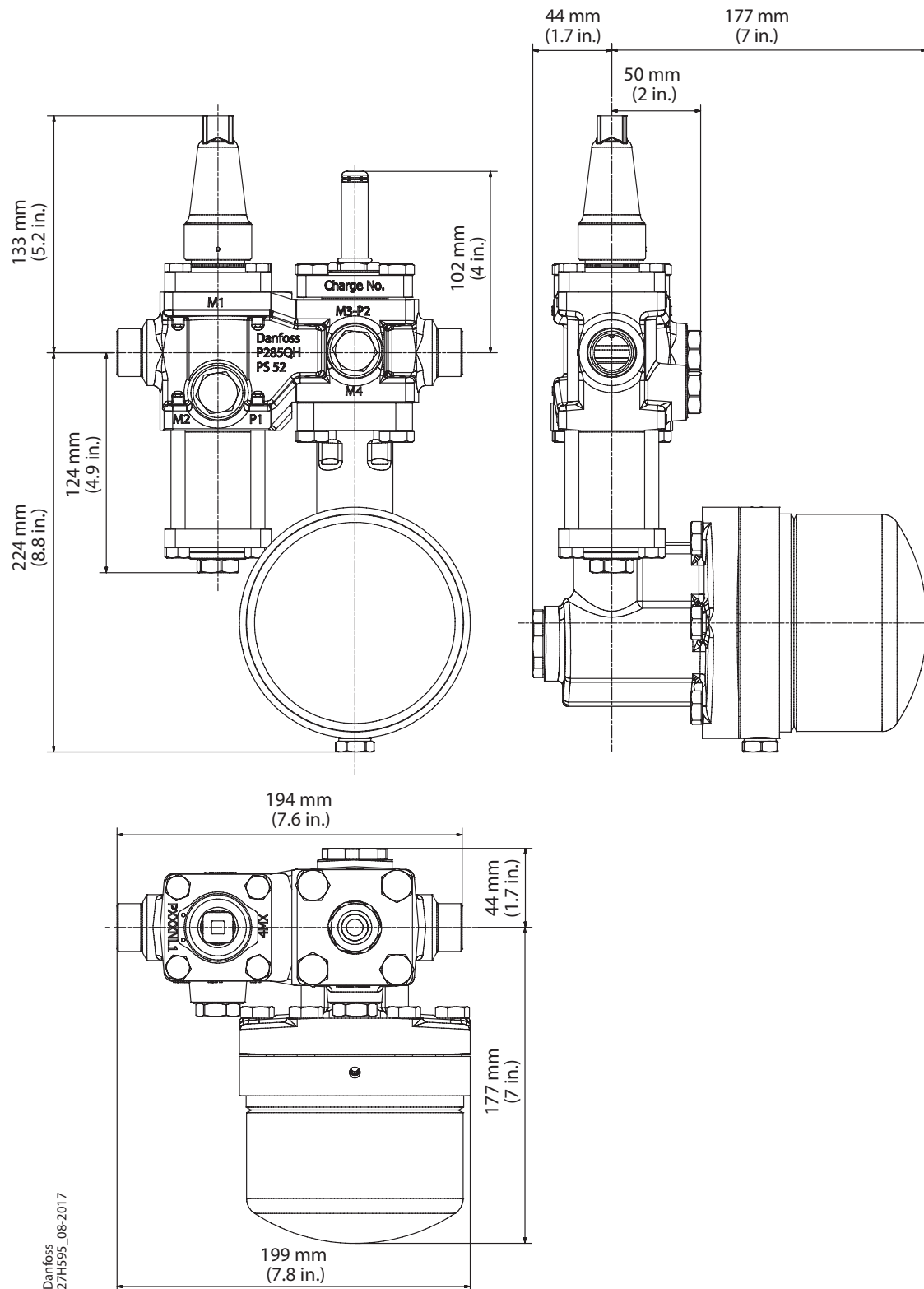
For other coil types please refer to the technical leaflets for EVRA, AKVA, ICS or ICLX valves.



Dimensions

ICF 15-4

This example indicates the maximum dimensions for the ICF valve stations.

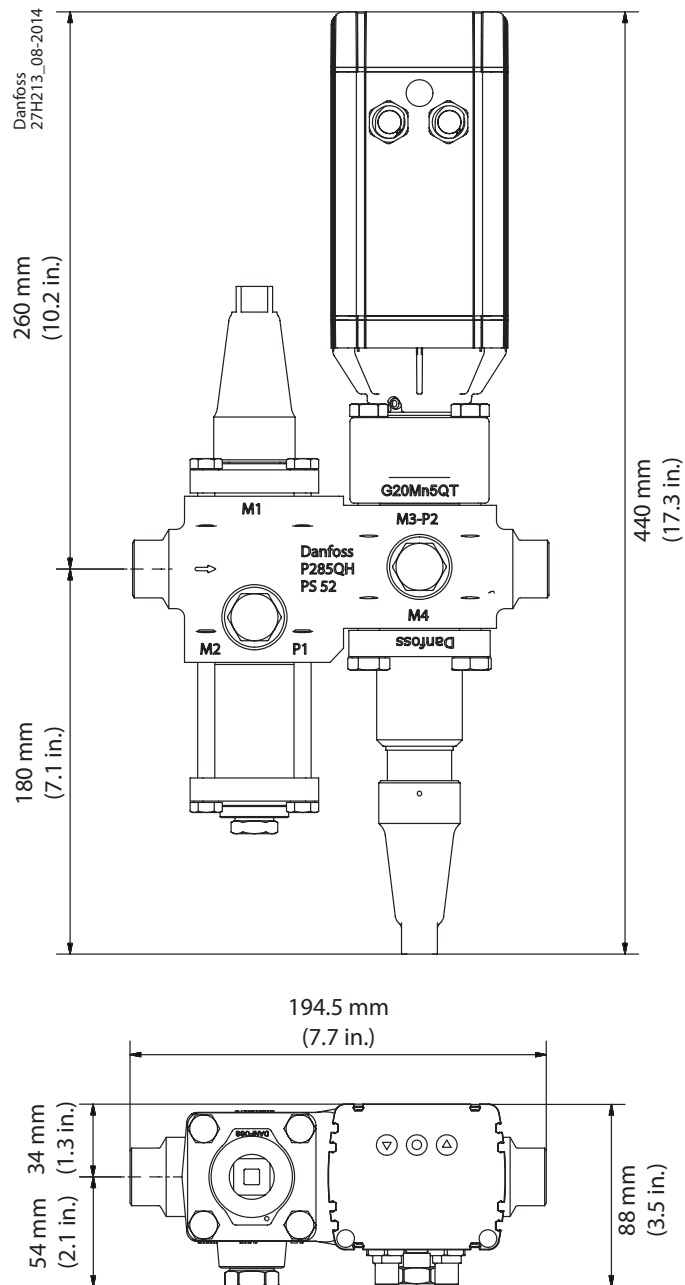


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Dimensions (continued)

ICF 15-4

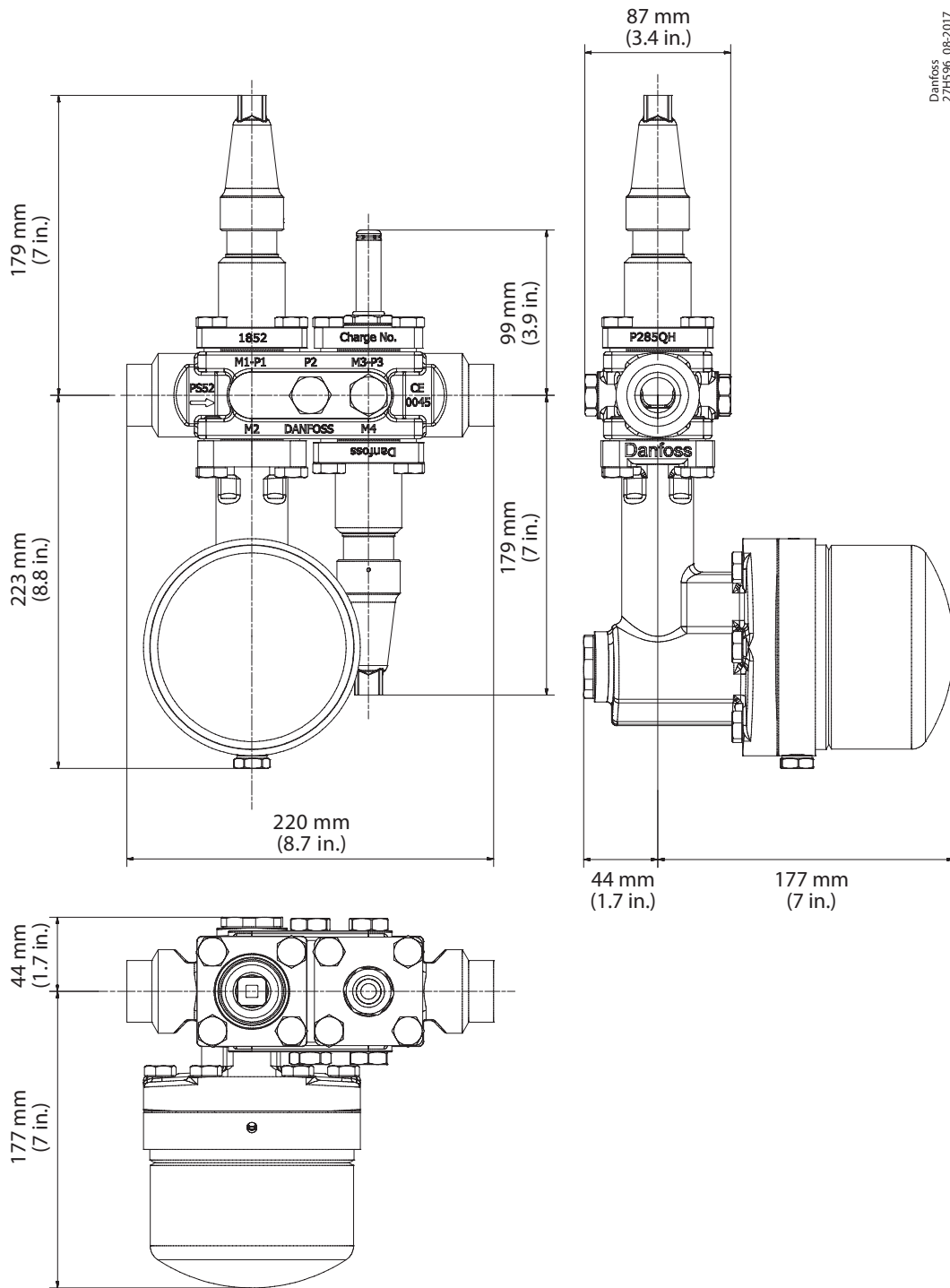
This example indicates the maximum dimensions for the ICF valve stations.



Dimensions (continued)

ICF 20-4

This example indicates the maximum dimensions for the ICF valve stations.

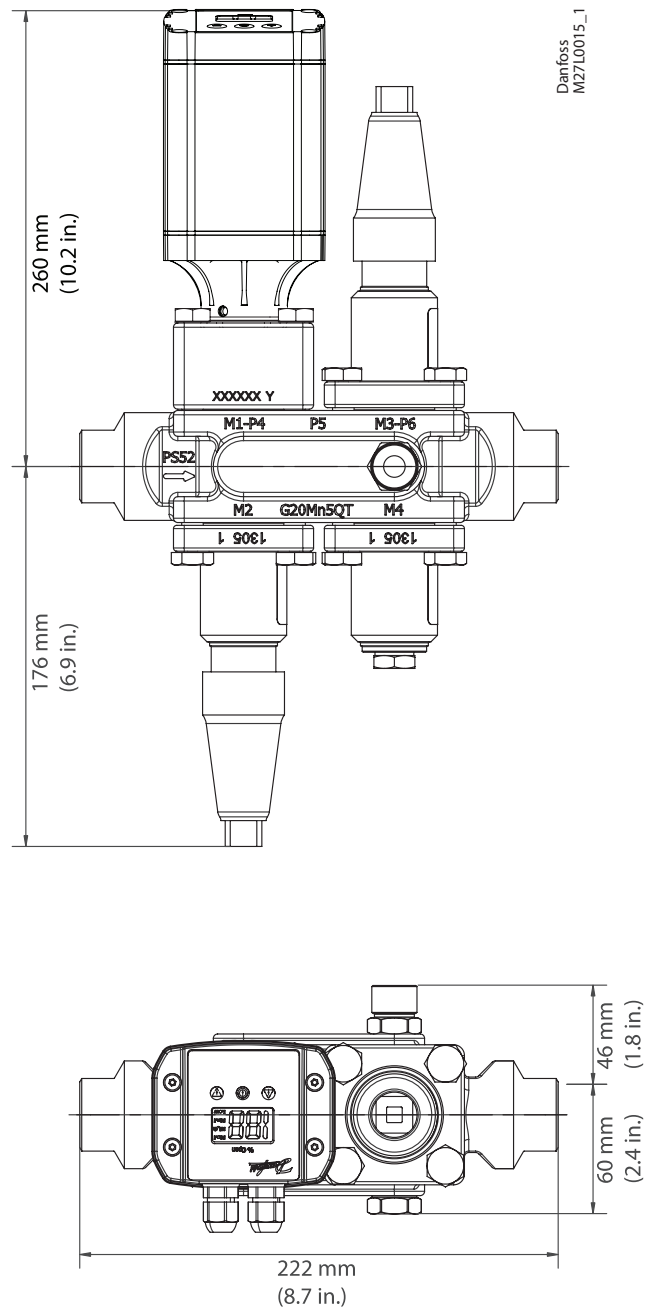


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Dimensions (continued)

ICF 20-4

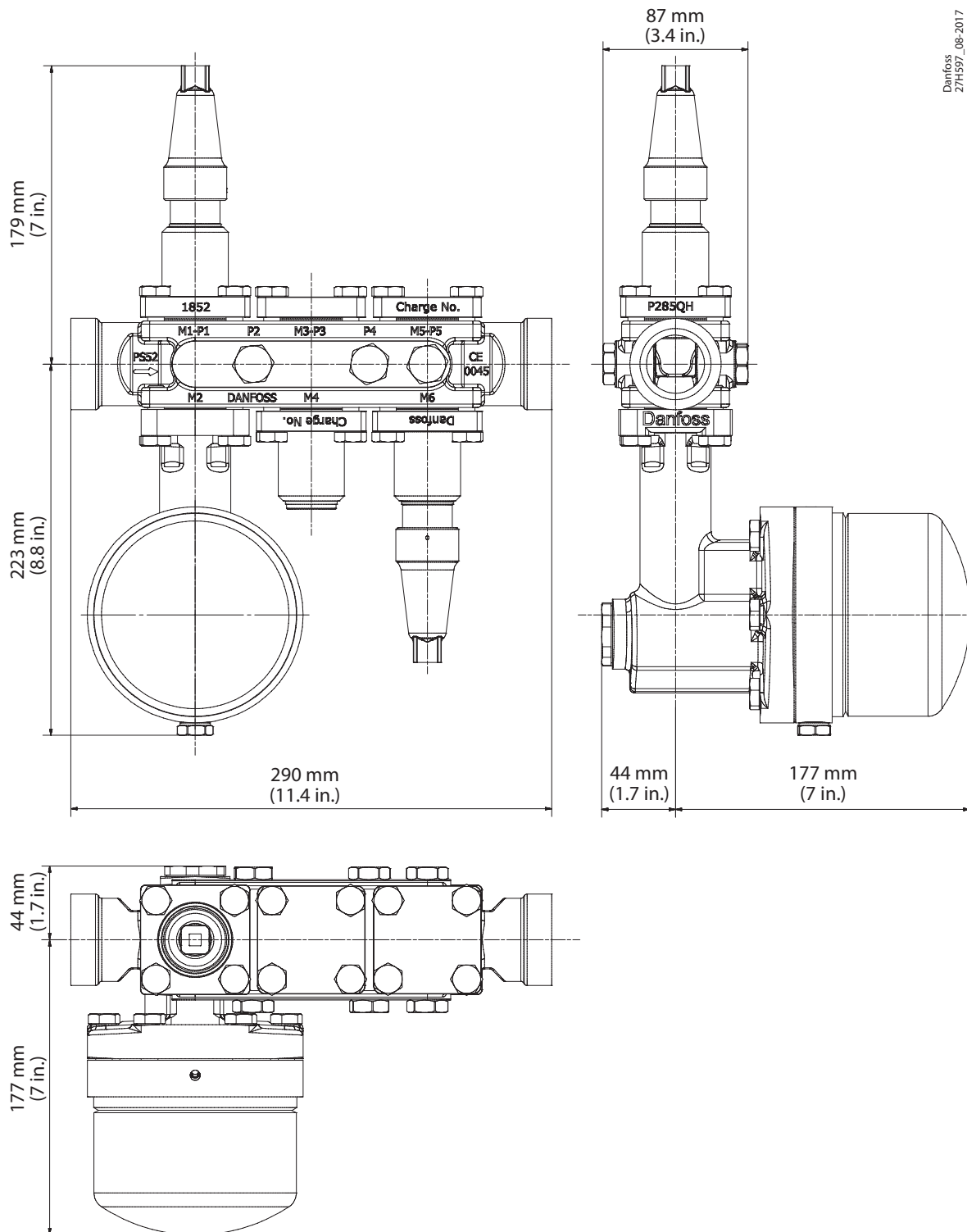
This example indicates the maximum dimensions for the ICF valve stations.



Dimensions (continued)

ICF 20-6

This example indicates the maximum dimensions for the ICF valve stations.

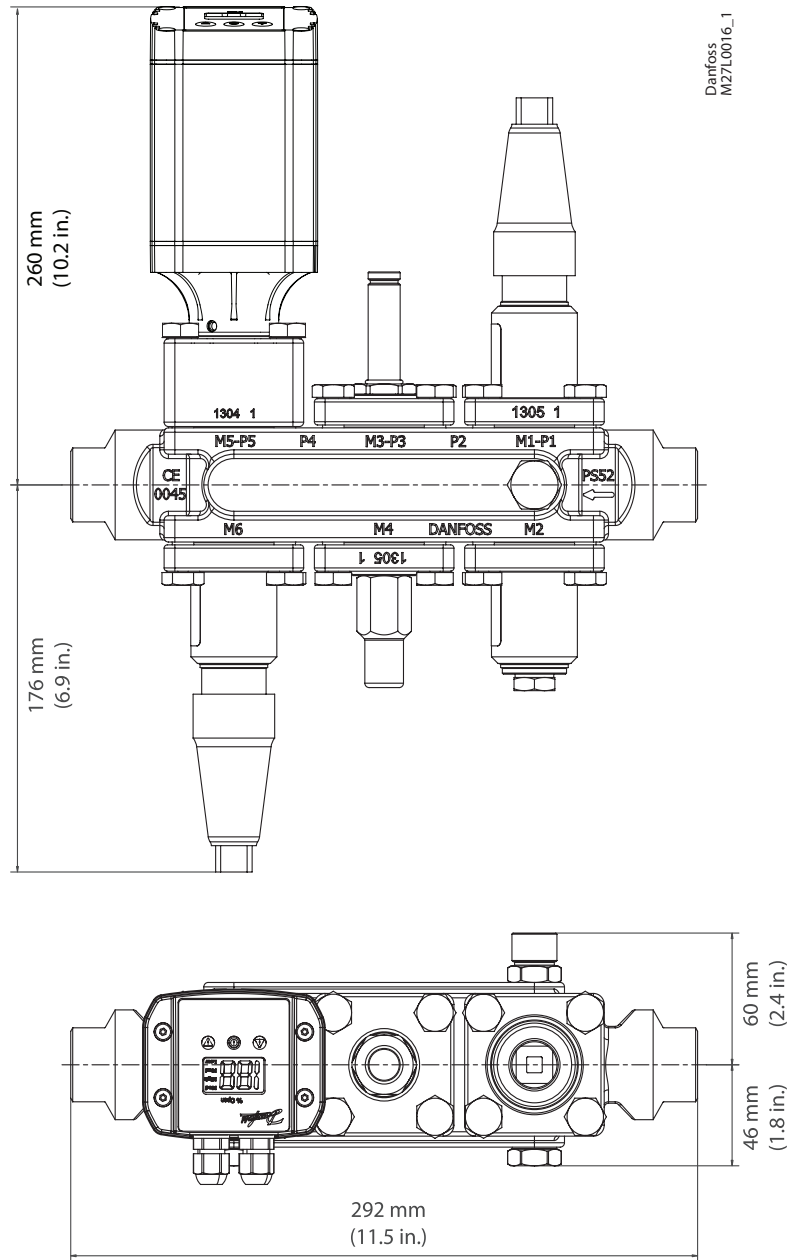


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Dimensions (continued)

ICF 20-6

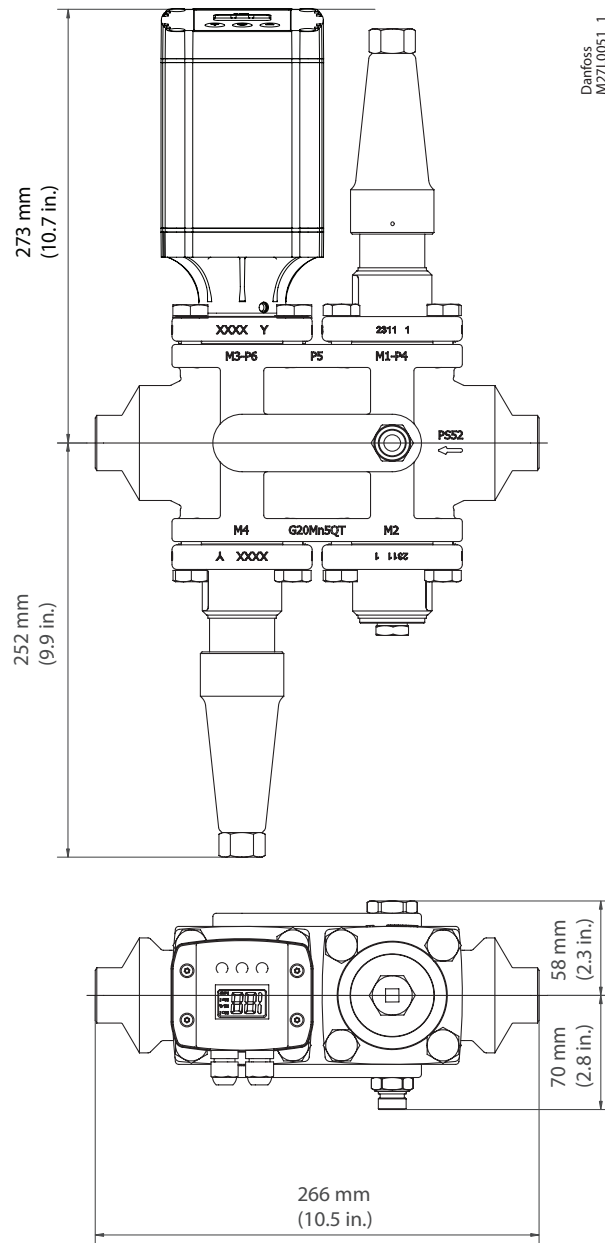
This example indicates the maximum dimensions for the ICF valve stations.



Dimensions (continued)

ICF 25-4

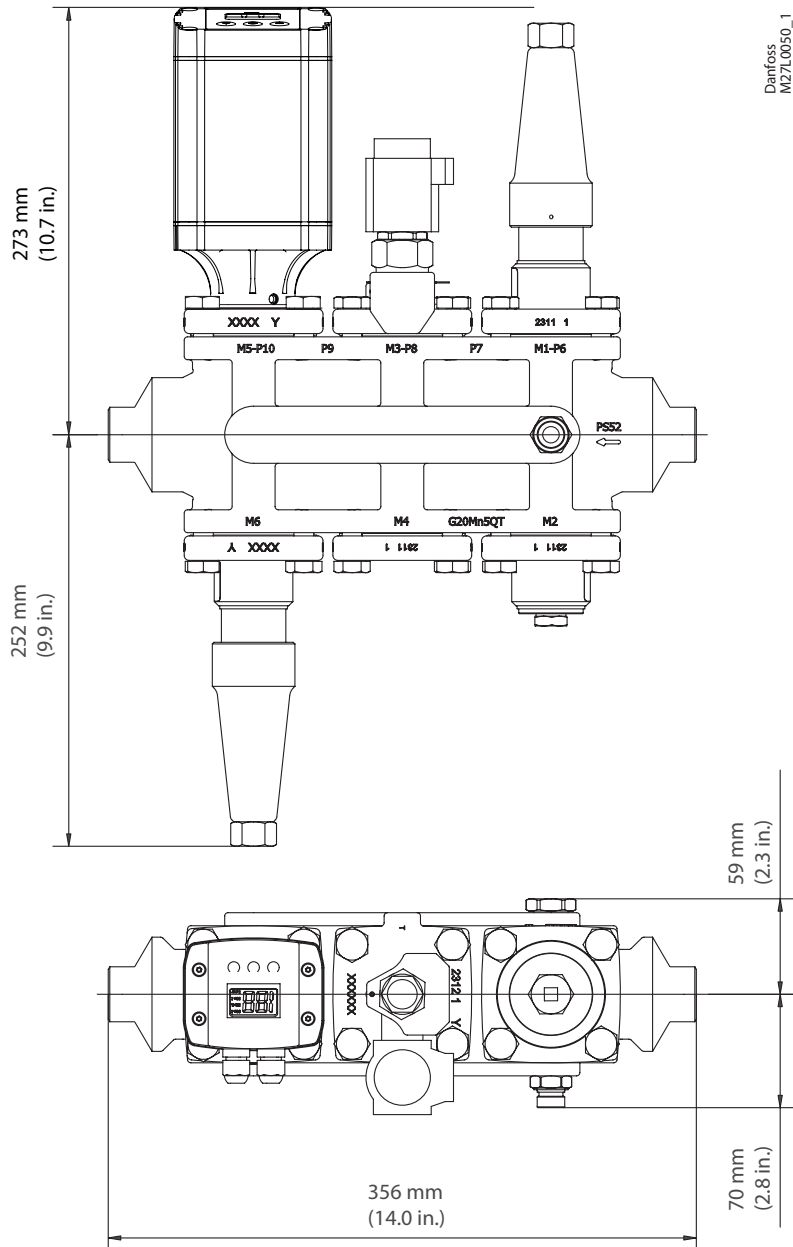
This example indicates the maximum dimensions for the ICF valve stations.



Dimensions (continued)

ICF 25-6

This example indicates the maximum dimensions for the ICF valve stations.

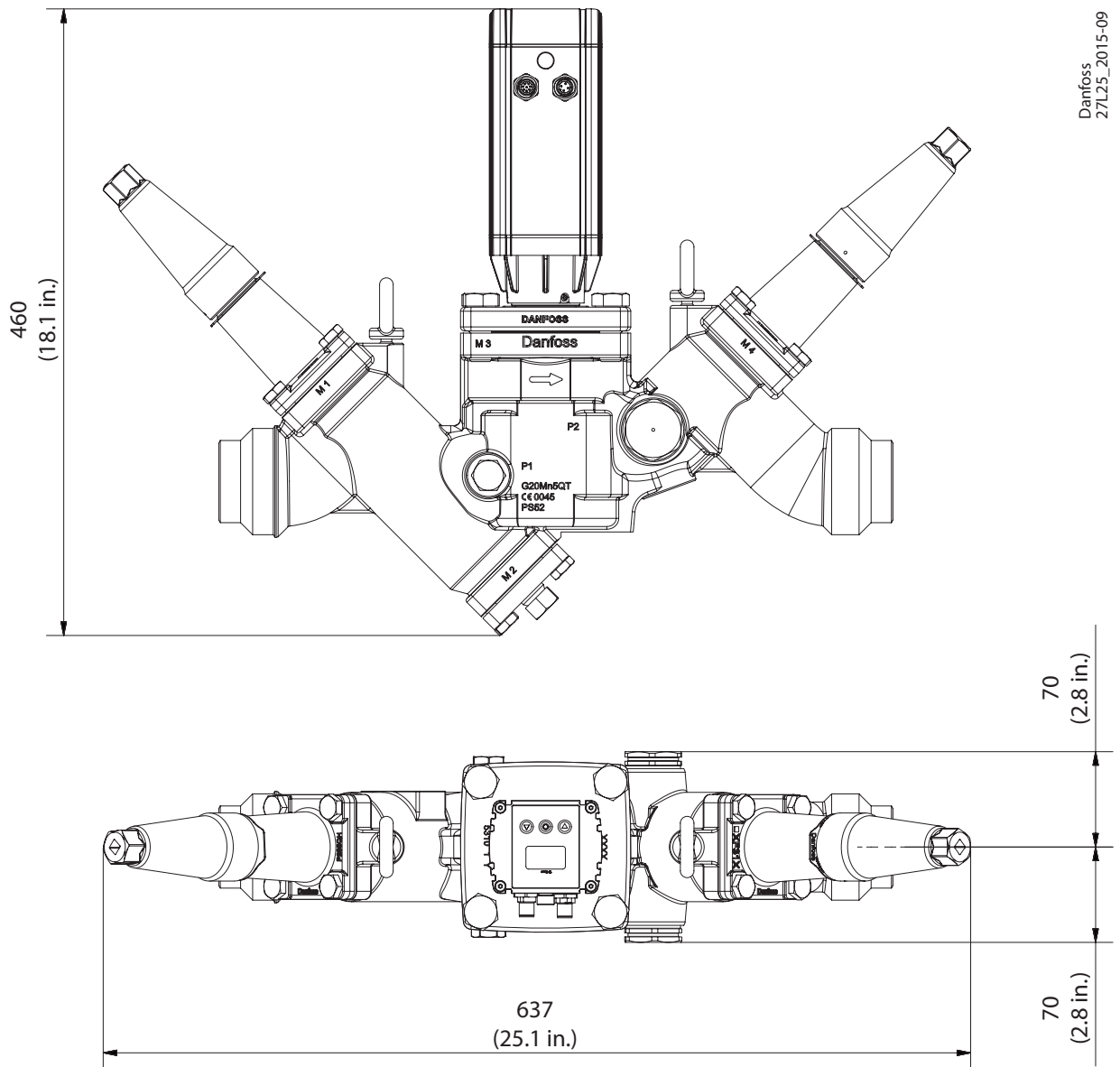




Dimensions (continued)

ICF 50-4

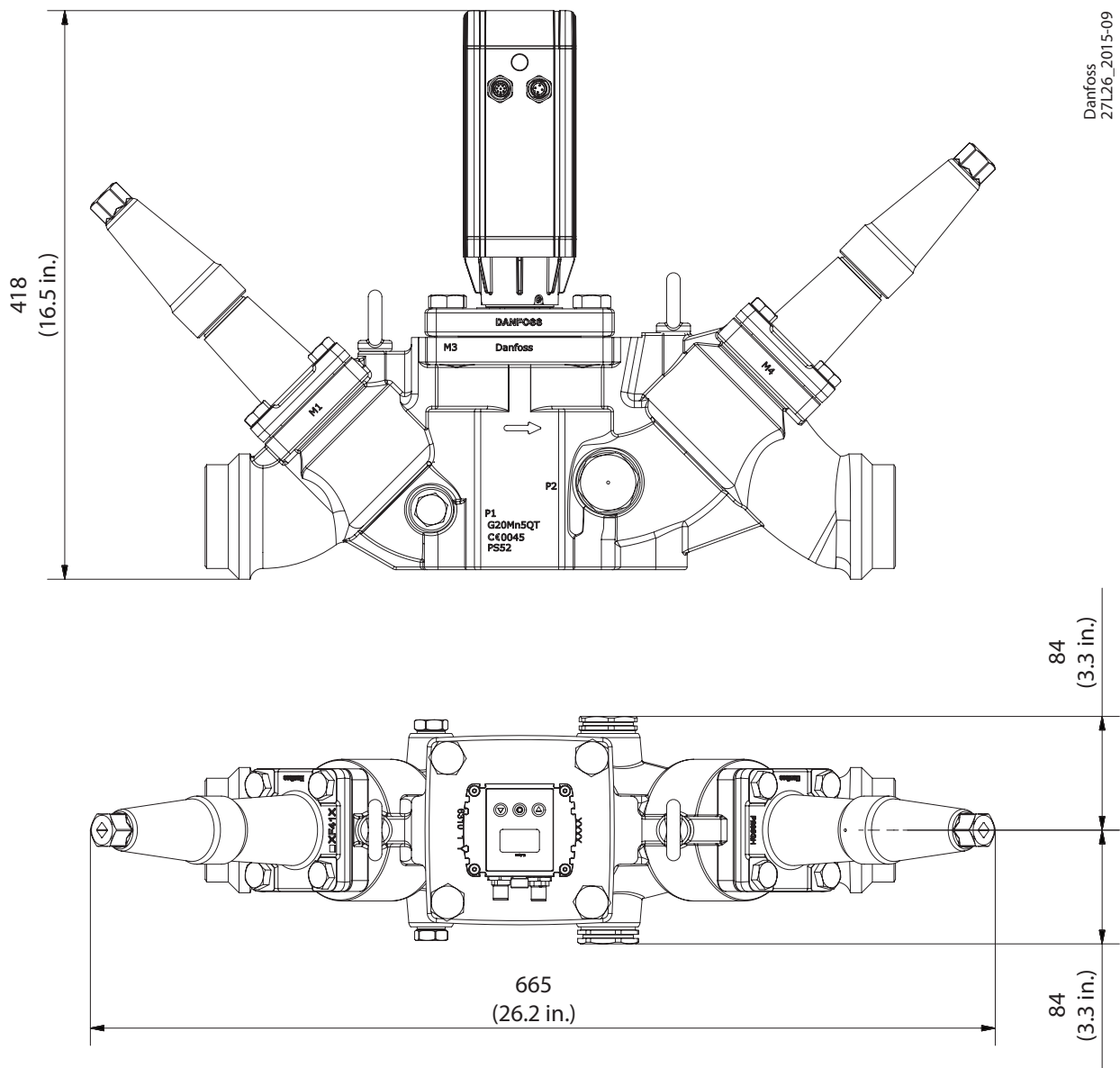
This example indicates the maximum dimensions for the ICF valve stations.



Dimensions (continued)

ICF 65-3

This example indicates the maximum dimensions for the ICF valve stations.





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