



Multifunction valve body

ICM and ICAD 600B / ICAD 1200B

65 bar/52 bar ICM motor valve equipped with ICAD actuator provides a higher suction pressure, and a much better COP, ultimately leading to significant energy savings

Description

The motor operated ICM valve comprises four main components: Valve body, top cover, function module and Actuator. On ICM 20 – 65 the top cover and function module will be combined. ICM are motor operated valves driven by actuator type ICAD.

The sizes DN25 – DN65 are designed for MWP of 65 bar, while all other sizes have MWP of 52 bar.

ICM valves are designed to regulate an expansion process in liquid lines with or without phase change or control pressure or temperature in dry and wet suction lines and hot gas lines. ICM valves are designed so that the opening and closing forces are balanced, therefore, only two sizes of ICAD actuators are needed for the complete range of ICM from DN 20 – DN 150. The ICM motor operated valve and ICAD actuator assembly offers a very compact unit with small dimensions.

ICAD

Actuator types ICAD 600B and 1200B are dedicated for use with ICM motor operated valves. There are only two sizes of ICAD actuators that cover the range of valves from ICM 20 – ICM 150.

The ICAD is controlled via a modulating analogue signal (e.g. 4 – 20 mA / 2 – 10 V), a digital ON / OFF signal or via data communication (Modbus RTU (RS485) or TCP/IP (Ethernet)). ICAD B incorporates an advanced MMI (Man Machine Interface) display with descriptive text and Icons, which gives the user a very intuitive, advanced and flexible set up procedure that can meet different applications. In addition to the display interface, ICAD B also incorporates Bluetooth communication to a mobile app and data communication.

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Features & benefits

• ICM valve

- Designed for industrial refrigeration applications for a maximum working pressure of:
 - ICS DN 25 – DN 65 (80): 65 bar / 943 psig
 - ICS DN 20 & DN 100 – DN 150: 52 bar / 754 psig
- Applicable to a wide range of HCFC, HFC, selected HC, R717 (Ammonia) and R744 (CO₂)
- Direct coupled connections with butt weld, socket weld, solder and threaded options, featuring a low-temperature steel body and a lightweight, compact design. A V-port regulating cone ensures optimum regulating accuracy, particularly at part load
- Cavitation resistant valve seat on A cones in ICM 25 – 65 to be used for valves operating as expansion valves. For control valves both A and B cones are allowed. All ICM 20 with A, B and C cones can be used as expansion or control valves
- Modular Concept
 - Each valve body is available with several different connection types and sizes
 - Valve overhaul is performed by replacing the function module (ICM 20 – 65)
 - Possible to convert ICM motor operated valve to ICS pilot operated servo valve
 - Spare parts available for ICM 100 – 150
- Manual opening is possible via ICAD or a multifunction tool, with a PTFE seat ensuring excellent valve tightness. A magnet coupling provides real hermetic sealing, while ICAD 600B / 1200B units include an encoder function for true valve position feedback to both Danfoss controllers and non-Danfoss control systems

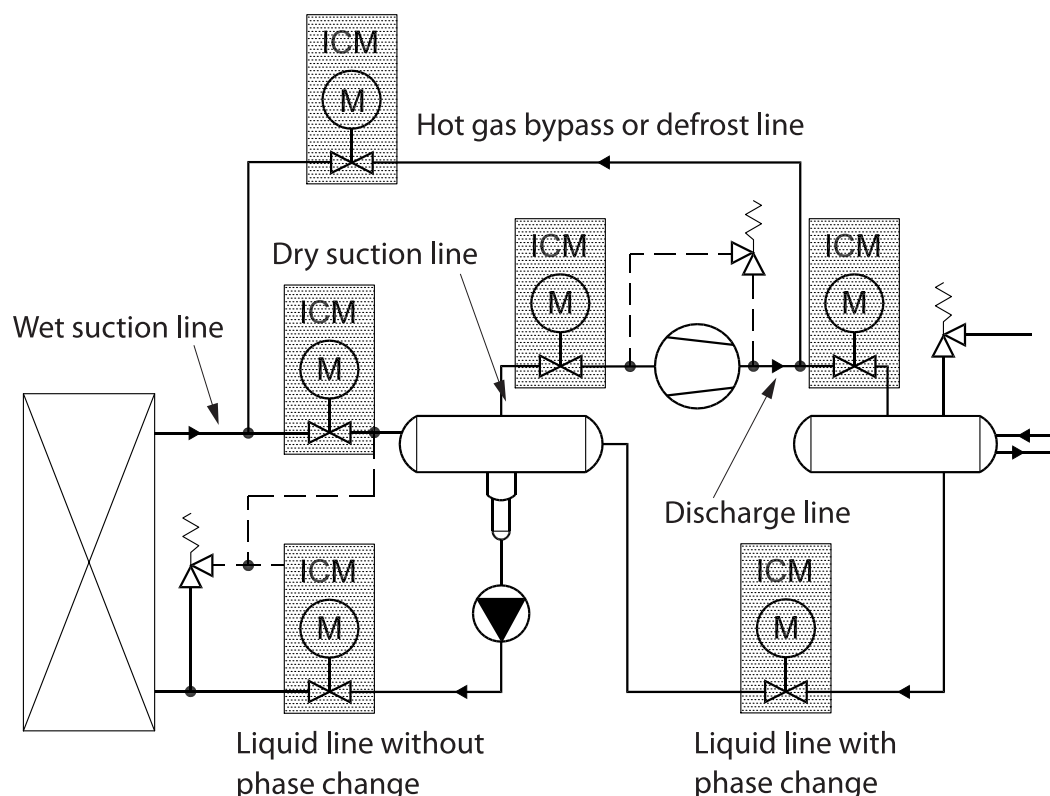
• ICAD actuator

- Designed for industrial refrigeration installations, featuring advanced high-speed digital stepper motor technology, a high-contrast LCD display, and a user-friendly navigation keyboard. The valve opening degree can be continuously observed and easily configured for different applications on-site
- Open–close time ranges from 3 to 45 seconds depending on valve size, with support for modulating, ON/OFF operation, or neutral zone/3-point control. Features include multiple speed selection during operation, data connection via RS485 or Ethernet, and configuration/reading from ICADB actuators via Bluetooth (using the Coolconfig mobile app) or data communication. All events, warnings, and alarms are logged, and access is protected by password security
 - Multiple control options include analog signals (0 – 20 mA, 4 – 20 mA, 0 – 10V, 2 – 10V), digital signal (ON/OFF), and data communication via RS485 and Ethernet. Position feedback is available as 0 – 20 mA, 4 – 20 mA (ICM) and via data communication (RS485 & Ethernet), with 3 digital ON/OFF feedback channels. Features include auto-calibration, neutral zone control, and an encoder function that provides true valve position feedback to both Danfoss controllers and non-Danfoss control systems
 - In the event of a power failure, multiple fail safe options are possible. During power failure, ICM can be selected to:
 - Close ICM
 - Open ICM
 - Stay in the same position, as when power failure occurs
 - Go to a specific ICM valve opening degree

Applications

ICM

Figure: ICM Application



NOTE: ICM can be used for pressure and temperature regulation in dry and wet suction lines, in hot gas lines and in liquid lines with or without phase change (i.e. where no expansion occurs in the valve).

Valve selection based on capacity calculation

As for extended capacity calculations and valve selection based on capacities and refrigerants, please refer to Coolselector®2. Rated and extended capacities with the Coolselector®2 calculation engine to ARI standards with the ASEREP equations based on laboratory measurements of selected valves.

Selection of ICM valves are available with [Coolselector®2](#) selection program.

The process for identifying the ICM valve solution can be determined from the ordering pages. Initially select the nominal valve size, identify the required valve body and connection types, followed by the module insert and then the correct actuator to suit the module insert and valve body.

As the ICM and ICS valves use a common body it is possible to install the body without having previously determined whether a servo or motor function is required. A blank top cover complete with fixing screws can be supplied to allow for pressure testing.

In applications where the ICM is used to control pressure / temperature at differing operating conditions e.g. dual temperature store, the ICM must be selected so that the full operating conditions (minimum and maximum capacity / summer and winter conditions) are within the control range of the selected ICM valve.

It is particularly important to ensure that the ICM valve selection is not oversized and as a consequence operates at a minimum opening degree, which can result in a hunting condition and continuous recalibration of the ICM valve.

Cavitation resistant valve seat on A cones in ICM 25 – 65 to be used for valves operating as expansion valves. For control valves both A and B cones are allowed. All ICM 20 with A, B and C cones can be used as expansion or control valves.

NOTE:

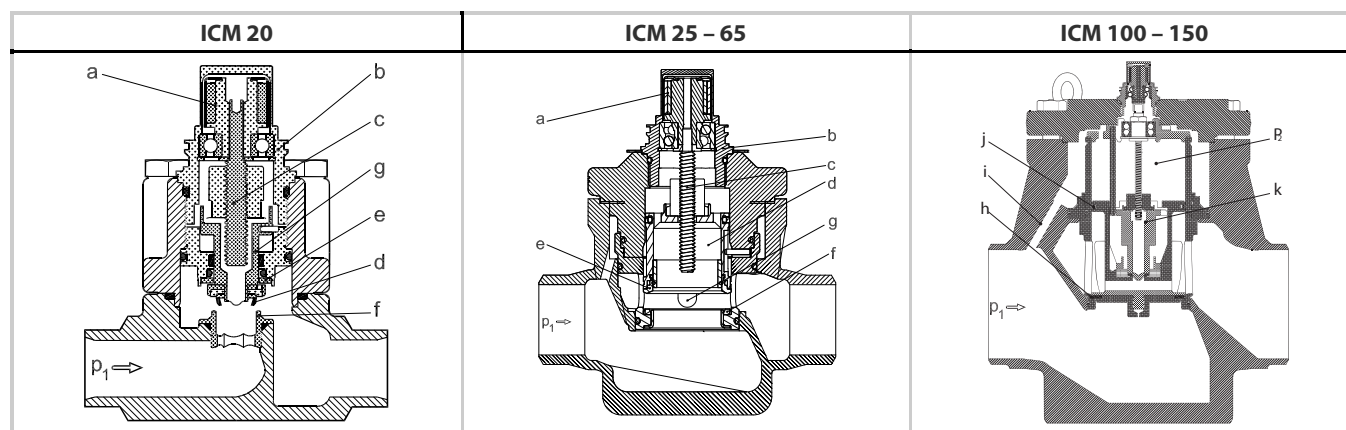
ICM valves should be sized to suit required capacity and operating conditions. ICM valves should not be line sized.

For ICM 20 – 65 applications it is recommended that the valve opening degree at the minimum operating conditions is greater than 5%.

For ICM 100 – 150 applications it is recommended that the valve opening degree at the minimum operating conditions is greater than 10%.

Functions

ICM valves



ICM, motor operated valves are designed for use with the ICAD actuator

The driving force from the actuator is transferred via a magnetic coupling (**a**) through the stainless-steel top housing (**b**) and thus eliminates the need for a packing gland. The rotational movement of the magnetic coupling (**a**) is transferred to a spindle (**c**) which in turn provides the vertical movement of the piston (**d**) and the valve seat (**e**), to open and close the valve. The closing force of the actuator, combined with the valve seat (**e**) and PTFE valve plate (**f**), provides an effective seal to prevent leakage across the valve port, when the valve is in the closed position. To prevent damage to the PTFE valve seat (**e**) and plate (**f**) from system debris, it is recommended that a filter is installed upstream of the valve. Please refer to page 14 for filter sizing and application recommendations.

ICM 20 – 65:

Valve inlet pressure (P_1) acting on the underside of the PTFE valve seat (**e**) also passes through the hollow piston assembly (**d**) on to the top of the piston (**d**) and balances the pressure acting on the piston (**d**). Any trapped liquid across the throttle cone (**g**) is allowed to equalise down to the valve outlet without affecting the valve performance.

ICM 100 – 150:

Valve inlet pressure (P_1) acting on the underside of the PTFE valve plate (**h**) also passes through the equalization hole (**i**) and ensures that the servo piston (**j**) is pressure balanced. This will equalize P_1 and P_2 . During an opening operation of the valve, the pilot piston (**k**) will be raised from its valve seat inside the servo piston (**j**). This allows the P_2 pressure to escape through the servo piston (**j**) to the outlet of the valve. The pressure P_1 will act on the underside of the servo piston (**j**) and force it to open. This will close the gap between the pilot piston (**k**) and the servo piston (**j**) until the pressures P_1 and P_2 are equalized again. When there is no pressure difference between P_1 and the outlet of the valve the pilot piston (**k**) is attached to the servo piston (**j**) ensuring it to open up.

ICAD

There are two sizes of ICAD actuator that covers the range of valves from ICM 20 to ICM 150. The actuators have a fully weather protected enclosure with none of the moving parts exposed to the environment.

The fast acting actuators and balanced valve design results in the valve being able to move from the fully closed to the fully open position in between 3 to 45 seconds depending on valve size and ICAD setup.

Each body may be fitted with multiple function / top cover to give different capacities

Figure: Multiple function / top cover

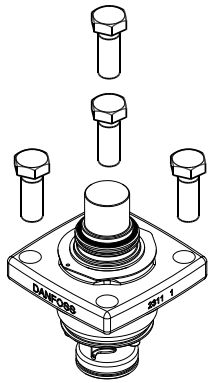


Table: Multiple function / top cover with capacities

Type	Valve body size	k_v (m ³ /h)	C_v (US _{gal} /min)
ICM 20A-33	20	0.2	0.23
ICM 20-A		0.6	0.7
ICM 20-B66		1.6	1.9
ICM 20-B		2.4	2.8
ICM 20-C		4.6	5.3
ICM 25-A	25	6	7
ICM 25-A33		2	2.3
ICM 25-B		12	13.9
ICM 32-A	32	9	10.4
ICM 32-B		17	20
ICM 40-A	40	15	17
ICM 40-B		26	30
ICM 50-A	50	23	27
ICM 50-B		40	46
ICM 65-A	65	35	41
ICM 65-B		70	81
ICM 100-B	100	142	167
ICM 125-B	125	223	260
ICM 150-B	150	370	430

ICAD

The design of ICAD is based on a digital stepper motor technology combined with an advanced MMI (Man Machine Interface), that gives excellent possibilities for having a high degree of flexibility with the same type of ICAD actuator

At the ICAD display the Opening Degree (0 – 100 %) of the actual ICM valve installed can be continuously observed.

The advanced menu system will allow several parameters to be adjusted to obtain the required function.

Many different parameters can be configured, among these:

- Modulating, ON / OFF operation or Neutral zone / 3 point control
- Analog input
 - 0 – 20 mA or 4 – 20 mA
 - 0 – 10 V or 2 – 10 V
- Digital Input
 - ICAD can be configured to support one or two digital inputs
 - When using one digital input, 0 – 10 V cannot be used at the same time
 - By using two digital inputs at Neutral zone / 3 point control, the analog input (0/2 – 1 0 V, 0/4 – 20 mA) and Analog Output (0/4 – 20 mA) cannot be used at the same time
 - Data communication (RS485 & Ethernet)
- Position feedback
 - Analog output: 0 – 20 mA or 4 – 20 mA
 - Data communication (RS485 & Ethernet)
- Automatic or manual control
- Change of ICM valve speed
- Automatic calibration
- Multiple Fail-Safe set-up options during power cut

For service all Input and Output signals can be recalled and observed from the ICAD display via Bluetooth (using Coolconfig mobile app) or via data communication.

To avoid unintentional and non-authorised operation, ICAD uses a service password for the display and password for Coolconfig application.

ICAD can manage and display different alarms and warnings. If an alarm has been detected the display will show alarm/warning and LED light will start to flash in red (alarm) or yellow (warning). Blue light indicates ICAD is connected via Bluetooth. If more than one alarm is active at the same time the alarm with the highest priority will take preference. The alarm with the highest priority is shown on the display.

All alarms will automatically reset when disappearing.

Previous alarms and warnings can be recalled for traceability and service purposes.

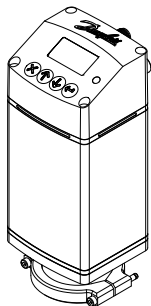
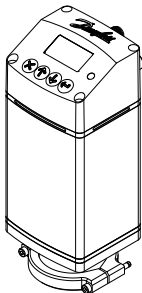
Any active alarm will activate the common digital alarm output. All alarms will automatically reset when disappearing.

ICAD provides two digital output signals to 3rd party control equipment (e.g. PLC) indicating if the ICM valve is completely open or completely closed.

The hermetic magnetic motor coupling makes it easy to dismount the ICAD from ICM valve.

A magnetic coupled actuator is easily installed. Only two actuators are needed to cover the entire ICM program

Table: ICAD 600B and ICAD 1200B

ICAD 600B	ICAD 1200B
	

Operation

ICAD actuators are equipped with multiple interfaces (onboard display, Bluetooth mobile app and data communication) from which it is possible to monitor and change the setting of parameters to adapt the actuator and the corresponding ICM valves to the actual refrigeration application.

Note:

For **Service/Control Parameters** please see ICAD User Guide [BC465027827472en-000502](#).

Figure: Filter

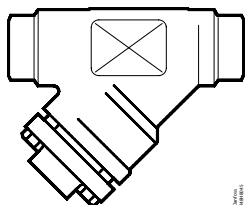


Table: Recommended filters

Recommended filters						Filter element for liquid line		Filter element for suction line	
						150 mesh	100 mesh	72 mesh	38 mesh
Filter Type	Size	D	A	FPT	SOC	100 my	150 my	250 my	500 my
FIA Straight- way	20 (¾ inch)	148B5343	148B5347	148B5349	148B5348	148H3122	148H3124	148H3126	148H3128
FIA Straight- way	25 (1 inch)	148B5443	148B5447	148B5449	148B5448	148H3123	148H3125	148H3127	148H3129
FIA Straight- way	32 (1 ¼ inch)	148B5544	148B5552	148B5549	148B5548	148H3123	148H3125	148H3127	148H3129
FIA Straight- way	40 (1 ½ inch)	148B5625	148B5644		148B5645	148H3123	148H3125	148H3127	148H3129
FIA Straight- way	50 (2 inch)	148B5713	148B5716		148B5717	148H3157	148H3130	148H3138	148H3144
FIA Straight- way	65 (2 ½ inch)	148B5813	148B5815				148H3131	148H3139	148H3145
FIA Straight- way	80 (3 inch)	148B5906	148B5908				148H3119	148H3120	148H3121
FIA Straight- way	100 (4 inch)	148B6007	148B6009				148H3132	148H3140	148H3146
FIA Straight- way	125 (5 inch)	148B6106	148B6108				148H3133	148H3141	148H3147
FIA Straight- way	150 (6 inch)	148B6203	148B6205				148H3134	148H3142	148H3148

ICAD protection cap

Figure: ICAD with cap above

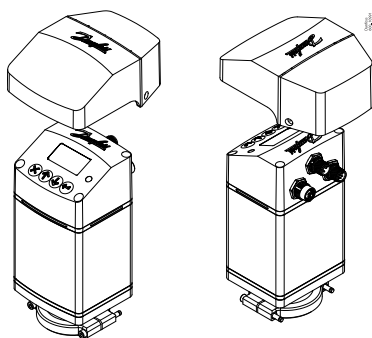
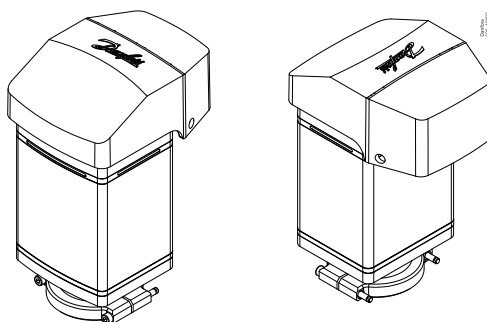


Figure: ICAD with cap on



For all outdoor applications or where extra protection of the display and keyboard is needed, Danfoss recommends using the ICAD protection cap.

The protection cap will give the ICAD display and keyboard an extra protection against e.g. sun radiation or other impacts from the surrounding environment. Furthermore it protects the cable connectors against inappropriate loads.

The special designed protection cap can be mounted on all ICAD 600B / 1200B.

The installation of the protection cap is done by sliding the protection cap down on the top of the ICAD. To secure the protection cap, tie it to the connector cables using the hole in the protection cap.

Figure: ICAD-UPS for ICM 20 – 150**ICAD-UPS for ICM 20 – 150**

ICAD-UPS is dedicated for use along with ICM sizes 20 - 150 installed with ICAD 600B and ICAD 1200B actuators.

In the event of power failure, there is a need to make sure that the ICM goes to a safe position.

ICAD-UPS can be connected to the ICAD 600B / 1200B.

The solution ICM with ICAD connected to ICADUPS will give one of the following possibilities in the event of power failure:

- close ICM
- open ICM
- stay
- go to a specific ICM Opening Degree

When power supply has been re-established, the system will automatically return to normal operation.

Facts and features

- Industrial product
- Can support up to
 - 3 pcs. of ICAD 1200B or
 - 8 pcs. of ICAD 600B
- Integrated solution - battery and UPS
- Industrial approvals:
 - CE, UL
- DIN rail mounting
- LED status indication
- 24 V DC supply → Same transformer as for ICAD can be used
- Continuous monitoring of battery
- Integrated temperature sensor for optimized battery charging
- Adjustable buffer time⁽¹⁾. (1, 2, 3, 5, 10, 15, 20 or infinity) = Ensures longer life time of the battery
- Forced remote shutdown in buffer mode via digital input
- 3 digital volt free relay change over contacts for signals to PLC systems. (Power OK, Buffer mode (failsafe supply to ICAD), Alarm).

Code number: **027H0388**

For further information please see the instruction [ICAD-UPS](#)

⁽¹⁾ Buffer time is defined as the period where ICAD is only powered from the ICAD-UPS (i.e., not from main supply). On ICAD-UPS there is an adjustable buffer time setting (1, 2, 3, 5, 10, 15, 20, 30 min. or infinity). If set to 3, ICAD-UPS will switch off power to connected ICAD 600B / 1200B, 3 minutes after the power failure occurs. This ensures that the internal battery inside ICAD-UPS do not fully discharge.

ICAD-UPS applications

Figure: Separate 24 V DC transformer for both ICAD-UPS and ICAD 600B / 1200B

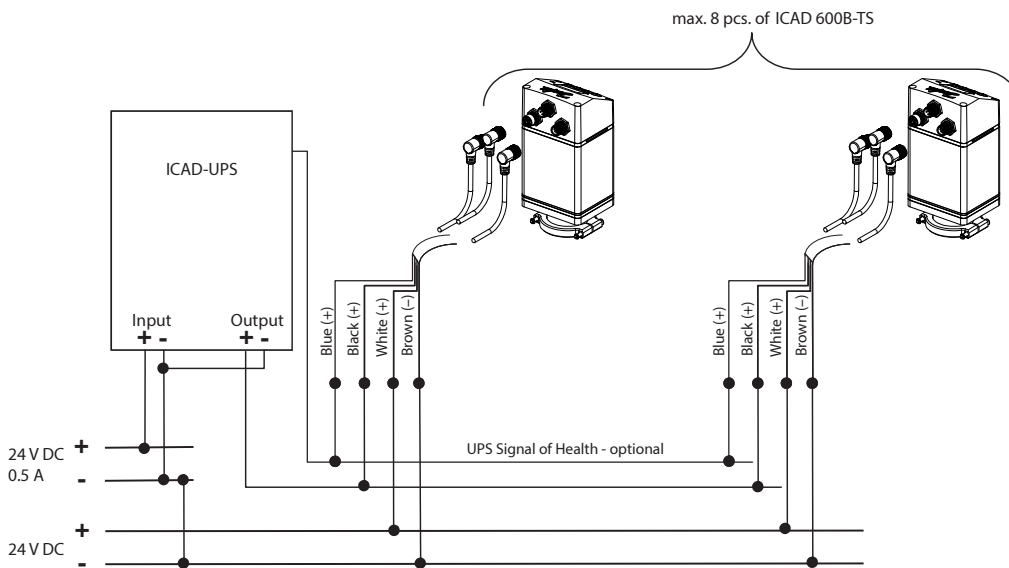
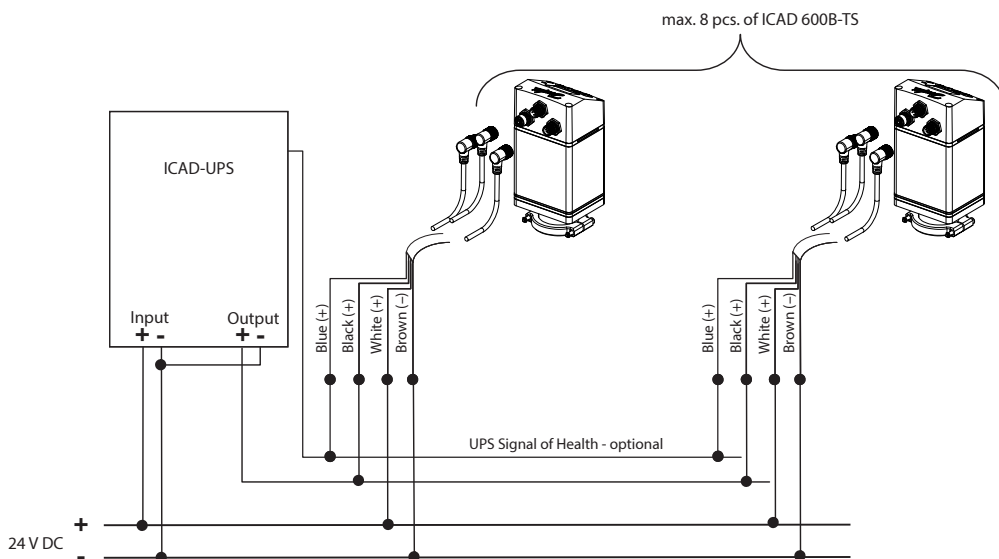


Figure: One 24 V DC transformer for ICAD-UPS and ICAD 600B / 1200B



Media

Refrigerants

ICM 20, ICM 100, ICM 125 and ICM 150:

Applicable to HCFC, HFC, R717 (Ammonia) and R744 (CO₂).

ICM 25 – 65:

Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO₂) and R1234ze.

For further information please contact your local Danfoss sales company.

ICME 20 – 50:

Applicable for HC.

Please note that both standard ICM and new ICME due to usage with ICAD actuator, cannot be used in explosive or potentially explosive zones.

New refrigerants

Danfoss products are continually evaluated for use with new refrigerants depending on market requirements.

When a refrigerant is approved for use by Danfoss, it is added to the relevant portfolio, and the R number of the refrigerant (e.g. R513A) will be added to the technical data of the code number. Therefore, products for specific refrigerants are best checked at

store.danfoss.com/en/, or by contacting your local Danfoss representative.

Product details

Pressure and temperature data

ICM

Type	Approval envelope						Continuous operation				Periodic operation	
	Max. working pressure PS/ MWP		Min. allowable temperature TS _{min}		Max. allowable temperature TS _{max}		Min. continuous operating temperature T0 _{min}		Max. continuous operating temperature T0 _{max}		Max. periodic operating temperature T1 _{max}	
	bar	psig	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
ICM 25 – 65(80)	65	943	-60	-76	120	248	-60	-76	75	167	120	248
ICM 20 100 – 150	52	754	-60	-76	120	248	-60	-76	75	167	120	248
ICM modules with FFKM O-ring for Heat Pump applications (see table ICM modules with FFKM O-ring)												
ICM 20 KZ	52	754	-60	-76	120	248	-10	14	100	212	120	248
ICM 25 – 32 KZ	65	943	-60	-76	120	248	-10	14	100	212	120	248
ICME modules with FKM sealing for Hydrocarbon refrigerants and high temperature												
ICME 20	52	754	-60	-76	130	266	-40	-40	130	266	130	266
ICME 25 – 50	65	943	-60	-76	130	266	-40	-40	130	266	130	266

Note:

Further information about the operating envelope can be found in the [Danfoss Application Handbook](#)

Max. opening pressure differential (MOPD)

- ICM 20-32: 52 bar / 750 psi
- ICM 40: 40 bar / 580 psi
- ICM 50: 30 bar / 435 psi
- ICM 65: 20 bar / 290 psi
- ICM 100 20 bar / 290 psi
- ICM 125 20 bar / 290 psi
- ICM 150 20 bar / 290 psi

Time to move from Closed to Open position or in reverse order with maximum selected speed at ICAD

- ICM 20: 3 Sec.
- ICM 25: 7 Sec.
- ICM 32: 8 Sec.
- ICM 40: 10 Sec.
- ICM 50: 13 Sec.
- ICM 65: 13 Sec.
- ICM 100: 25 Sec.
- ICM 125: 35 Sec.
- ICM 150: 45 Sec.

IMPORTANT:**Heat pump Applications**

For heat pumps operating from 75 °C – 100 °C (167 °F – 212 °F), please be aware that the lifetime of the internal sealings will be reduced. Operation above 100 °C (212 °F) is not recommended.

To increase lifetime of internal sealing when operating from 75 °C – 100 °C (167 °F – 212 °F), please use ICM KZ⁽¹⁾. For applications charged with Hydrocarbons operating up to 130°C, please use ICME⁽²⁾ with the following codes.

Table: ICM KZ modules

Sales codes	Description
027H1175	ICM 20 A33 Top assembly - KZ ⁽¹⁾
027H1176	ICM 20 A Top assembly - KZ ⁽¹⁾
027H1177	ICM 20 B Top assembly - KZ ⁽¹⁾
027H1178	ICM 20 C Top assembly - KZ ⁽¹⁾
027H1179	ICM 20 B66 Top assembly - KZ ⁽¹⁾
027H2169	ICM 25 A33 Top assembly - KZ ⁽¹⁾
027H2170	ICM 25 A Top assembly - KZ ⁽¹⁾
027H3170	ICM 32 A Top assembly - KZ ⁽¹⁾

⁽¹⁾ ICM KZ includes FFKM o-ring under piston ring. All other o-rings are made of Chloroprene material.

Table: ICME modules

Code no.	Description
027H0645	ICME 20 A Function module
027H0276	ICME 20 B Function module
027H0383	ICME 20 B66 Function module
027H0278	ICME 20 C Function module
027H0523	ICME 25A Function module
027H0526	ICME 32A Function module
027H0530	ICME 40A Function module
027H0588	ICME 50A Function module

⁽²⁾ ICME with FKM o-rings.

Design

ICM

Valve body and top cover material

Low temperature steel.

Surface protection

ICM 20 – 150: The external surface is zinc-chromated to provide good corrosion protection.

ICAD

Materials

Housing

Aluminium

Top part of ICAD

PBT thermo plastic

Weight

- **ICAD 600B:** 1.6 kg / 3.53 lbs
- **ICAD 1200B:** 2.3 kg / 5.06 lbs

The ICM Concept

The ICM concept is developed around a modular principle. This gives the possibility of combining function modules and top covers with special valve body size that is available in a variety of connection possibilities.

There are nine valve bodies available.

Table: Valve sizes

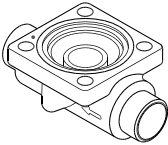
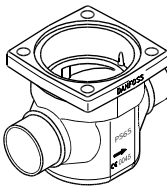
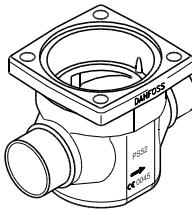
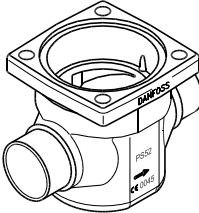
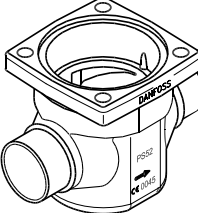
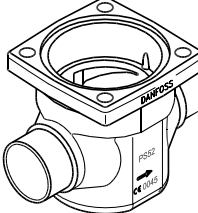
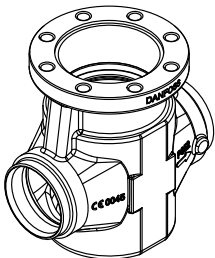
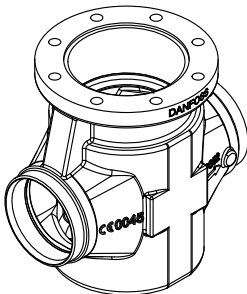
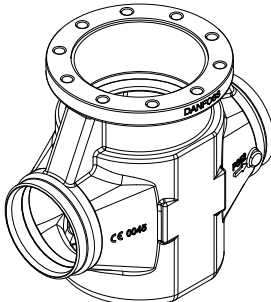
ICV 20	ICV 25	ICV 32	ICV 40	ICV 50	ICV 65
					

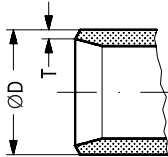
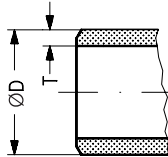
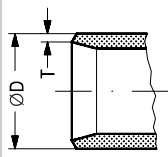
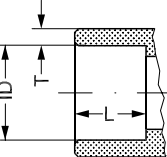
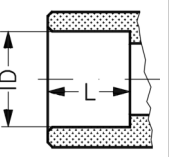
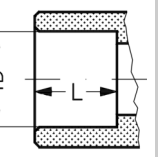
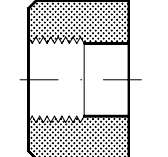
Table: Valve sizes

ICV 100	ICV 125	ICV 150
		

Valve bodies in the sizes ICV 20 – ICV 65 are available with a range of undersizes through oversized connection sizes and types.

ICV 100 – ICV 150 are available in butt-weld DIN and butt-weld ANSI nominal sizes.

Table: Connections

D	A	J	SOC	SD	SA	FPT
						
Butt-weld DIN	Butt-weld ANSI	Butt-weld JIS	Socket weld ANSI	Solder DIN	Solder ANSI	Female Pipe Thread

ICM motor and ICAD actuator combinations

The ICM motor operated valve and ICAD actuator combinations are as follows:

Table: Valve and actuator combination

Actuator	ICAD 600B	ICAD 1200B
Valve size	ICM 20	ICM 40
	ICM 25	ICM 50
	ICM 32	ICM 65
	–	ICM 100
	–	ICM 125
	–	ICM 150

ICAD 600B / ICAD 1200B

ICAD actuators can be controlled using the following signals:

- 0 – 20 mA
- 4 – 20 mA (default)
- 0 – 10 V
- 2 – 10 V
- One or two digital Input
- Via data communication:
 - Modbus RTU (RS485)
 - Modbus TCP/IP (Ethernet)

ICAD actuators can operate an ICM valve as an On / Off function supported by one digital input.

ICAD actuators can operate an ICM valve as Neutral zone / 3 point control supported by two digital inputs.

The ICM valve can be operated manually via the ICAD actuator or the multi-function tool for ICM (see the ordering section).

Fail Safe supply options

In the event of a power failure, multiple fail safe options are possible, provided that a ICAD-UPS or similar is used.

During power failure, ICM can be selected to:

- Close ICM
- Open ICM
- Stay in the same position, as when power failure occurs
- Go to a specific ICM valve opening degree

See the section [ICAD UPS](#) for further information.

NOTE: A fail safe supply (battery or UPS) is required.

Electrical

ICAD

Electrical connection

Connection to ICAD is done via M12 connectors. ICAD has three M12 connectors build-in:

Power supply

4 poled M12 male connector

Control signals

8 poled M12 male connector

Data communication

4 poled M12 female connector

ICAD is delivered without cables. They are to be delivered separately. Cables are equipped with M12 connectors.

- Power Supply cable with 4 poled M12 female connector: 4 x 0.34 mm² (3 x ~22 AWG)
- Control cable with 8 poled M12 female connector: 7 x 0.25 mm² (7 x ~24 AWG)
- Data communication cable with 4 poled M12 female connector: 4 x 0.08 mm² (4 x ~26 AWG)

Cable set with M12 connectors in other lengths are available. See the section "[Spare parts and accessories](#)".

Please observe cable voltage drop

Distance between the applied DC transformer and the ICAD terminal box may cause a voltage drop. Cross section of cables and size of DC transformer must be calculated so that the voltage at all times **at the ICAD terminal box** ⁽²⁾, both during standstill and during operation of ICAD, is within this range:

Table: Voltage at all times at the ICAD terminal box

Prefabricated ICAD cable length Code number		1.5 m 027H0426	3 m 027H0438	10 m 027H0427	15 m 027H0435
Voltage ICAD terminal (600B / 1200B) [V DC]	Min.	21	22	23	24
	Max.	26.4			

⁽²⁾ Do not measure inside the ICAD itself.

Supply voltage is galvanic isolated from Input/Output

Supply voltage: see Table: Voltage at all time at the ICAD terminal box

Load:

- **ICAD 600B:** 1.2 A
- **ICAD 1200B:** 2.0 A

Fail safe supply: 24 V DC (Tolerances)**Table: Load**

Description	Value
ICAD 600B, ICAD 600B-TS	1.2 A
ICAD 1200B	2.0 A

Data communication (RS485/Ethernet)

It is important that the installation of the data communication cable is done correctly. Remember termination at the bus termination.

RS485: Max. length of cable: 1200 m with specific cable and limited data rate. Follow RS485 standard.

Insulation from power supply input, metallic part and interface output: 500 V DC: For input/output connections.

Analogue Input - Current or Voltage**Table: Current**

Input range	0/4 – 20 mA
Max input range	0 – 24 mA
Input resistance	120 Ω + diode voltage 0.7 V DC
Measurement error	< $\pm$ 1.5% of the full scale
Reverse polarity protection	yes
Overcurrent protection	yes

Table: Voltage

Input range	0/2 – 10 V DC
Max input range	0 – 12 V DC
Measurement error	< $\pm$ 1.5% of the full scale
Reverse polarity protection	yes

Analogue Output**Table: Current**

Output range	0/4 – 20 mA
Load	<800 Ω
Output error	< $\pm$ 1.5% of the full scale
Recommended external resistor for Hot application	R _{ext} =800 Ω -load 1W power rate

Digital Input

Digital ON/OFF input by means of volt free contact (Signal/Telecom relays with gold-plated contacts recommended) – Voltage input used.

Table: Current

Rth rise (OFF)	>10 kΩ
Rth fall (ON)	< 45 Ω

Digital Output

Digital Output - 3 pcs. NPN transistor output.

External supply

7 – 24 V DC (same supply as for ICAD can be used, but please note that the galvanically isolated system will then be spoiled).

On resistance

55 Ω + diode voltage 0.7 V DC

Max 70 Ω at 50 mA

Max Output current: 50 mA

Reverse polarity protection: Yes

Overcurrent protection: No

Cable connection

There are three cables which are connected to the ICAD motor with M12 connectors:

Figure: Cable Connectors

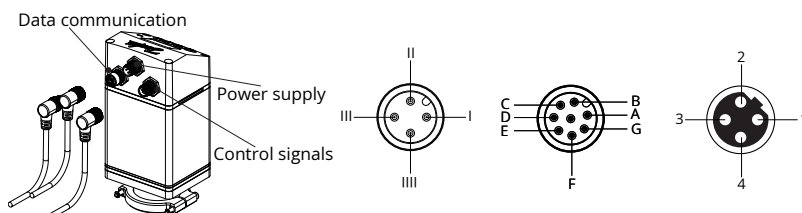
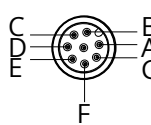
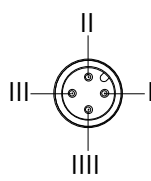
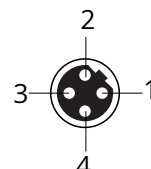


Figure: ICAD back Description

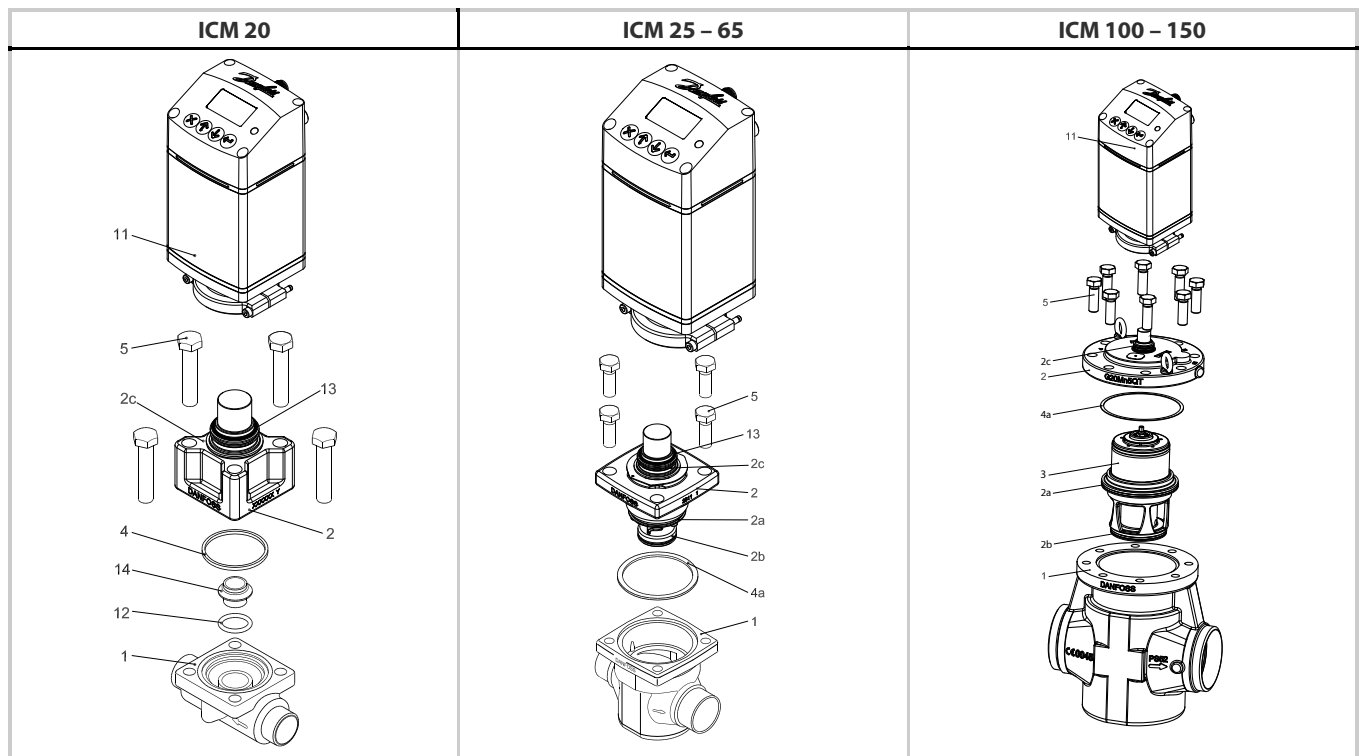
ICAD back	Ref	Color	Description	
	A	Black	-	Common alarm
	B	Brown	-	ICM fully open
	C	Red	-	ICM fully closed
	D	Orange	-	GND ground
	E	Yellow	+	0/4 – 20 mA Input
	F	Green	+	0/2 – 10 V input or digital input for on/off control
	G	Blue	+	0/4 – 20 mA Output
	I	Black	+	Fail safe supply. Battery / UPS* 19 V DC
	II	White	+	Supply voltage
	III	Brown	-	24 V DC 2A, or more, per ICAD recommended ICAD PSU must be SELV**, >15 W
	IV	Blue	+	UPS Signal of Health - optional depending on ID31: 'UPS supply' set to 'Yes'
RS485/ Ethernet				
	1	White/Blue	(-) / TX+	Data – (B) / Transmit Pair(+)
	2	White/Orange	GND / RX+	Ground / Receiving Pair(+)
	3	Blue	(+) / TX-	Data + (A) / Transmit Pair(-)
	4	Orange	GND / RX-	Ground / Receiving Pair(-)

*Uninterruptable Power Supply

**The ICAD is a class III appliance

Materials

Table: ICM specification



No.	Part	Material	EN	ASTM	JIS
1	Housing	Low temperature steel	G20Mn5QT, EN 10213-3	LCC, A352	SCPL1, G5151
2	Top cover	Low temperature steel	G20Mn5QT, EN 10213-3	LCC, A352	SCPL1, G5151
2a	O-ring	Chloroprene (Neoprene)			
2b	O-ring	Chloroprene (Neoprene)			
2c	O-ring	Chloroprene (Neoprene)			
3	Function module				
4	Gasket	Chloroprene (Neoprene)			
4a	Gasket	Fiber, non-asbestos			
5	Bolts	Stainless steel	A2-70, EN 1515-1	Grade B8 A320	A2-70, B 1054
11	Actuator				
12	O-ring	Chloroprene (Neoprene)			
13	O-ring	Chloroprene (Neoprene)			
14	Seat	High density polymer			

NOTE:

Table: Bolt sizes (pos. 5)

Type	Screw	Type	Screw
ICM 20	M10 × 55 A2-70 DIN 931	ICM 100	M20 × 60 A2-70 DIN 933
ICM 25	M12 × 30 A2-70 DIN 933	ICM 125	M20 × 60 A2-70 DIN 933
ICM 32	M14 × 35 A2-70 DIN 933	ICM 150	M20 × 70 A2-70 DIN 933
ICM 40	M14 × 35 A2-70 DIN 933		
ICM 50	M16 × 40 A2-70 DIN 933		
ICM 65	M16 × 40 A2-70 DIN 933		



Dimensions

ICM 20 – 32 / ICAD 600B

Figure: ICM 20 / ICAD 600B

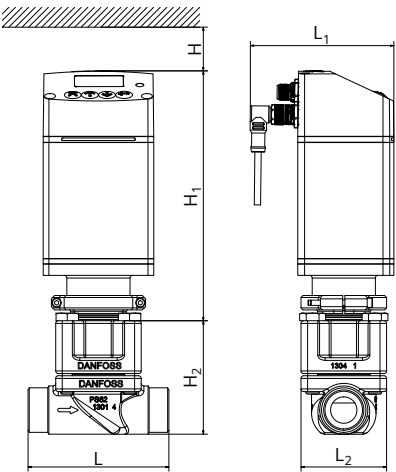


Figure: ICM 25 / ICAD 600B

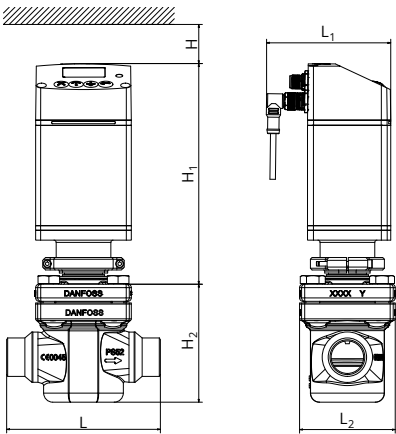


Figure: ICM 32 / ICAD 600B

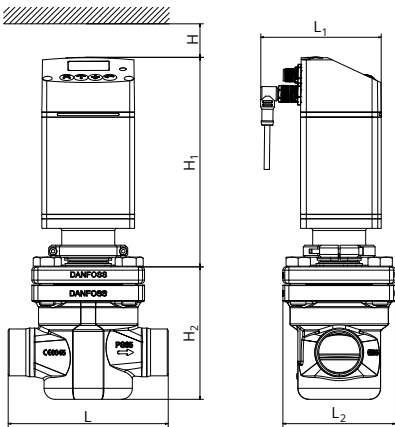


Table: Dimensions

ICM	size	H	H ₁	H ₂	L	L ₁	L ₂	Weight ICM incl. ICAD
ICM 20	mm	40	190	85	107	110	65	3,4 kg
	in	1.58	7.48	3.35	4.21	4.33	2.56	7.5 lbs
ICM 25	mm	40	190	99	135 ⁽¹⁾	110	84	4.5 kg
	in	1.58	7.48	3.9	5.31 ⁽¹⁾	4.33	3.31	9.9 lbs
ICM 32	mm	40	190	117	145 ⁽²⁾	110	110	6.2 kg
	in	1.58	7.48	4.61	5.71 ⁽²⁾	4.33	4.33	13.7 lbs

⁽¹⁾ Exceptions: 147 mm (5.79 in) for valve with connectors 28 SD (1 ½ in), 28 SA (1 ½ in) and 35 SD (1 ¾ in. SA); 148 (5.83 in) mm for 25 SOC (1 in)

⁽²⁾ Exceptions: 147 mm (5.79 in) for valve with connectors 32 SOC (1 ¼ in), 148 mm (5.83 in) for 35 SD (1 ¾ inch SA), 42 SD (1 ½ in) and 42 SA (1 ½ in)

ICM 40-65 / ICAD 1200B

Figure: ICM 40 / ICAD 1200B

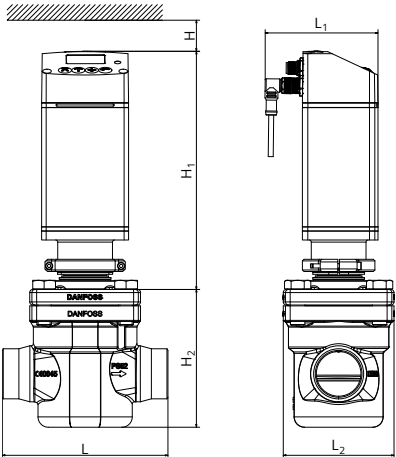


Figure: ICM 50 / ICAD 1200B

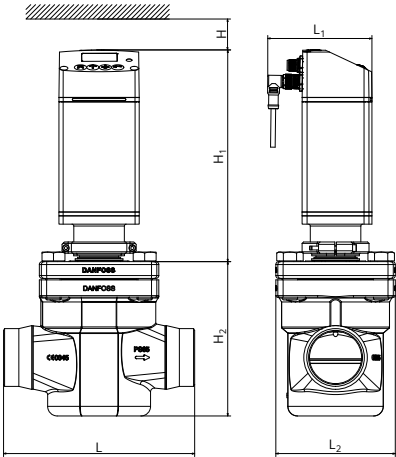


Figure: ICM 65 / ICAD 1200B

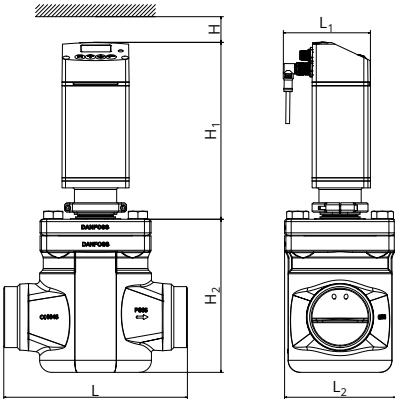


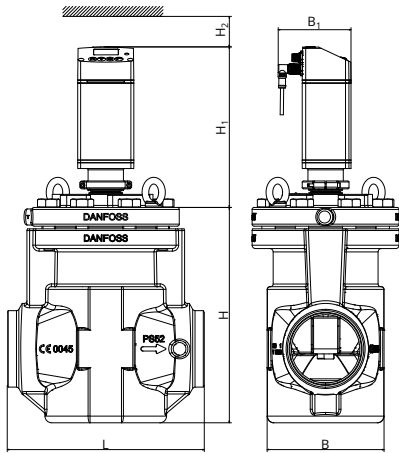
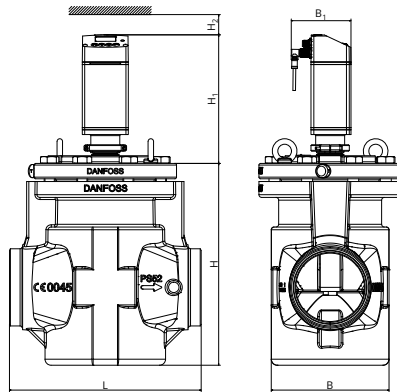
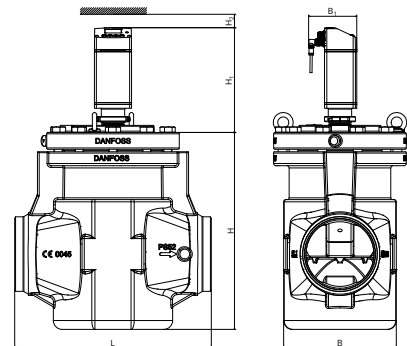
Table: Dimensions

ICM size		H	H ₁	H ₂	L	L ₁	L ₂	Weight ICM incl. ICAD
ICM 40	mm	45	237	131	180 ¹⁾	110	107	8.4 kg
	in	1.77	9.33	5.16	7.09 ¹⁾	4.33	4.21	18.5 lbs
ICM 50	mm	45	237	159	200 ²⁾	110	125	11.7 kg
	in	1.77	9.33	6.26	7.87 ²⁾	4.33	4.92	25.8 lbs
ICM 65	mm	45	237	188	230 ³⁾	110	139	17.2 kg
	in	1.77	9.33	7.4	9.06 ³⁾	4.33	5.47	80.5 lbs

¹⁾ Exceptions: 160 mm (6.3 in) for valve with connectors 40 D (1 ½ in) and 40 A (1 ½ in)

²⁾ Exceptions: 210 mm (8.27 in) for valve with connectors 65 D (2 ½ in) and 65 A (2 ½ in); 216 mm (8.5 in) for 50 SOC (2 in) and 54 SD (2 ½ in SA)

³⁾ Exceptions: 245 mm (9.65 in) for valve with connectors 80 D (3 in), 80 A (3 in), 76 SD (3 in.), 67 SA (2 ½ in)

ICM 100-150 / ICAD 1200B**Figure: ICM 100 / ICAD 1200B****Figure: ICM 125 / ICAD 1200B****Figure: ICM 150 / ICAD 1200B****Table: Dimensions**

ICM size		H	H ₁	H ₂	L	B	B ₁	Weight ICM incl. ICAD
ICM 100	mm	321	256	45	295	175	110	44 kg
	in	12.64	10.01	1.77	11.61	6.89	4.33	97 lbs
ICM 125	mm	365	256	45	350	215	110	55 kg
	in	14.37	10.01	1.77	13.78	8.47	4.33	121 lbs
ICM 150	mm	443	256	45	445	255	110	95 kg
	in	17.77	10.01	1.77	17.52	10.04	4.33	209 lbs

NOTE:

Weight presented in tables 28 – 30 is approximated only.

Connections

There is a very wide range of connection types available with ICM valves:

- **D:** Butt weld, EN 10220
- **A:** Butt weld, ANSI (B 36.10)
- **J:** Butt weld, JIS (B S 602)
- **SOC:** Socket weld, ANSI (B 16.11)
- **SD:** Solder connection, EN 1254-1
- **SA:** Solder connection, ANSI (B 16.22)
- **FPT:** Female pipe thread (ANSI/ASME B 1.20.1)

Table: Connections

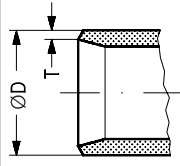
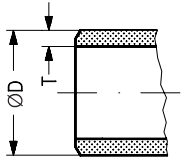
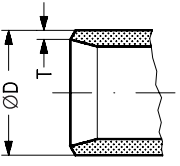
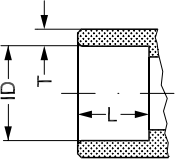
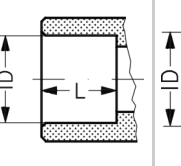
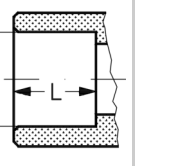
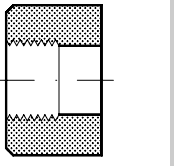
D	A	J	SOC	SD	SA	FPT
						
Butt-weld DIN	Butt-weld ANSI	Butt-weld JIS	Socket weld ANSI	Solder DIN	Solder ANSI	Female Pipe Thread

Table D: Butt-weld DIN (2448)

Size		ØD	T	ØD	T
[mm]	[in]	[mm]	[mm]	[in]	[in]
20	¾	26.9	2.3	1.059	0.091
25	1	33.7	2.6	1.327	0.103
32	1 ¼	42.4	2.6	1.669	0.102
40	1 ½	48.3	2.6	1.902	0.103
50	2	60.3	2.9	2.37	0.11
65	2 ½	76.1	2.9	3	0.11
80	3	88.9	3.2	3.5	0.13
100	4	114.3	3.6	4.5	0.14
125	5	140.7	4	5.5	0.16
150	6	168.3	6.3	6.6	0.25

Table A: Butt-weld ANSI (B 36.10)

Size	Size	ØD	T	ØD	T	Schedule
[mm]	[in]	[mm]	[mm]	[in]	[in]	
20	¾	26.9	4	1.059	0.158	80
25	1	33.7	4.6	1.327	0.181	80
32	1 ¼	42.4	4.9	1.669	0.193	80
40	1 ½	48.3	5.1	1.902	0.201	80
50	2	60.3	3.9	2.37	0.15	40
65	2 ½	73	5.2	2.87	0.2	40
80	3	88.9	5.5	3.5	0.22	40
100	4	114.3	6	4.5	0.24	
125	5	140.7	6.5	5.5	0.26	
150	6	168.3	7.1	6.6	0.28	

Table: J: Butt-weld JIS

Size	Size	ØD	T	ØD	T
[mm]	[in]	[mm]	[mm]	[in]	[in]
20	¾	26.9	4	1.059	0.158
25	1	33.7	4.6	1.327	0.181
32	1 ¼	42.4	4.9	1.669	0.193
40	1 ½	48.3	5.1	1.902	0.201
50	2	60.3	3.9	2.37	0.15
65	2 ½	76.3	5.2	3	0.2
80	3	88.9	5.5	3.5	0.22

Table: SOC: Socket welding ANSI (B 16.11)

Size	Size	ID	T	ID	T	L	L
[mm]	[in]	[mm]	[mm]	[in]	[in]	[mm]	[in]
20	¾	27.2	4.6	1.071	0.181	13	0.51
25	1	33.9	7.2	1.335	0.284	13	0.51
32	1 ¼	42.7	6.1	1.743	0.24	13	0.51
40	1 ½	48.8	6.6	1.921	0.26	13	0.51
50	2	61.2	6.2	2.41	0.24	16	0.63
65	2 ½	74	8.8	2.91	0.344	16	0.63

Table: SD: Soldering (DIN 2856)

Size	ID	L
[mm]	[mm]	[mm]
16	16.07	15
22	22.08	16.5
28	28.08	26
35	35.07	25
42	42.07	28
54	54.09	33
76	76.1	33

Table: SA: Soldering (ANSI B 16.22)

Size	ID	L
[in]	[in]	[in]
⅝	0.625	0.591
⅞	0.875	0.65
1 ⅝	1.125	1.024
1 ⅜	1.375	0.984
1 ⅝	1.625	1.102
2 ⅝	2.125	1.3
2 ⅞	2.625	1.3

Table: FPT: Female pipe thread, (ANSI/ASME B 1.20.1)

Size		Inside pipe thread
[mm]	[in]	
20	¾	(¾ x 14 NPT)
25	1	(1 x 11.5 NPT)
32	1 ¼	(1 ¼ x 11.5 NPT)

Ordering

Product code numbers

Ordering from the parts programme

ICM 20 / ICAD 600B

Table: Example (see ordering table)

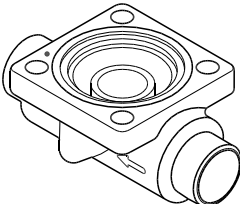
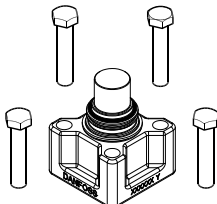
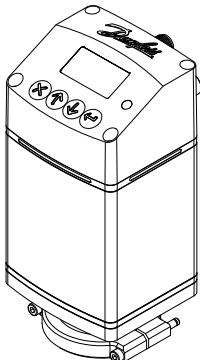
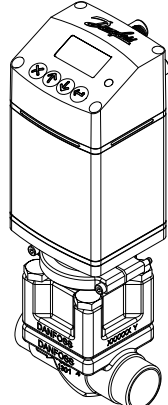
Valve body 22 SD (3/4 inch) 027H1154 Table: ICV 20		Top cover/function module ICM 20-B 027H1181 Table: ICM 20		Actuator 027H0485 Table: Actuator ICAD 600B		
	+		+		=	

Table: Type ICV 20

Type	Material Description	Connection standard	Connection type	Connection size [mm]	Connection size [in]	Code number
ICV 20	ICV 20 20 ANSI Valve housing	ASME B 36.10M SCHEDULE 80	Butt weld	20	3/4 in	027H1148
ICV 20	ICV 20 25 ANSI Valve housing	ASME B 36.10M SCHEDULE 80	Butt weld	25	1 in	027H1166
ICV 20	ICV 20 25 DIN Valve housing	EN 10220	Butt weld	25	1 in	027H1163
ICV 20	ICV 20 20 DIN Valve housing	EN 10220	Butt weld	20	3/4 in	027H1145
ICV 20	ICV 20 3/4 X 14 Female Pipe Thread Valve housing	ANSI/ASME B1.20.1	NPT	20	3/4 in	027H1157
ICV 20	ICV 20 20 ANSI Valve housing	ASME B 16.11	Socket weld	20	3/4 in	027H1151
ICV 20	ICV 20 5/8 ANSI Valve housing	ASME B 16.22	Soldering	16	5/8 in	027H1129
ICV 20	ICV 20 16 DIN Valve housing	EN 1254-1	Soldering	16	5/8 in	027H1132
ICV 20	ICV 20 22 DIN Valve housing	EN 1254-1	Soldering	22	7/8 in	027H1154
ICV 20	ICV 20 7/8 ANSI Valve housing	ASME B 16.22	Soldering	22	7/8 in	027H1160

Table: Type ICM 20

Type	Material Description	Code number
ICM 20-A33	ICM 20 A33 Function module	027H1186
ICM 20-A	ICM 20 A Function module	027H1180
ICM 20-B66	ICM 20 B66 Function module	027H1194
ICM 20-B	ICM 20 B Function module	027H1181
ICM 20-C	ICM 20 C Function module	027H1182

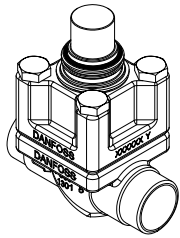
Note: Bolts and O-ring (for assembly with ICV valve body) Seat and O-ring (for seat to be mounted in ICV valve body)

Table: Type ICAD 600B

Type	Material Description	Code number
ICAD 600B	ICAD 600B display Bluetooth RS485	027H0485
ICAD 600B	ICAD 600B display Bluetooth Ethernet	027H0486
ICAD 600B	ICAD 600B no display Bluetooth RS485	027H0488
ICAD 600B	ICAD 600B no display Bluetooth Ethernet	027H0489

NOTE:

Cables should be ordered separately. Please see ICAD B data sheet [Motor actuator for ICM/ICM-TS motorized valves and CVE pilot valve.](#)

Ordering complete factory assembled valve without actuator**Figure: Valve without actuator****Table: Type ICM 20-A, ICM 20-B, ICM 20-C**

Type	Material Description	Connection standard	Connection type	Connection size [mm]	Connection size [in]	Code number
ICM 20-A	ICM 20-A 20 DIN	EN 10220	Butt weld	20	3/4 in	027H1030
ICM 20-A	ICM 20-A 25 DIN	EN 10220	Butt weld	25	1 in	027H1020
ICM 20-A	ICM 20-A 3/4 ANSI (20 A)	ASME B 36.10M SCHEDULE 80	Butt weld	20	3/4 in	027H1035
ICM 20-A	ICM 20-A 3/4 ANSI (20 ANSI)	ASME B 16.11	Socket weld	20	3/4 in	027H1040
ICM 20-A	ICM 20-A 7/8 ANSI	ASME B 16.22	Soldering	22	7/8 in	027H1050
ICM 20-A	ICM 20-A 22 DIN	EN 1254-1	Soldering	22	7/8 in	027H1045
ICM 20-B	ICM 20-B 20 DIN	EN 10220	Butt weld	20	3/4 in	027H1031
ICM 20-B	ICM 20-B 25 DIN	EN 10220	Butt weld	25	1 in	027H1021
ICM 20-B	ICM 20-B 3/4 ANSI (20 A)	ASME B 36.10M SCHEDULE 80	Butt weld	20	3/4 in	027H1036
ICM 20-B	ICM 20-B 3/4 ANSI (20 ANSI)	ASME B 16.11	Socket weld	20	3/4 in	027H1041
ICM 20-B	ICM 20-B 7/8 ANSI	ASME B 16.22	Soldering	22	7/8 in	027H1051
ICM 20-B	ICM 20-B 22 SD	EN 1254-1	Soldering	22	7/8 in	027H1046

Note:

For connection sizes and types not listed in this table, select the required components from the parts programme.

ICM 25 / ICAD 600B**Table: Example (see ordering table)**

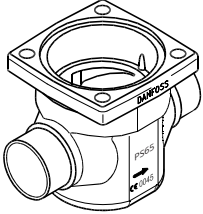
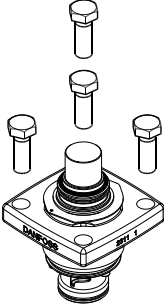
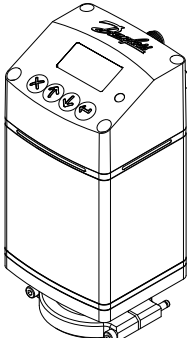
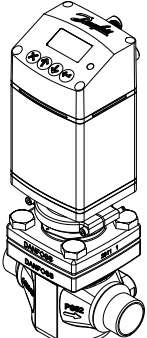
Valve body 32 D (1 ¼ inch) 027H2129 Table: ICM 25		Top cover/function module ICM 25-B 027H2181 Table: ICM 25		Actuator 027H0485 Table: Actuator ICAD 600B		
	+		+		=	

Table: Type ICM 25

Type	Material Description	Connection standard	Connection type	Connection size [mm]	Connection size [in]	Code number
ICV 25	ICV 25 DIN (1") VALVE HOUSING	EN 10220	Butt weld	25	1 in	027H2120
ICV 25	ICV 25 25 ANSI Valve housing	ASME B 36.10M SCHEDULE 80	Butt weld	25	1 in	027H2121
ICV 25	ICV 25 20 DIN Valve housing	EN 10220	Butt weld	20	3/4 in	027H2128
ICV 25	ICV 25 32 DIN Valve housing	EN 10220	Butt weld	32	1 1/4 in	027H2129
ICV 25	ICV 25 32 ANSI Valve housing	ASME B 36.10M SCHEDULE 80	Butt weld	32	1 1/4 in	027H2130
ICV 25	ICV 25 20 ANSI Valve housing	ASME B 36.10M SCHEDULE 80	Butt weld	20	3/4 in	027H2131
ICV 25	ICV 25 40 DIN Valve housing	EN 10220	Butt weld	40	1 1/2 in	027H2135
ICV 25	ICV 25 1-11,5 Female Pipe Thread Valve housing	ANSI/ASME B1.20.1	NPT	25	1 in	027H2127
ICV 25	ICV 25 3/4-14 Female Pipe Thread Valve housing	ANSI/ASME B1.20.1	NPT	20	3/4 in	027H2133
ICV 25	ICV 25 25 ANSI Valve housing	ASME B 16.11	Socket weld	25	1 in	027H2122
ICV 25	ICV 25 3/4 ANSI (20 SOC) Valve housing	ASME B 16.11	Socket weld	20	3/4 in	027H2132
ICV 25	ICV 25 22 DIN Valve housing	EN 1254-1	Soldering	22	7/8 in	027H2123
ICV 25	ICV 25 28 DIN Valve housing	EN 1254-1	Soldering	28	1 1/8 in	027H2124
ICV 25	ICV 25 7/8 ANSI Valve housing	ASME B 16.22	Soldering	22	7/8 in	027H2125
ICV 25	ICV 25 1 1/8 ANSI Valve housing	ASME B 16.22	Soldering	28	1 1/8 in	027H2126
ICV 25	ICV 25 1 3/8 ANSI Valve housing	ASME B 16.22	Soldering	35	1 3/8 in	027H2134

Table: Type ICM 25-A, ICM 25-A33, ICM 25-B

Type	Material Description	Code number
ICM 25-A	ICM 25A Functionmodule	027H2180
ICM 25-A33	ICM 25A33 Functionmodule	027H2190
ICM 25-B	ICM 25 B Top assembly	027H2181

Note: Including gasket and O-rings**Table: Type ICAD 600B**

Type	Material Description	Code number
ICAD 600B	ICAD 600B display Bluetooth RS485	027H0485
ICAD 600B	ICAD 600B display Bluetooth Ethernet	027H0486
ICAD 600B	ICAD 600B no display Bluetooth RS485	027H0488
ICAD 600B	ICAD 600B no display Bluetooth Ethernet	027H0489

NOTE:Cables should be ordered separately. Please see ICAD B data sheet [Motor actuator for ICM/ICM-TS motorized valves and CVE pilot valve.](#)

Ordering complete factory assembled valve without actuator

Figure: Valve without actuator

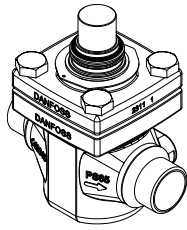


Table: Type ICM 25-A, ICM 25-B

Type	Material Description	Connection standard	Connection type	Connection size [mm]	Connection size [in]	Code number
ICM 25-A	ICM 25-A 25 DIN	EN 10220	Butt weld	25	1 in	027H2000
ICM 25-A	ICM 25-A 40 DIN	EN 10220	Butt weld	40	1 1/2 in	027H2016
ICM 25-A	ICM 25-A 1 3/8 ANSI	ASME B 16.22	Soldering	35	1 3/8 in	027H2014
ICM 25-A	ICM 25-A 1 1/8 ANSI	ASME B 16.22	Soldering	28	1 1/8 in	027H2012
ICM 25-A	ICM 25-A 7/8 ANSI	ASME B 16.22	Soldering	22	7/8 in	027H2010
ICM 25-A	ICM 25-A 28 DIN	EN 1254-1	Soldering	28	1 1/8 in	027H2008
ICM 25-A	ICM 25-A 22 DIN	EN 1254-1	Soldering	22	7/8 in	027H2006
ICM 25-A	ICM 25-A 1 ANSI (25A)	ASME B 36.10M SCHEDULE 80	Butt weld	25	1 in	027H2002
ICM 25-A	ICM 25-A 1 ANSI (25 ANSI)	ASME B 16.11	Socket weld	25	1 in	027H2004
ICM 25-B	ICM 25-B 25 DIN	EN 10220	Butt weld	25	1 in	027H2001
ICM 25-B	ICM 25-B 1 3/8 ANSI	ASME B 16.22	Soldering	35	1 3/8 in	027H2015
ICM 25-B	ICM 25-B 1 1/8 ANSI	ASME B 16.22	Soldering	28	1 1/8 in	027H2013
ICM 25-B	ICM 25-B 7/8 ANSI	ASME B 16.22	Soldering	22	7/8 in	027H2011
ICM 25-B	ICM 25-B 28 DIN	EN 1254-1	Soldering	28	1 1/8 in	027H2009
ICM 25-B	ICM 25-B 22 DIN	EN 1254-1	Soldering	22	7/8 in	027H2007
ICM 25-B	ICM 25-B 1 ANSI (25A)	ASME B 36.10M SCHEDULE 80	Butt weld	25	1 in	027H2003
ICM 25-B	ICM 25-A 1 ANSI (25 ANSI)	ASME B 16.11	Socket weld	25	1 in	027H2005

Note:

For connection sizes and types not listed in this table, select the required components from the parts programme.

ICM 32 / ICAD 600B

Table: Example (see ordering table)

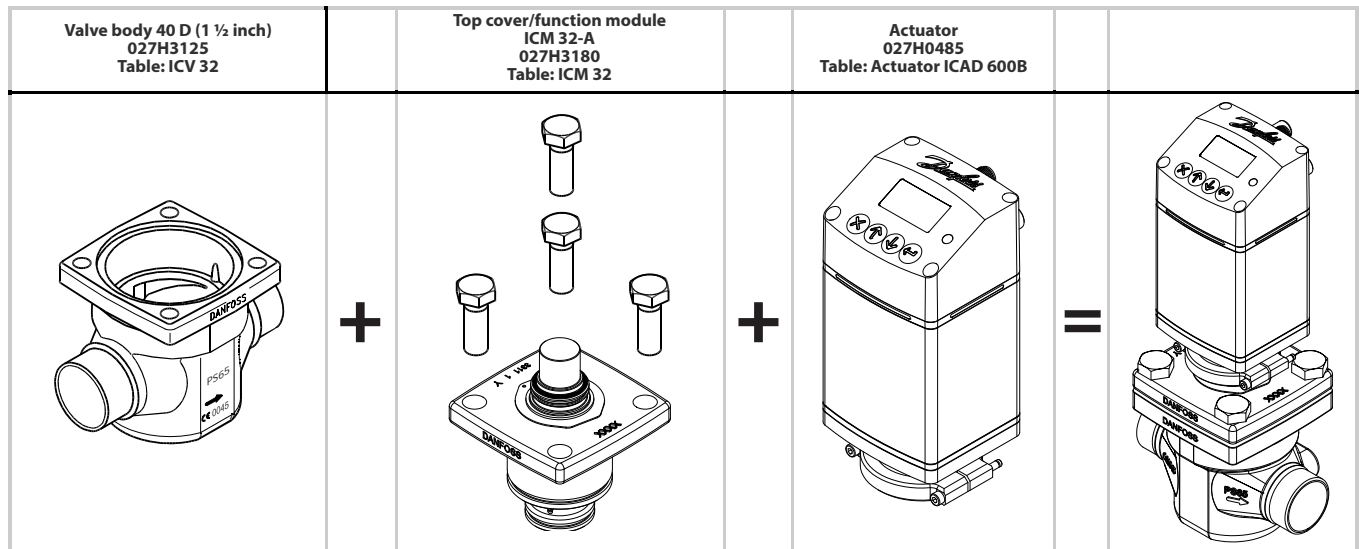


Table: Type ICV 32

Type	Material Description	Connection standard	Connection type	Connection size [mm]	Connection size [in]	Code number
ICV 32	ICV 32 32 DIN Valve housing	EN 10220	Butt weld	32	1 1/4 in	027H3120
ICV 32	ICV 32 40 DIN Valve housing	EN 10220	Butt weld	40	1 1/2 in	027H3125
ICV 32	ICV 32 1 5/8 ANSI Valve housing	ASME B 16.22	Soldering	42	1 5/8 in	027H3127
ICV 32	ICV 32 42 DIN Valve housing	EN 1254-1	Soldering	42	1 5/8 in	027H3128
ICV 32	ICV 32 1-3/8 ANSI / 35 SD Valve housing	ASME B 16.22	Soldering	35	1 3/8 in	027H3123
ICV 32	ICV 32 32 ANSI Valve housing	ASME B 36.10M SCHEDULE 80	Butt weld	32	1 1/4 in	027H3121
ICV 32	ICV 32 32 ANSI Valve housing	ASME B 16.11	Socket weld	32	1 1/4 in	027H3122
ICV 32	ICV 32 40 ANSI Valve housing	ASME B 36.10M SCHEDULE 80	Butt weld	40	1 1/2 in	027H3126

Table: Type ICM 32-A, ICM 32-B

Type	Material Description	Code number
ICM 32-A	ICM 32A Functionmodule	027H3180
ICM 32-B	ICM 32B Functionmodule	027H3181

Note: Including gasket and O-rings

Table: Type ICAD 600B

Type	Material Description	Code number
ICAD 600B	ICAD 600B display Bluetooth RS485	027H0485
ICAD 600B	ICAD 600B display Bluetooth Ethernet	027H0486
ICAD 600B	ICAD 600B no display Bluetooth RS485	027H0488
ICAD 600B	ICAD 600B no display Bluetooth Ethernet	027H0489

NOTE:

Cables should be ordered separately. Please see ICAD B data sheet [Motor actuator for ICM/ICM-TS motorized valves and CVE pilot valve.](#)



Ordering complete factory assembled valve without actuator

Figure: Valve without actuator

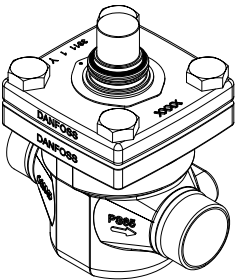


Table: Type ICM 32-A, ICM 32-B

Type	Material Description	Connection standard	Connection type	Connection size [mm]	Connection size [in]	Code number
ICM 32-A	ICM 32-A 32 DIN	EN 10220	Butt weld	32	1 1/4 in	027H3000
ICM 32-A	ICM 32-A 40 DIN	EN 10220	Butt weld	40	1 1/2 in	027H3012
ICM 32-A	ICM 32-A 1 5/8 ANSI	ASME B 16.22	Soldering	42	1 5/8 in	027H3008
ICM 32-A	ICM 32-A 1 3/8 ANSI 35 DIN	ASME B 16.22	Soldering	35	1 3/8 in	027H3006
ICM 32-A	ICM 32-A 1 1/4 ANSI (32A)	ASME B 36.10M SCHEDULE 80	Butt weld	32	1 1/4 in	027H3002
ICM 32-A	ICM 32-A 1 1/4 ANSI (32 ANSI)	ASME B 16.11	Socket weld	32	1 1/4 in	027H3004
ICM 32-B	ICM 32-B 32 DIN	EN 10220	Butt weld	32	1 1/4 in	027H3001
ICM 32-B	ICM 32-B 1 3/8 ANSI 35 DIN	ASME B 16.22	Soldering	35	1 3/8 in	027H3007
ICM 32-B	ICM 32-B 1 1/4 ANSI (32 A)	ASME B 36.10M SCHEDULE 80	Butt weld	32	1 1/4 in	027H3003
ICM 32-B	ICM 32-B 1 1/4 ANSI (32 ANSI)	ASME B 16.11	Socket weld	32	1 1/4 in	027H3005

Note:

For connection sizes and types not listed in this table, select the required components from the parts programme.

ICM 40 / ICAD 1200B

Table: Example (see ordering table)

Valve body A 40 (1 1/2 inch) 027H4121 Table: ICM 40		Top cover/function module ICM 40-A 027H4180 Table: ICM 40		Actuator 027H0490 Table: Actuator ICAD 1200B		
	+		+		=	

Table: Type ICV 40

Type	Material Description	Connection standard	Connection type	Connection size [mm]	Connection size [in]	Code number
ICV 40	ICV 40 DIN Valve housing	EN 10220	Butt weld	40	1 1/2 in	027H4120
ICV 40	ICV 40 50 DIN Valve housing	EN 10220	Butt weld	50	2 in	027H4126
ICV 40	ICV 40 1 5/8 ANSI Valve housing	ASME B 16.22	Soldering	42	1 5/8 in	027H4124
ICV 40	ICV 40 42 DIN Valve housing	EN 1254-1	Soldering	42	1 5/8 in	027H4123
ICV 40	ICV 40 40 ANSI Valve housing	ASME B 36.10M SCHEDULE 80	Butt weld	40	1 1/2 in	027H4121
ICV 40	ICV 40 ANSI Valve housing	ASME B 16.11	Socket weld	40	1 1/2 in	027H4122
ICV 40	ICV 40 50 ANSI Valve housing	ASME B 36.10M SCHEDULE 80	Butt weld	50	2 in	027H4127

Table: Type ICM 40-A, ICM 40-B

Type	Material Description	Code number
ICM 40-A	ICM 40A Functionmodule	027H4180
ICM 40-B	ICM 40B Functionmodule	027H4181

Note: Including gasket and O-rings

Table: Type ICAD 1200B

Type	Material Description	Code number
ICAD 1200B	ICAD 1200B display Bluetooth RS485	027H0490
ICAD 1200B	ICAD 1200B display Bluetooth Ethernet	027H0491
ICAD 1200B	ICAD 1200B no display Bluetooth RS485	027H0493
ICAD 1200B	ICAD 1200B no display Bluetooth Ethernet	027H0494

NOTE:

Cables should be ordered separately. Please see ICAD B data sheet [Motor actuator for ICM/ICM-TS motorized valves and CVE pilot valve.](#)

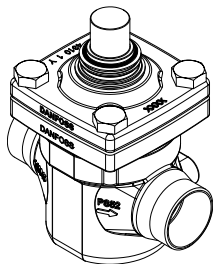
Ordering complete factory assembled valve without actuator**Figure: Valve without actuator**

Table: Type ICM 40-A, ICM 40-B

Type	Material Description	Connection standard	Connection type	Connection size [mm]	Connection size [in]	Code number
ICM 40-A	ICM 40-A 40 DIN	EN 10220	Butt weld	40	1 1/2 in	027H4000
ICM 40-A	ICM 40-A 50 DIN	EN 10220	Butt weld	50	2 in	027H4010
ICM 40-A	ICM 40-A 1 5/8 ANSI	ASME B 16.22	Soldering	42	1 5/8 in	027H4006
ICM 40-A	ICM 40-A 42 DIN	EN 1254-1	Soldering	42	1 5/8 in	027H4008
ICM 40-A	ICM 40-A 1 1/2 ANSI (40A)	ASME B 36.10M SCHEDULE 80	Butt weld	40	1 1/2 in	027H4002
ICM 40-A	ICM 40-A 1 1/2 ANSI (40 ANSI)	ASME B 16.11	Socket weld	40	1 1/2 in	027H4004
ICM 40-B	ICM 40-B DIN	EN 10220	Butt weld	40	1 1/2 in	027H4001
ICM 40-B	ICM 40-B 1 5/8 ANSI	ASME B 16.22	Soldering	42	1 5/8 in	027H4007
ICM 40-B	ICM 40-B 42 DIN	EN 1254-1	Soldering	42	1 5/8 in	027H4009
ICM 40-B	ICM 40-B 1 1/2 ANSI (40 A)	ASME B 36.10M SCHEDULE 80	Butt weld	40	1 1/2 in	027H4003
ICM 40-B	ICM 40-B 1 1/2 ANSI (40 ANSI)	ASME B 16.11	Socket weld	40	1 1/2 in	027H4005

Note:

For connection sizes and types not listed in this table, select the required components from the parts programme.

ICM 50 / ICAD 1200B**Table: Example (see ordering table)**

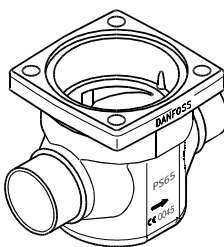
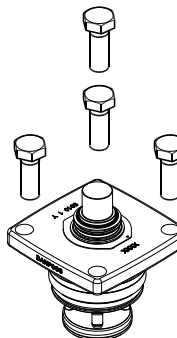
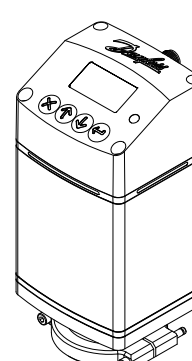
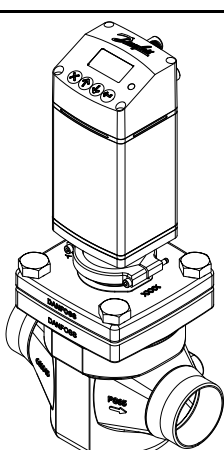
Valve body 65 D (1 1/2 inch) 027H5124 Table: ICV 50		Top cover/function module ICM 50-A 027H4180 Table: ICM 50		Actuator 027H0490 Table: Actuator ICAD 1200B		
	+		+		=	

Table: Type ICV 50

Type	Material Description	Connection standard	Connection type	Connection size [mm]	Connection size [in]	Code number
ICV 50	ICV 50 50 DIN Valve housing	EN 10220	Butt weld	50	2 in	027H5120
ICV 50	ICV 50 50 ANSI Valve housing	ASME B 36.10M SCHEDULE 40	Butt weld	50	2 in	027H5121
ICV 50	ICV 50 2-1/8 ANSI Valve housing	EN 1254-1	Soldering	54	2 1/8 in	027H5123
ICV 50	ICV 50 65 DIN Valve housing	EN 10220	Butt weld	65	2 1/2 in	027H5124
ICV 50	ICV 50 50 ANSI Valve housing	ASME B 16.11	Socket weld	50	2 in	027H5122
ICV 50	ICV 50 65 ANSI Valve housing	ASME B 36.10M SCHEDULE 40	Butt weld	65	2 1/2 in	027H5125

Table: Type ICM 50-A, ICM 50-B

Type	Material Description	Code number
ICM 50-A	ICM 50A - Overhaul kit	027H5180
ICM 50-B	ICM 50B Functionmodule	027H5181

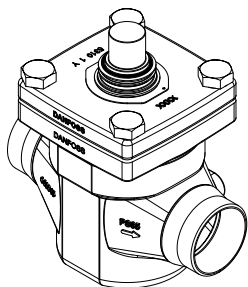
Note: Including gasket and O-rings

Table: Type ICAD 1200B

Type	Material Description	Code number
ICAD 1200B	ICAD 1200B display Bluetooth RS485	027H0490
ICAD 1200B	ICAD 1200B display Bluetooth Ethernet	027H0491
ICAD 1200B	ICAD 1200B no display Bluetooth RS485	027H0493
ICAD 1200B	ICAD 1200B no display Bluetooth Ethernet	027H0494

NOTE:

Cables should be ordered separately. Please see ICAD B data sheet [Motor actuator for ICM/ICM-TS motorized valves and CVE pilot valve.](#)

Ordering complete factory assembled valve without actuator**Figure: Valve without actuator****Table: Type ICM 50-A, ICM 50-B**

Type	Material Description	Connection standard	Connection type	Connection size [mm]	Connection size [in]	Code number
ICM 50-A	ICM 50-A 50 DIN	EN 10220	Butt weld	50	2 in	027H5000
ICM 50-A	ICM 50-A 65 DIN	EN 10220	Butt weld	65	2 1/2 in	027H5008
ICM 50-A	ICM 50-A 2 1/8 ANSI / 54 DIN	ASME B 16.22	Soldering	54	2 1/8 in	027H5006
ICM 50-A	ICM 50-A 2 ANSI (50A)	ASME B 36.10M SCHEDULE 40	Butt weld	50	2 in	027H5002
ICM 50-A	ICM 50-A 2 ANSI (50 ANSI)	ASME B 16.11	Socket weld	50	2 in	027H5004
ICM 50-B	ICM 50-B 50 DIN	EN 10220	Butt weld	50	2 in	027H5001
ICM 50-B	ICM 50-B 2 1/8 SA / 54 DIN	ASME B 16.22	Soldering	54	2 1/8 in	027H5007
ICM 50-B	ICM 50-B 2 ANSI (50 A)	ASME B 36.10M SCHEDULE 40	Butt weld	50	2 in	027H5003
ICM 50-B	ICM 50-B 2 ANSI (50 ANSI)	ASME B 16.11	Socket weld	50	2 in	027H5005

Note:

For connection sizes and types not listed in this table, select the required components from the parts programme.

ICM 65 / ICAD 1200B

Table: Example (see ordering table)

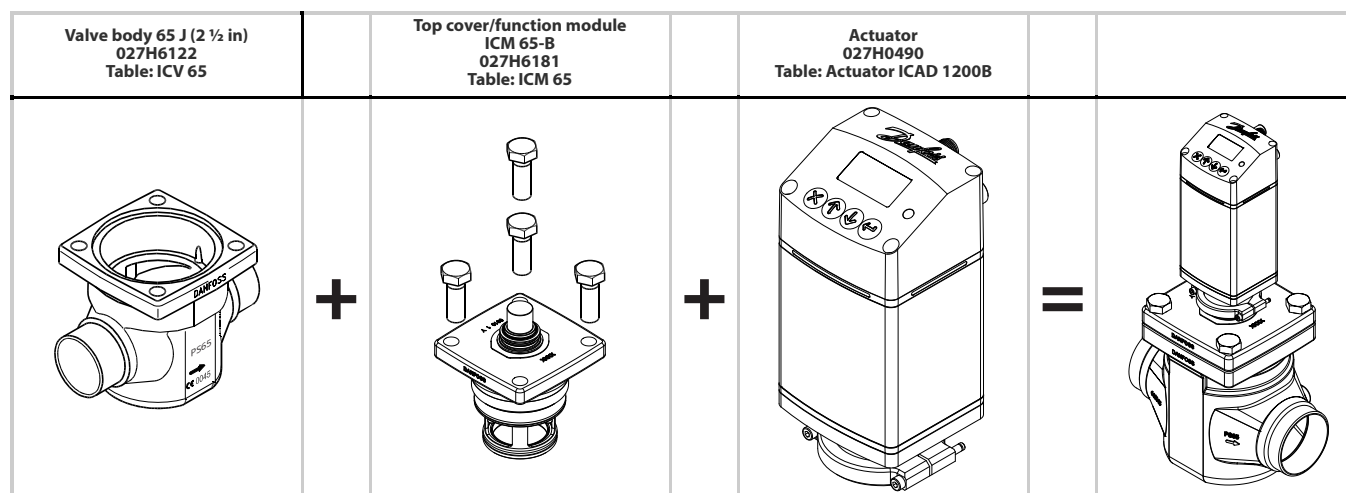


Table: Type ICV 65

Type	Material Description	Connection standard	Connection type	Connection size [mm]	Connection size [in]	Code number
ICV 65	ICV 65 65 DIN Valve housing	EN 10220	Butt weld	65	2 1/2 in	027H6120
ICV 65	ICV 65 65 ANSI Valve housing	ASME B 36.10M SCHEDULE 40	Butt weld	65	2 1/2 in	027H6121
ICV 65	ICV 65 65 JIS Valve housing	JIS G 3454	Butt weld	65	2 1/2 in	027H6122
ICV 65	ICV 65 80 DIN Valve housing	EN 10220	Butt weld	80	3	027H6126
ICV 65	ICV 65 80 ANSI Valve housing	ASME B 36.10M SCHEDULE 40	Butt weld	80	3	027H6127
ICV 65	ICV 65 2-5/8 ANSI Valve housing	ASME B 16.22	Soldering	76	2 5/8 in	027H6125
ICV 65	ICV 65 76 DIN Valve housing	EN 1254-1	Soldering	76	3 in	027H6124
ICV 65	ICV 65 65 ANSI Valve housing	ASME B 16.11	Socket weld	65	2 1/2 in	027H6123

Table: Type ICM 65-A, ICM 65-B

Type	Material Description	Code number
ICM 65-A	ICM 65A Functionmodule	027H6180
ICM 65-B	ICM 65B Functionmodule	027H6181

Table: Type ICAD 1200B

Type	Material Description	Code number
ICAD 1200B	ICAD 1200B display Bluetooth RS485	027H0490
ICAD 1200B	ICAD 1200B display Bluetooth Ethernet	027H0491
ICAD 1200B	ICAD 1200B no display Bluetooth RS485	027H0493
ICAD 1200B	ICAD 1200B no display Bluetooth Ethernet	027H0494

NOTE:

Cables should be ordered separately. Please see ICAD B data sheet [Motor actuator for ICM/ICM-TS motorized valves and CVE pilot valve.](#)

Ordering complete factory assembled valve without actuator

Figure: Valve without actuator

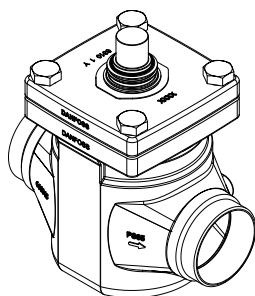


Table: Type ICM 65-A, ICM 65-B

Type	Material Description	Connection standard	Connection type	Connection size [mm]	Connection size [in]	Code number
ICM 65-A	ICM 65-A 65 DIN STR	EN 10220	Butt weld	65	2 1/2 in	027H6010
ICM 65-A	ICM 65-A 65 ANSI STR	ASME B 36.10M SCHEDULE 40	Butt weld	65	2 1/2 in	027H6012
ICM 65-B	ICM 65-B 65 DIN	EN 10220	Butt weld	65	2 1/2 in	027H6001
ICM 65-B	ICM 65-B 2½ ANSI (65 A)	ASME B 36.10M SCHEDULE 40	Butt weld	65	2 1/2 in	027H6003
ICM 65-B	ICM 65-B 2 5/8 ANSI	ASME B 16.22	Soldering	67	2 5/8 in	027H6007
ICM 65-B	ICM 65-B 76 DIN	EN 1254-1	Soldering	76	3 in	027H6009
ICM 65-B	ICM 65-B 2 2 1/2 ANSI (65 ANSI)	ASME B 16.11	Socket weld	65	2 1/2 in	027H6005

Note:

For connection sizes and types not listed in this table, select the required components from the parts programme.

ICM 100

Complete factory assembled valve without actuator

Figure: Body, function module / top cover

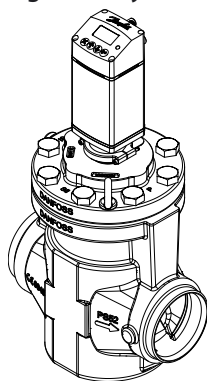


Figure: ICM 100 Valve body

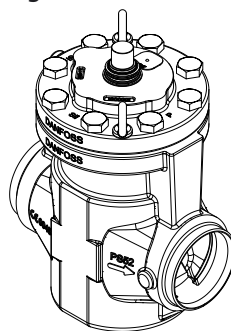


Table: Type ICM 100

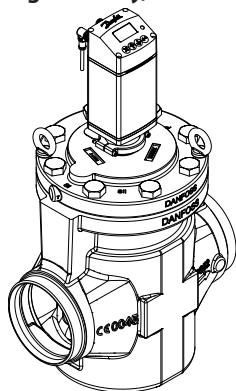
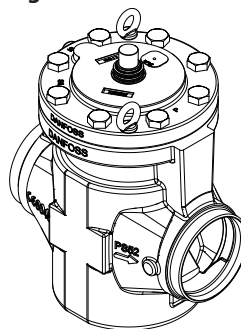
Type	Material Description	Connection standard	Connection type	Connection size [mm]	Connection size [in]	Code number
ICM 100	ICM 65-A 65 D STRICM 100 DN, DIN Connection	EN 10220	Butt weld	100	4 in	027H7130
ICM 100	ICM 100 DN, ANSI Connection	ASME B 36.10M SCHEDULE 40	Butt weld	100	4 in	027H7131

Table: Type ICAD 1200B

Type	Material Description	Code number
ICAD 1200B	ICAD 1200B display Bluetooth RS485	027H0490
ICAD 1200B	ICAD 1200B display Bluetooth Ethernet	027H0491
ICAD 1200B	ICAD 1200B no display Bluetooth RS485	027H0493
ICAD 1200B	ICAD 1200B no display Bluetooth Ethernet	027H0494

NOTE:

Cables should be ordered separately. Please see ICAD B data sheet [Motor actuator for ICM/ICM-TS motorized valves and CVE pilot valve.](#)

ICM 125**Complete factory assembled valve without actuator****Figure: Body, function module / top cover****Figure: ICM 100 Valve body****Table: Type ICM 125**

Type	Material Description	Connection standard	Connection type	Connection size [mm]	Connection size [in]	Code number
ICM 125	ICM 125 DN, DIN Connection	EN 10220	Butt weld	125	5 in	027H7150
ICM 125	ICM DN 125, ANSI connection	ASME B 36.10M SCHEDULE 40	Butt weld	125	5 in	027H7151

Table: Type ICAD 1200B

Type	Material Description	Code number
ICAD 1200B	ICAD 1200B display Bluetooth RS485	027H0490
ICAD 1200B	ICAD 1200B display Bluetooth Ethernet	027H0491
ICAD 1200B	ICAD 1200B no display Bluetooth RS485	027H0493
ICAD 1200B	ICAD 1200B no display Bluetooth Ethernet	027H0494

NOTE:

Cables should be ordered separately. Please see ICAD B data sheet [Motor actuator for ICM/ICM-TS motorized valves and CVE pilot valve.](#)



ICM 150
Complete factory assembled valve without actuator

Figure: Body, function module / top cover

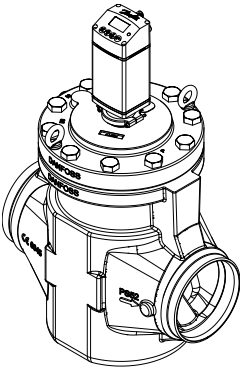


Figure: ICM 150 Valve body

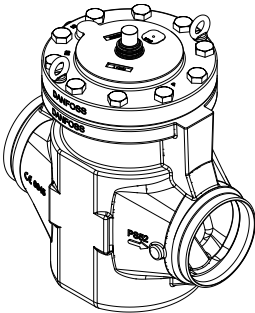


Table: Type ICM 150

Type	Material Description	Connection standard	Connection type	Connection size [mm]	Connection size [in]	Code number
ICM 150	ICM 150 DN, DIN Connection	EN 10220	Butt weld	150	6 in	027H7170
ICM 150	ICM 150 DN, ANSI Connection	ASME B 36.10M SCHEDULE 40	Butt weld	150	6 in	027H7171

Table: Type ICAD 1200B

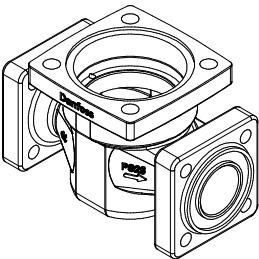
Type	Material Description	Code number
ICAD 1200B	ICAD 1200B display Bluetooth RS485	027H0490
ICAD 1200B	ICAD 1200B display Bluetooth Ethernet	027H0491
ICAD 1200B	ICAD 1200B no display Bluetooth RS485	027H0493
ICAD 1200B	ICAD 1200B no display Bluetooth Ethernet	027H0494

NOTE:

Cables should be ordered separately. Please see ICAD B data sheet [Motor actuator for ICM/ICM-TS motorized valves and CVE pilot valve.](#)

Accessories code numbers

ICV PM flanged valve housings



ICV PM flanged valve housings

ICV PM flanged valve housings can replace the PM valves on already installed refrigeration systems.

Pressure range

The ICV PM valve housing is designed for a max. working pressure of 28 bar g / 406 psig and therefore a suitable replacement for PM valves in the service market. They also offer the same drop-in dimensions as the PM valves.

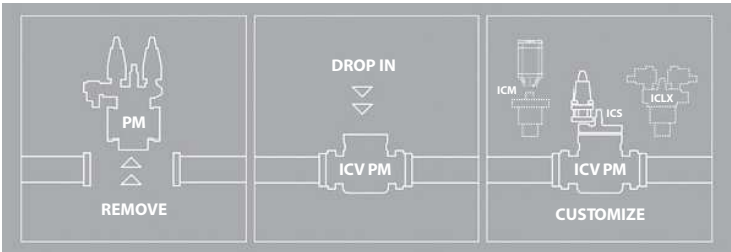
Description	Code no.
ICV 25 PM Valve housing	027H2119
ICV 32 PM Valve housing	027H3129
ICV 40 PM Valve housing	027H4128
ICV 50 PM Valve housing	027H5127
ICV 65 PM Valve housing	027H6128

Note:

027H2119, 027H3129, 027H4128 Includes ICV PM valve housing, flange gaskets and flange bolts.

027H5127, 027H6128 Includes ICV PM valve housing, flange gaskets, flange bolts and flange nuts.

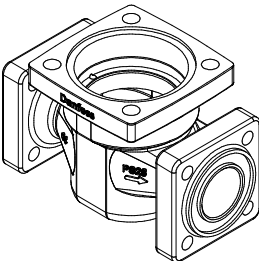
Figure: ICV PM flanged valve housings assembly



NOTE:

Function modules and top covers must be ordered separately (see the section [Ordering](#)).

ICV (H)A4A flanged valve housings



ICV (H)A4A flanged valve housings

ICV (H)A4A flanged valve housings can replace the (H)A4A valves on already installed refrigeration systems.

The ICV (H)A4A flanged valve housing provides an upgrade of the old motor valve types HMMR and HMMV to ICM motorized valve as a drop-in solution.

Pressure range

The ICV (H)A4A valve housing is designed for a max. working pressure of 28 bar g / 406 psig and therefore a suitable replacement for (H)A4A valves in the service market. They also offer the same drop-in dimensions as the (H)A4A valves.

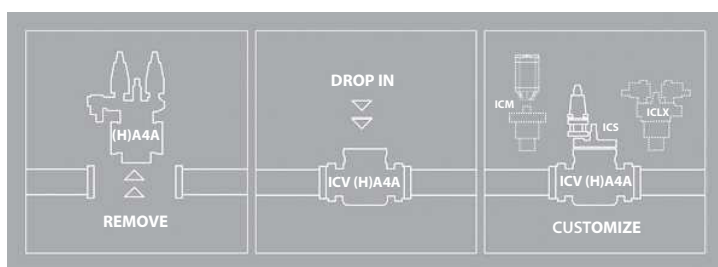
Description	Code no.
ICV 25 (H)A4A Valve housing	027H2304
ICV 32 A4A Valve housing	027H3130
ICV 32 HA4A Valve housing	027H3131
ICV 40 (H)A4A Valve housing	027H4129
ICV 50 (H)A4A Valve housing	027H5128
ICV 65 (H)A4A Valve housing	027H6129

Note:

027H2304, 027H3130, 027H3131, 027H4129 Includes ICV PM valve housing, flange gaskets and flange bolts.

027H5128, 027H6129 Includes ICV PM valve housing, flange gaskets, flange bolts and flange nuts.

Figure: ICV (H)A4A flanged valve housings assembly



NOTE:

Function modules and top covers must be ordered separately (see the section [Ordering](#)).

Repair kit for ICM 20

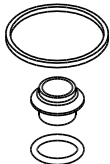


Table: Repair kit for ICM 20

Description	Code Number
Repair kit ICM 20-A / ICM 20-A-33 (Metal with plastic seat) ICM 20-B / ICM 20-C (Plastic seat)	027H1190

Inspection kit for ICM 25 – 32

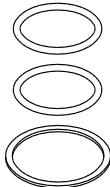
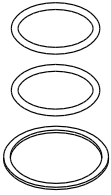
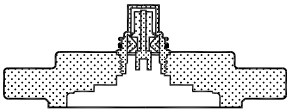


Table: Inspection kits for ICM 25-32

Description	Code Number
ICM 25 Inspection kit	027H2218
ICM 32 Inspection kit	027H3016

Inspection kit for ICM 40 – 50 – 65**Table: Inspection kits for ICM 40-50-65**

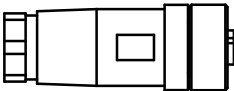
Description	Code Number
ICM 40 Inspection kit	027H4014
ICM 50 Inspection kit	027H5014
ICM 65 Inspection kit	027H6016

Top covers for ICM 100 – 125 – 150**Table: Accessories ICM 100–125–150**

Size	Code number
ICM 100	027H7133
ICM 125	027H7153
ICM 150	027H7173

NOTE:

Consist of: Top cover complete with magnet coupling and gasket

Connectors for ICAD

Connector type	Code Number
Two Female Connectors with screw terminals: <ul style="list-style-type: none"> connector for power connector for control signals 	027H0430

ICAD-UPS

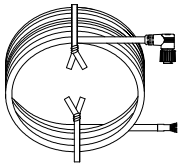
Description	Code Number
ICAD-UPS	027H0388

Multi-function tool



Description	Description	Code Number
ICM 20 – 32	Multi-function tool	027H0180
ICM 40 – 150	Multi-function tool	027H0181

Cable



NOTE:

Cables should be ordered separately.

Table: ICAD B cable set with 3x cables (power supply, control signal and data communication)

Length	Code no.
ICAD B Cable set 1,5m (3x cables)	027H0464
ICAD B Cable set 3m (3x cables)	027H0465
ICAD B Cable set 10m (3x cables)	027H0466
ICAD B Cable set 15m (3x cables)	027H0467

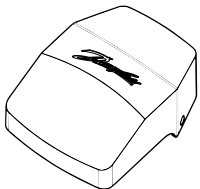
Table: ICAD A and ICAD B cable set with 2x cables (power supply and control signal)

Length	Code no.
ICAD A and ICAD B Cable set 1,5m (2x cables)	027H0426
ICAD A and ICAD B Cable set 3,0m (2x cables)	027H0438
ICAD A and ICAD B Cable set 10m (2x cables)	027H0427
ICAD A and ICAD B Cable set 15m (2x cables)	027H0435

Table: ICAD service kits

Type	Code no.
Service kit ICAD 600B (10 pcs of O-rings for magnetic coupling)	027H0428
Service kit ICAD 1200B (10 pcs of O-rings for magnetic coupling)	027H0429

ICAD Protection Cap



Type	Code no.
ICAD-B Protective cover	027H0468

NOTE:

Please observe, when used in CO₂, that the O-rings on the ICM module can swell (grow). At service it is recommend that new O-rings are installed before the ICM functions module again is installed in the ICV valve body.

Certificates, declarations and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

When you click on the link you will be directed to the latest version of the 'Declaration of Conformity'. Products developed and sold before this date of issue conform to the directives/standards in force at the time of their sale.

Approval type	Title	Issuer	Approval topic
Pressure Safety Certificate	LLC CDC EURO-TYSK UA.TR.089.1015.02-22	LLC CDC EURO TYSK - Ukraine	PED, Pressure
UA Declaration	Danfoss UA 2023-01-10 Valves PL01 PL40	Danfoss	PED, Pressure
Radio Equipment Certificate	ACMA CF17714_AU-Rev.-00	ACMA - Australian Communication and Media Authority	RCM
Export Control Declaration	Multifunction valves and safety devices	Danfoss	
Export Control Declaration	ICAD	Danfoss	
Manufacturer's Declaration	Danfoss MD 027R0723.AE	Danfoss	
Pressure Safety Certificate	TÜV 0045 202 9120 Z 00447 25 D 001(00)	TÜV NORD - Technischer ÜberwachungsVerein	PED, Pressure
Pressure Safety Certificate	TÜV 0045/202/9120/Z/00450/25/D/ 001(00)	TÜV NORD - Technischer ÜberwachungsVerein	PED, Pressure
Export Control Declaration	Pressure and temperature regulating valves	Danfoss	
Export Control Declaration	Motor operated valves	Danfoss	
EU Declaration	Danfoss EU-027R0722.AC	Danfoss	RED, EU RoHS, EMC
Manufacturer's Declaration	MD 080R5340. AB	Danfoss	
Manufacturer's Declaration	Information to the User (080R5338.AB , 080R5342.AB, 080R5340. AB)	Danfoss	
Pressure Safety Certificate	3) PED UA Sertificate Module B (UA.TR.131.B.2656-26)	Academtest LLC	Pressure
UA Declaration	3) UA Declaration Module B (UA.TR.131.B.2656-26) Module D (UA.TR.131.1045-26).pdf	Academtest LLC	Pressure

Electrical Safety Certificate	UL-US-2351025-0 / UL-CA-2344333-0	UL - Underwriters Laboratories inc.	UL-CSA
Statement of Compliance	IRF (PL40) products Vacuum evacuation	Danfoss	
EU Declaration	Danfoss EU 033F0685.BA	Danfoss	EMC, PED, Pressure
Manufacturer's Declaration	Danfoss MD 033F0691.AL	Danfoss	EU RoHS
EU Declaration	EU Doc PL40 Packaging	Danfoss	Packaging
Statement of Compliance	MD 050R5001.AA	Danfoss	

ICM

The ICV valve concept is designed to fulfil global refrigeration requirements. ICM is CE, UL and CRN approved.

For specific approval information, please contact Danfoss.

The ICM valves are approved in accordance with the European standard specified in the Pressure Equipment Directive and are CE marked. For further details / restrictions - see Installation guide.

Table: Conformity Approvals

ICM valves				
	Nominal bore	DN ≤ 25 (1 inch)	DN 32 – 65 (1 ¼ – 2 ½ inch)	DN 80 – 125 (3 – 5 inch)
	Classified for	Fluid group I		
	Category	Article 3, paragraph 3	II	III

ICAD



CE according to 89/336 EEC (EMC)

Emission: EN61000-6-3

Immunity: EN61000-6-2

REACH requirements

All Danfoss products fulfill the requirements in REACH. One of the obligations in REACH is to inform customers about presence of Candidate list substances if any, we hereby inform you about one substance on the candidate list: An O-ring used in ICAD 600A actuator contains 6,6'-di-tert-butyl-2,2'-metylenodi-p-krezol (CAS no: 119-47-1) in a concentration above 0.1% w/w.

Contact details

Online support

Danfoss offers a wide range of support along with our products, including digital information, software, mobile apps and expert guidance. See the possibilities below.



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