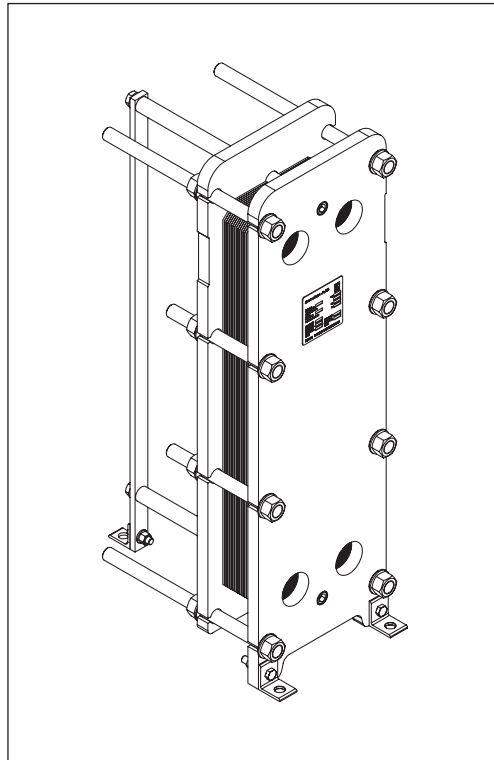


Data sheet

Gasketed Plate Heat Exchangers (DN 50 / 2") S7A / S14A / S20A

Description



SONDEX® gasketed plate heat exchangers are the ideal choice for a wide range of applications across numerous market segments.

We have the largest plate portfolio in the world, and we customize each heat exchanger to meet your exact requirements. Innovative technologies and smart design make our gasketed plate heat exchangers a stellar investment.

Benefits:

- Individually customized solution that perfectly matches your requirements and lowers your energy consumption.
- High performance and a low pressure drop eliminate unnecessary burdens on your system and optimize overall system performance.
- The design results in a compact solution with a small footprint, simple installation, and easy access for maintenance.

Common applications:

- HVAC industry
- Marine/offshore industry
- Dairy/food/beverage industry
- Sugar industry
- Biogas industry
- Pulp and paper industry
- Heavy industry
- Mining industry
- Petrochemical industry
- Chemical industry

Main data:

- Min. temperature $-10\text{ }^{\circ}\text{C}$
- Max. temperature $180\text{ }^{\circ}\text{C}$
- Max. working pressure 16 / 25 bar
- Water and different fluids, steam
- Connection size G 2A or DN 50

Approvals:

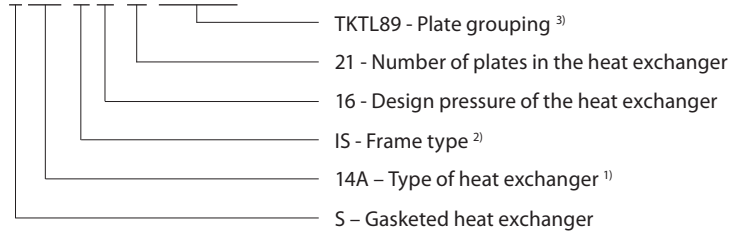
- Please contact your local Danfoss/SONDEX® sales representative for an overview of the available approvals in your region

Construction standard:

- EN13445 (PED 2014/68/EU)
- ASME sec VIII, Div. 1

Naming of units

S14A-IS16-21-TKTL89



¹⁾ Type of heat exchanger:

14 - ...
 Letter A shows type of the attachment of gasket to plate:
 e.g. 14 (without A) – SonderLock
 14A (with A) – Hang-on

²⁾ Description of frame types:

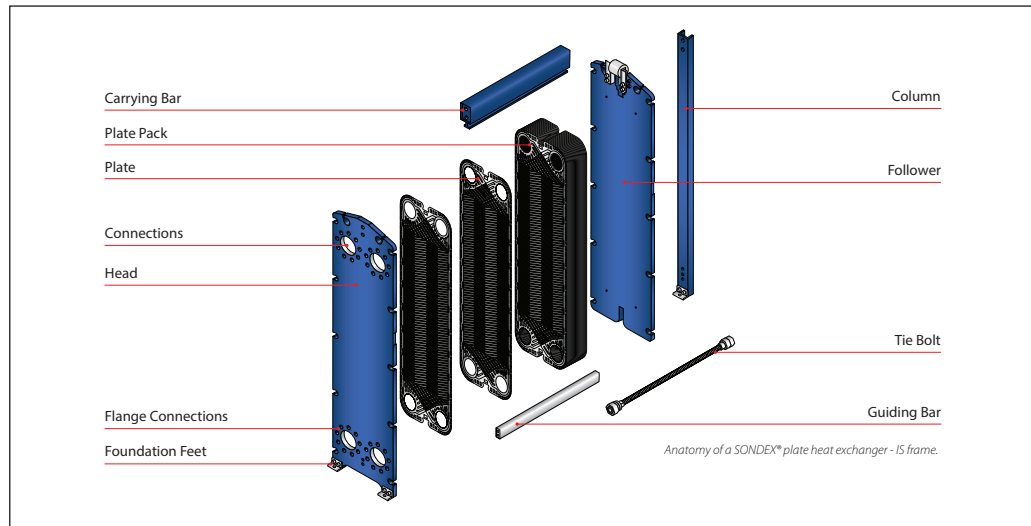
There are few different frame types which can be offered for different applications and duties.
 IS – with suspension roller,
 IG – without suspension roller,
 FS – food/sanitary with suspension roller,
 FG – food/sanitary,
 ST – simple design of frame with threaded connections

³⁾ Channel grouping:

In this example, the heat exchanger combines TK and TL channels. The share of TL channels equals 89% of the total number of channels.
 The number of channels is defined as “the number of plates - 1”.
 TK - short thermal length
 TM - medium thermal length
 TL - long thermal length

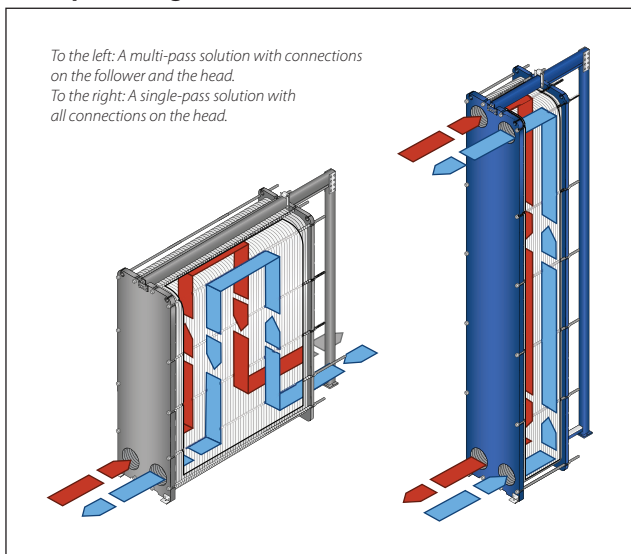
Heat exchanger design

Gasketed heat exchangers consist of



Heat exchanger design
(continued)

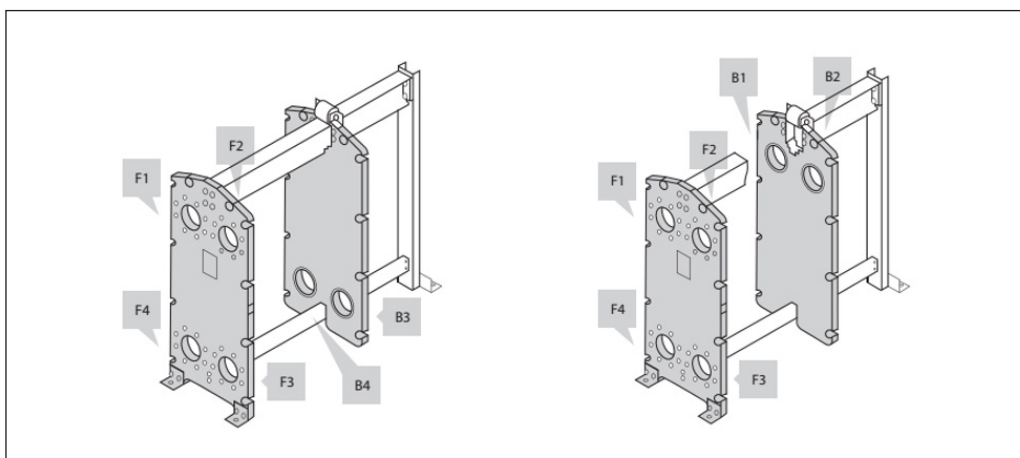
Multi-pass design



Connections

The heat exchanger may have connections on both front and back-end sides of the unit.

Connections on the front-end plate are marked with F and connections on the back-end plate are marked with B. The numbers 1, 2, 3 and 4 designate the position of the connection on the end-plate from the top-left port clockwise.



Technical data

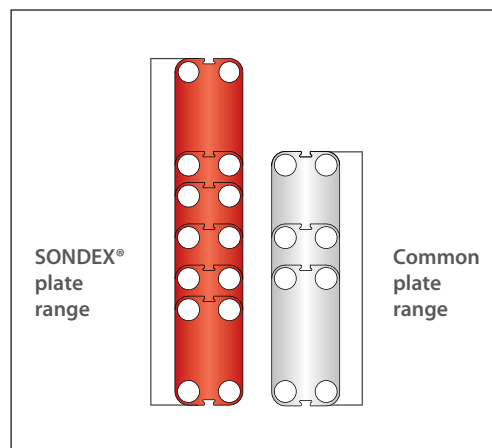
Heat exchanger **S7A / S14A / S20A**

| Type | | S7A | S14A | S20A |
|------------------------------|----------|--|------|------|
| Max. working pressure | PN (bar) | 16, 25 | | |
| Max. operating temperature | °C | Up to 180 | | |
| Min. operating temperature | | -10 | | |
| Flow medium | | Water and different fluids, steam | | |
| Volume / Channel | l | 0.2 | 0.35 | 0.44 |
| Connection size | | DN 50 / 2" | | |
| Connection type | | <ul style="list-style-type: none"> • DN 50/2" flanges. Carbon steel, rubberlined or clad with AISI 316L (other materials available on request) • 2" pipe or threaded pipe in stainless steel or titanium • 2"/DN 50 dairy pipe or union. According to all known standards | | |
| Plate material | | Stainless steel EN 1.4404 (AISI 316L), EN 1.4301 (AISI 304), SMO254, Hastelloy C276, titanium Gr.1 Other materials available on request | | |
| Plate thickness | mm | 0.4; 0.5; 0.6 2 x 0.4 SonderSafe plates ¹⁾ Other thicknesses available on request | | |
| Gasket material | | NBR, EPDM, FKM Other materials available on request | | |
| Gasket attachment type | | Hang-on | | |
| Liners in connections | | <ul style="list-style-type: none"> • Rubber NBR, EPDM, FKM • Stainless steel EN 1.4404 (AISI 316L), EN 1.4301 (AISI 304), SMO254, Hastelloy C276, titanium Gr.1 | | |
| Frame | | <ul style="list-style-type: none"> • Painted frame, color RAL 5010 (other colors available on request) • Stainless steel frame, designed for the sanitary applications (e.g. food and dairy industries) | | |
| Frame painting specification | | Painting available for corrosion categories C2L, C4M, C5M | | |

¹⁾ SonderSafe – double plate

Using the right plate for each individual duty is very important, as it greatly impacts the efficiency of the entire installation. It is important that the length of the plates and the type of pattern match the requirements of individual thermal duty. We have developed a wide plate portfolio to provide the perfect plate and connection size for any duty. No application is too small or too big for us - we provide the optimal technical solution every time.

Our extensive SONDEX® plate portfolio includes plates that lie outside the commonly manufactured plate sizes to cover all thermal duties optimally.



Accessories

Insulation

Recommended applications:

The insulation jacket for the plate heat exchanger is used in different applications with high temperatures and cooling systems.

| Application | Heating | Cooling |
|---------------------|--|--------------------------------|
| Material | 45 mm mineral wool Not flammable DIN EN 4102A2 | 40 mm PU-foam DIN 4102-1 B2 |
| Outer cap | 1 mm aluminium "Stucco" Embossed | |
| Internal insulation | 0.05 mm aluminium foil | |
| Panel fixation | Plastic rivets | |
| Temperature | 20 ... 200 °C | -50 ... -80 °C |
| U-value | 0.55 W/m ² K | 0.38 W/m ² K |
| Insulation class | 3 ¹⁾ | 4 ¹⁾ |
| Heat loss | 17.1 W/m ² | - |

Please note:

Inlet and outlet temperatures in the exchanger have been based on 90/50 – 30/70 °C.

¹⁾ *The loss of heating/cooling is stated per m² surface on the insulation jacket.*

The bottom of the heat exchanger is not insulated and this fact has been excluded.

A possible loss of ventilation, largely dependent on the mounting of the heat exchanger, has not been taken into account either.

Drip trays

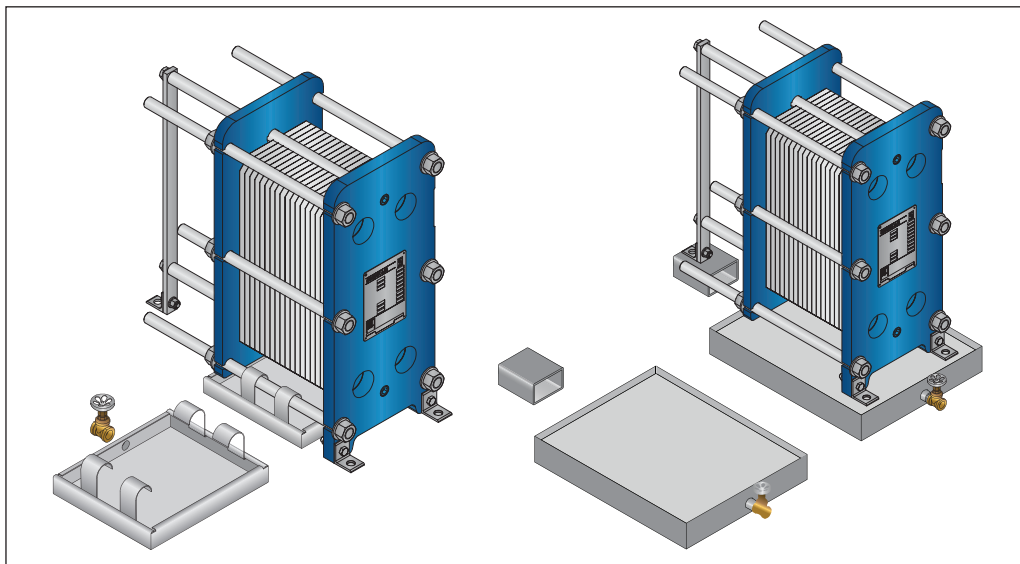
Recommended applications:

The drip tray is available in two types. A "fail-safe" solution which prevents water or liquid from leaking onto the floor, or when the heat exchanger is dismantled, or opened for inspection and maintenance. And an insulated drip tray for cooling applications, which collects condensate formed outside of the plate heat exchanger.

Materials

Drip tray consists of:

- 1 mm galvanized steel frame
- Hanging brackets in galvanized steel
- 60 mm Polyurethane insulation for cooling applications
- Draining valve.



Spare parts

Spare parts for gasketed heat exchangers, such as plates, gaskets, frame parts can be ordered for maintenance, repair, increasing heat exchanger capacity, etc.

Please contact your local Danfoss or SONDEX® sales representative to provide you with information on spare parts available for gasketed heat exchangers.

Selection and ordering

Please contact your local SONDEX® or Danfoss sales representative for the selection and / or ordering of the heat exchangers, spare parts and accessories.

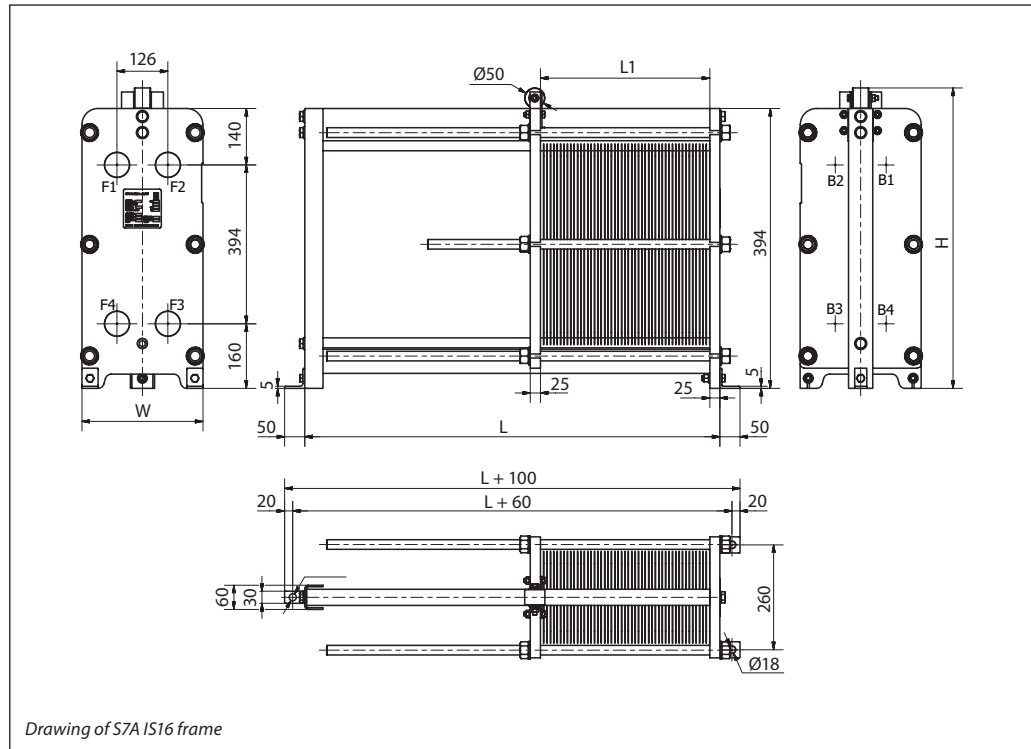
For contact information please visit <https://www.danfoss.com/en/contact-us>.

Dimensions

Non-sanitary applications

Any connection can be used for primary side in.
All the rest are made correspondingly.

S7A frames



Drawing of S7A IS16 frame

| Number of plates ¹⁾ | L (Frame length) (mm) | W (mm) | H (mm) | Weight max, empty ²⁾ (kg) | Connection type |
|--------------------------------|--------------------------|-----------------|-----------------|---|---|
| S7A IS16 | | | | | |
| 7 - 39 ³⁾ | 429 | 300 (11.81") | 745 (29.33") | 111 | DN 50 flange or 2" threaded pipe BSP |
| 40 - 76 ³⁾ | 629 | | | 135 | |
| 77 - 150 ³⁾ | 1029 | | | 181 | |
| 151 - 206 ³⁾ | 1329 | | | 215 | |
| 207 - 243 ³⁾ | 1529 | | | 240 | |
| 244 - 336 ³⁾ | 2029 | | | 297 | |
| S7A IG16 | | | | | |
| 7 - 50 | 437 | 300 (11.81") | 694 (27.32") | 116 | 2" threaded pipe BSP |
| 51 - 69 | 537 | | | 127 | |
| 70 - 87 | 637 | | | 139 | |
| S7A ST16 | | | | | |
| 7 - 40 | 437 | 283 (11.14") | 596 (23.46") | 93 | 2" NPT ISO7-R2/BSP |
| 41 - 59 | 537 | | | 103 | |
| 60 - 77 | 637 | | | 113 | |

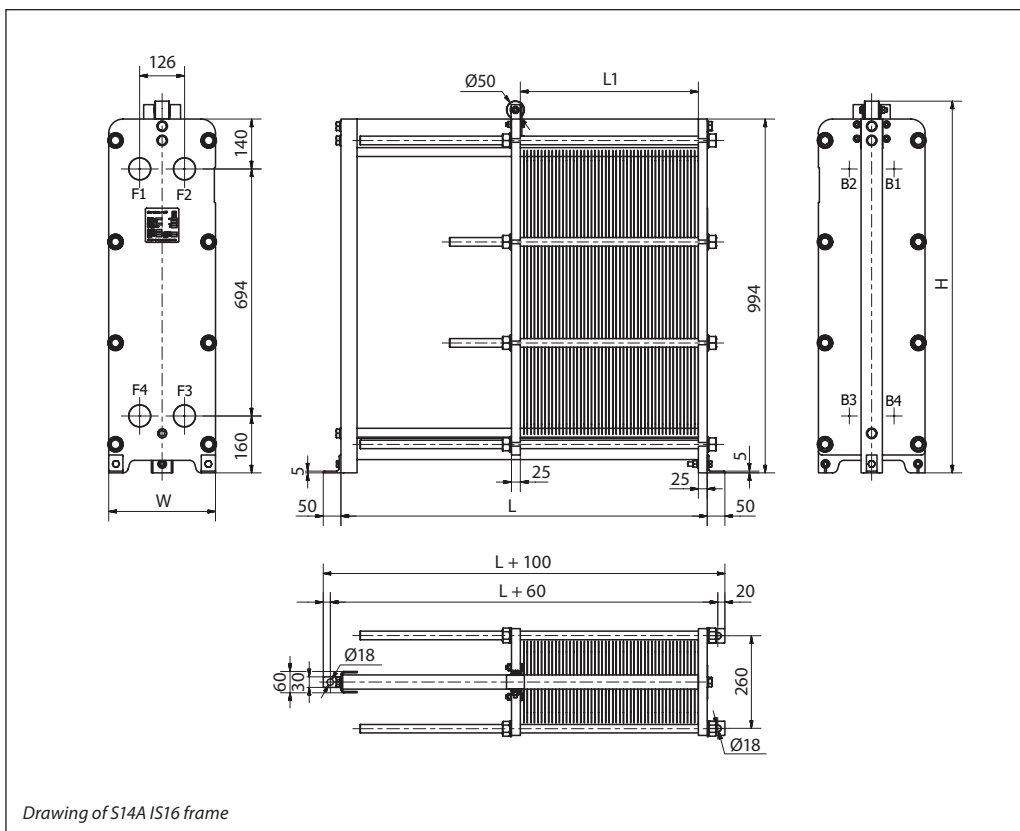
¹⁾ the indicated maximum number of plates is based on the minimum plate thickness allowable for the PN level of the unit;

²⁾ the maximum weight of the empty unit with the maximum allowable number of plates;

³⁾ maximum number of plates is indicated for the unit without intermediate frame. Adding intermediate frame reduces maximum allowable number of plates in the unit.

Dimensions (continued)
Non-sanitary applications

S14A frames



| Number of plates ¹⁾ | L (Frame length) (mm) | W (mm) | H (mm) | Weight max, empty ²⁾ (kg) | Connection type |
|--------------------------------|--------------------------|-----------------|--------------------|---|--|
| S14A IS16 | | | | | |
| 7 - 39 ³⁾ | 429 | 300 (11.81") | 1044.6 (41.13") | 170 | DN 50 flange / 2" threaded pipe BSP |
| 40 - 76 ³⁾ | 629 | | | 205 | |
| 77 - 150 ³⁾ | 1029 | | | 277 | |
| 151 - 206 ³⁾ | 1329 | | | 331 | |
| 207 - 243 ³⁾ | 1529 | | | 366 | |
| 244 - 336 ³⁾ | 2029 | | | 455 | |
| 337 - 428 ³⁾ | 2529 | | | 545 | |
| 429 - 521 ³⁾ | 3029 | | | 633 | |
| S14A IS25 | | | | | |
| 7 - 35 ³⁾ | 444 | 300 (11.81") | 1044.6 (41.13") | 178 | DN 50 flange / 2" threaded pipe BSP |
| 36 - 71 ³⁾ | 644 | | | 223 | |
| 72 - 142 ³⁾ | 1044 | | | 314 | |
| 143 - 196 ³⁾ | 1344 | | | 383 | |
| 197 - 232 ³⁾ | 1544 | | | 428 | |
| 233 - 321 ³⁾ | 2044 | | | 542 | |
| 322 - 410 ³⁾ | 2544 | | | 655 | |
| 411 - 500 ³⁾ | 3044 | | | 769 | |
| S14A IG16 | | | | | |
| 7 - 50 | 437 | 300 (11.81") | 994 (39.13") | 170 | 2" NPT ISO7-R2/BSP |
| 51 - 69 | 537 | | | 187 | |
| 70 - 87 | 637 | | | 204 | |
| S14A ST16 | | | | | |
| 7 - 40 | 437 | 283 (11.14") | 896 (35.28") | 144 | 2" NPT ISO7-R2/BSP |
| 41 - 59 | 537 | | | 159 | |
| 60 - 77 | 637 | | | 175 | |

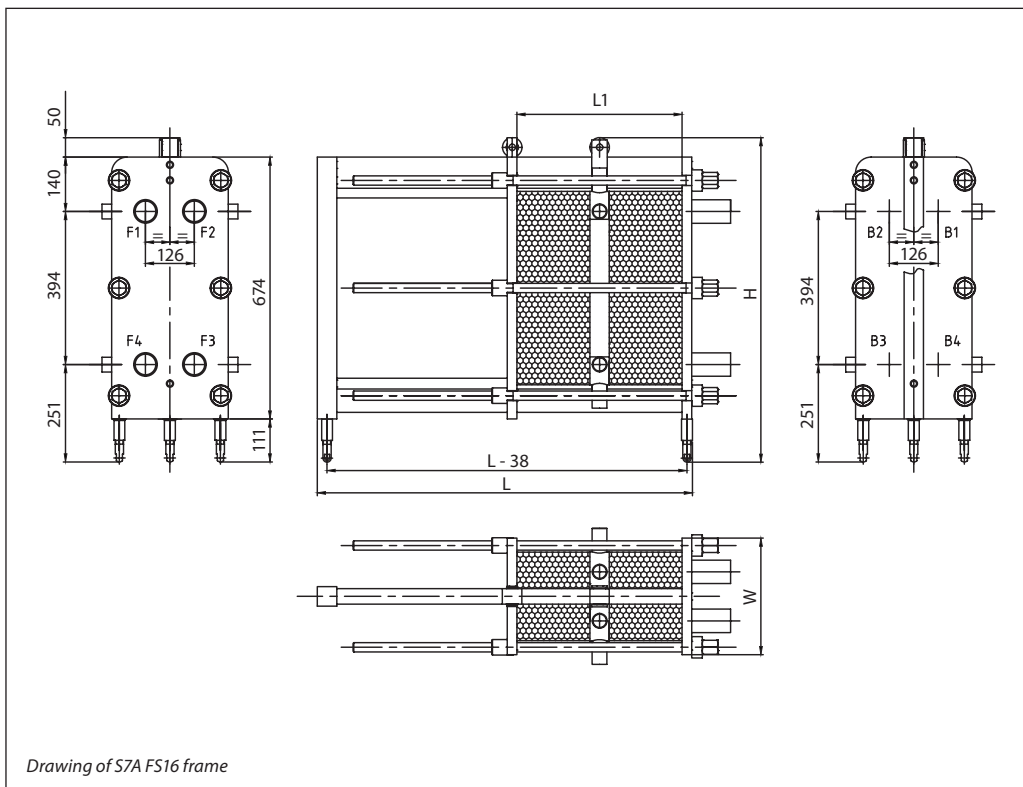
¹⁾ the indicated maximum number of plates is based on the minimum plate thickness allowable for the PN level of the unit;

²⁾ the maximum weight of the empty unit with the maximum allowable number of plates;

³⁾ maximum number of plates is indicated for the unit without intermediate frame. Adding intermediate frame reduces maximum allowable number of plates in the unit.

Dimensions (continued)
Sanitary applications

S7A frames



| Number of plates ¹⁾ | L (frame length) (mm) | W (mm) | H (mm) | Weight max, empty ²⁾ (kg) | Connection type |
|--------------------------------|--------------------------|-----------------|---------------------------------|---|--|
| S7A FS16 | | | | | |
| 7 – 50 ³⁾ | 455 | 300 (11.81") | 835 (32.87") | 122 | DN50 dairy union DIN / 2" dairy union |
| 51 – 87 ³⁾ | 655 | | | 146 | |
| 88 – 162 ³⁾ | 1055 | | | 196 | |
| 163 – 217 ³⁾ | 1355 | | | 232 | |
| 218 – 254 ³⁾ | 1555 | | | 257 | |
| 255 – 347 ³⁾ | 2055 | | | 317 | |
| S7A FG16 | | | | | |
| 7 – 50 | 455 | 300 (11.81") | 729.5 ⁴⁾ (28.72") | 102 | DN50 dairy union DIN / 2" dairy union |
| 51 – 69 | 555 | | | 112 | |
| 70 – 87 | 655 | | | 122 | |

¹⁾ the indicated maximum number of plates is based on the minimum plate thickness allowable for the PN level of the unit;

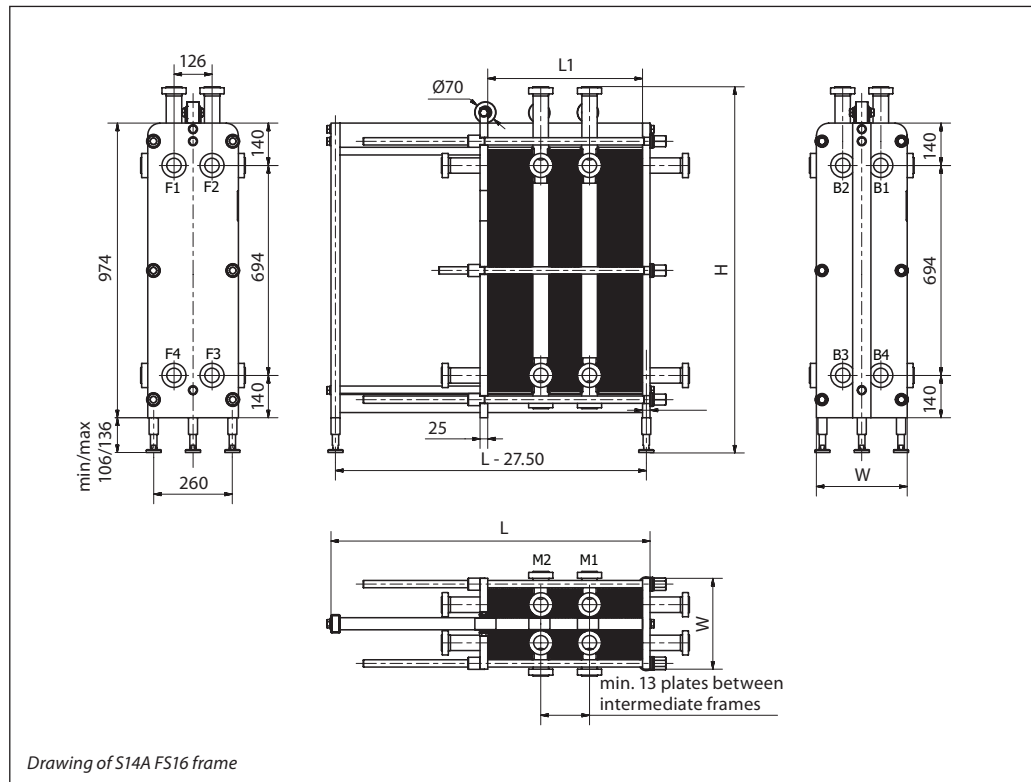
²⁾ the maximum weight of the empty unit with the maximum allowable number of plates;

³⁾ the indicated maximum number of plates is for units without intermediate frames. Adding an intermediate frame reduces the maximum allowable number of plates in the unit;

⁴⁾ The height of the heat exchanger can be modified with special adjustable feet.

Dimensions (continued)
Sanitary applications

S14A frames



Drawing of S14A FS16 frame

| Number of plates ¹⁾ | L (frame length) (mm) | W (mm) | H (mm) | Weight max, empty ²⁾ (kg) | Connection type |
|--------------------------------|--------------------------|-----------------|--|---|--|
| S14A FS16 | | | | | |
| 7 – 50 ³⁾ | 455 | 300 (11.81") | 1170 – 1200 ⁴⁾ (46.06"-47.24") | 185 | DN50 dairy union DIN / 2" dairy union |
| 51 – 87 ³⁾ | 655 | | | 229 | |
| 88 – 162 ³⁾ | 1055 | | | 320 | |
| 162 – 217 ³⁾ | 1355 | | | 385 | |
| 218 – 254 ³⁾ | 1555 | | | 429 | |
| 254 – 347 ³⁾ | 2055 | | | 541 | |
| S14A FG16 | | | | | |
| 7 – 50 | 455 | 300 (11.81") | 1025 – 1055 ⁴⁾ (40.35"-41.54") | 185 | DN50 dairy union DIN / 2" dairy union |
| 51 – 69 | 555 | | | 208 | |
| 70 – 87 | 655 | | | 230 | |

¹⁾ the indicated maximum number of plates is based on the minimum plate thickness allowable for the PN level of the unit;

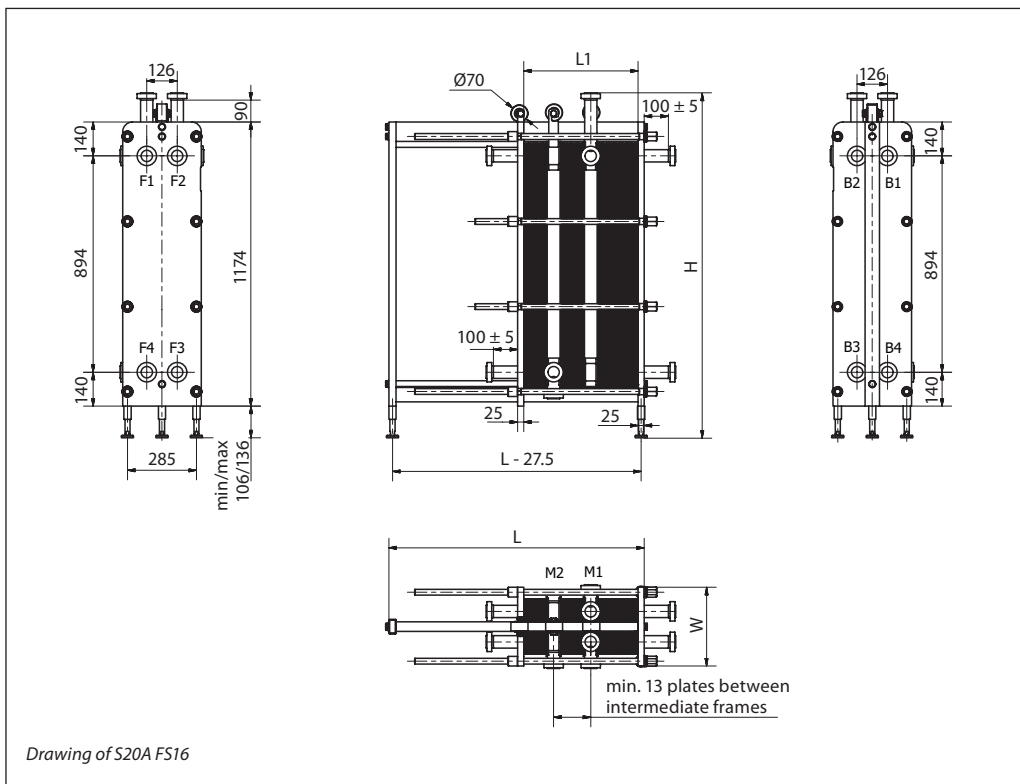
²⁾ the maximum weight of the empty unit with the maximum allowable number of plates;

³⁾ the indicated maximum number of plates is for units without intermediate frames. Adding an intermediate frame reduces the maximum allowable number of plates in the unit,

⁴⁾ the height of the heat exchanger can be modified with special adjustable feet.

Dimensions (continued)
Sanitary applications

S20A frames



| Number of plates ¹⁾ | L (frame length) (mm) | W (mm) | H (mm) | Weight max, empty ²⁾ (kg) | Connection type |
|--------------------------------|--------------------------|-----------------|--|---|--|
| S20A FS16 | | | | | |
| 7 – 50 ³⁾ | 455 | 325 (12.80") | 1370 – 1400 ⁴⁾ (53.94"-55.12") | 208 | DN50 dairy union DIN / 2" dairy union |
| 51 – 87 ³⁾ | 655 | | | 250 | |
| 88 – 162 ³⁾ | 1055 | | | 334 | |
| 163 – 217 ³⁾ | 1355 | | | 396 | |
| 218 – 254 ³⁾ | 1555 | | | 438 | |
| 255 – 347 ³⁾ | 2055 | | | 542 | |
| S20A FG16 | | | | | |
| 7 – 50 | 455 | 300 (11.81") | 1225 – 1255 ⁴⁾ (48.23"-49.41") | 195 | DN50 dairy union DIN / 2" dairy union |
| 51 – 69 | 555 | | | 215 | |
| 70 – 87 | 655 | | | 234 | |

¹⁾ the indicated maximum number of plates is based on the minimum plate thickness allowable for the PN level of the unit.
²⁾ the maximum weight of the empty unit with the maximum allowable number of plates;
³⁾ the indicated maximum number of plates is for units without intermediate frames. Adding an intermediate frame reduces the maximum allowable number of plates in the unit;
⁴⁾ the height of the heat exchanger can be modified with special adjustable feet.

Notes to drawings

Drawings are only for reference.
Please contact your local SONDEX® or Danfoss sales representative for detailed drawings.

