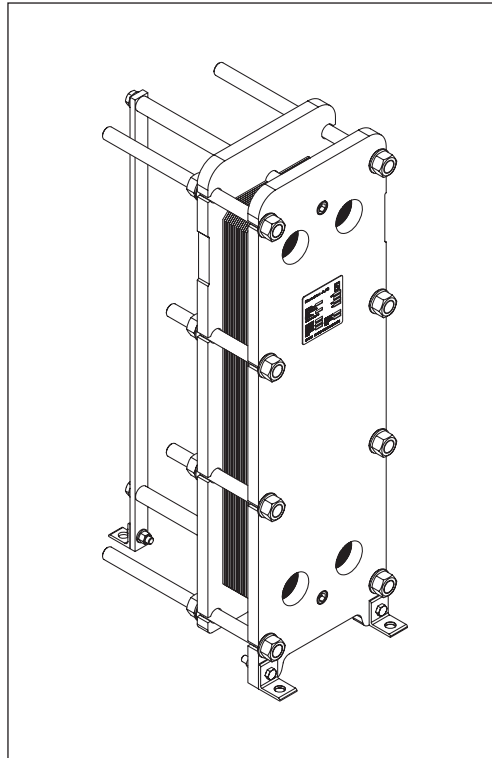


## Data sheet

# Gasketed Plate Heat Exchangers (DN 65 / 2.5") S9A / S19A / S31A / S44A

## 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  $-10^{\circ}\text{C}$
- Max. temperature  $180^{\circ}\text{C}$
- Max. working pressure 16 / 25 bar (10 bar on request)
- Water and different fluids, steam
- Connection size DN 65 or 2.5"

**Approvals:**

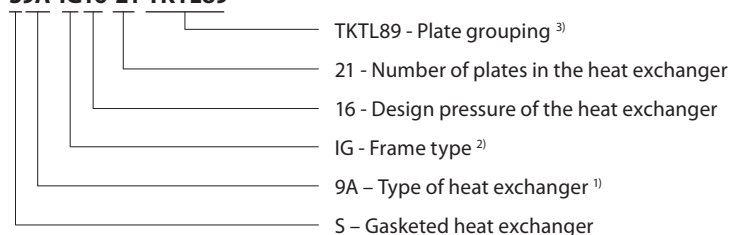
- Please contact your local Danfoss/SONDEX® sales representative for an overview of the available approvals in your region

**Construction standard:**

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

## Naming of units

### S9A-IG16-21-TKTL89



#### <sup>1)</sup> Type of heat exchanger:

9 - ...

Letter S9 shows type of the attachment of gasket to plate:

e.g. 9 (without A) – SonderLock

9A (with A) – Hang-on

#### <sup>2)</sup> 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

#### <sup>3)</sup> 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”.

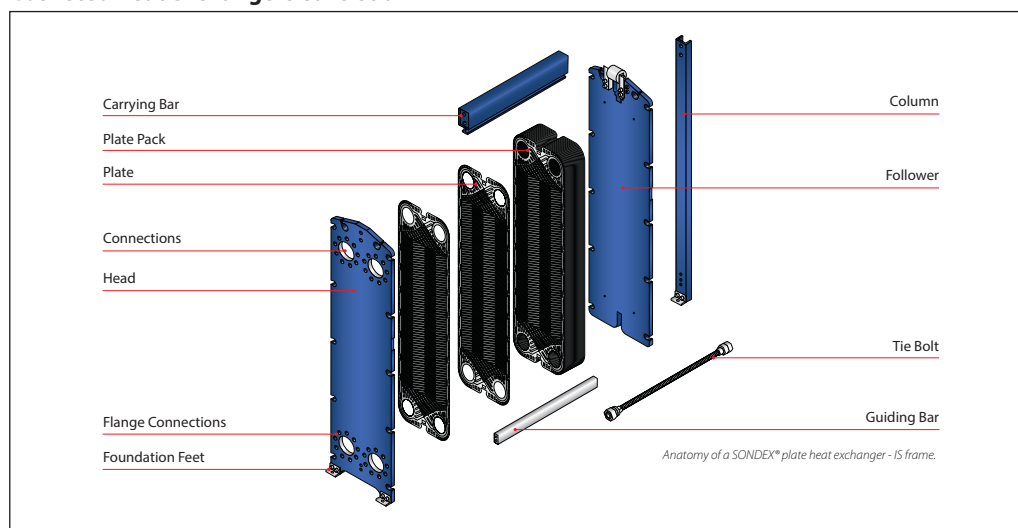
TK - short thermal length

TM - medium thermal length

TL - long thermal length

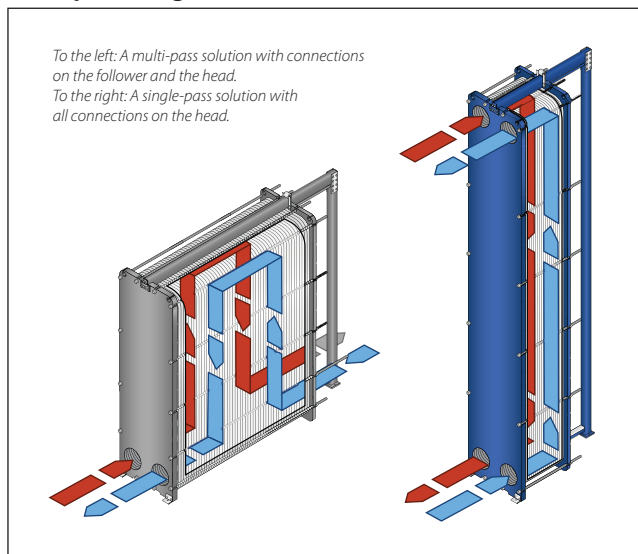
## Heat exchanger design

### Gasketed heat exchangers consist of



## Heat exchanger design (continued)

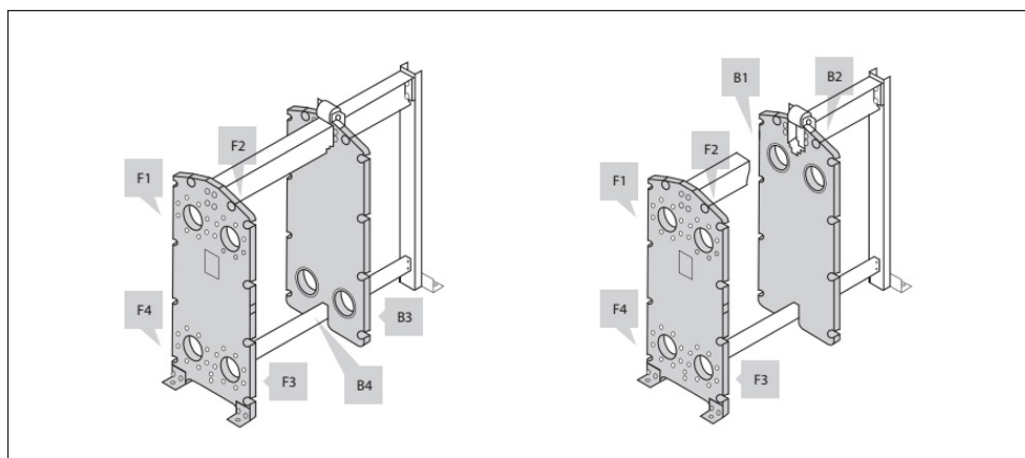
### Multi-pass design



### 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 **S9A / S19A / S31A / S44A**

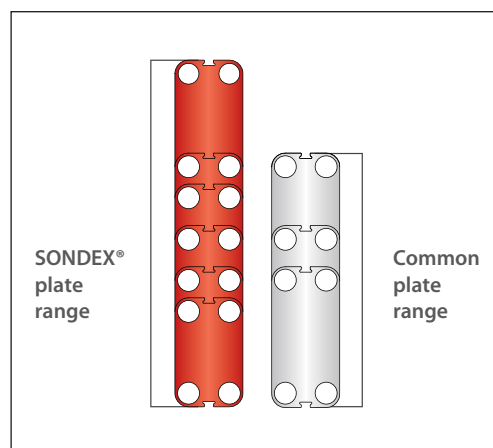
Type		S9A	S19A	S31A	S44A
Max. working pressure	PN (bar)	(10) <sup>1)</sup> , 16, 25			
Max. operating temperature	°C	Up to 180			
Min. operating temperature		-10			
Flow medium		Water and different fluids, steam			
Volume / channel	l	0.3	0.6	1.15	1.5
Connection size		DN 65 / 2.5"			
Connection type		• DN 65/2.5" flanges. Carbon steel, rubberlined or clad with AISI 316L (other materials available on request) • 2.5" pipe or threaded pipe in stainless steel or titanium			
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 <sup>2)</sup> Other thicknesses available on request			
Gasket material		NBR, EPDM, Other materials available on request			
Gasket attachment type		Hang-on			
Liners in connections		• Rubber NBR, EPDM, • Stainless steel EN 1.4404 (AISI 316L), EN 1.4301 (AISI 304), SMO254, Hastelloy C276, titanium Gr.1			
Frame		• 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			

<sup>1)</sup> Not available for all frame variations

<sup>2)</sup> 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 <sup>2</sup> K	0.38 W/m <sup>2</sup> K
Insulation class	3 <sup>1)</sup>	4 <sup>1)</sup>
Heat loss	17.1 W/m <sup>2</sup>	-

#### Please note:

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

<sup>1)</sup> The loss of heating/cooling is stated per m<sup>2</sup> 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

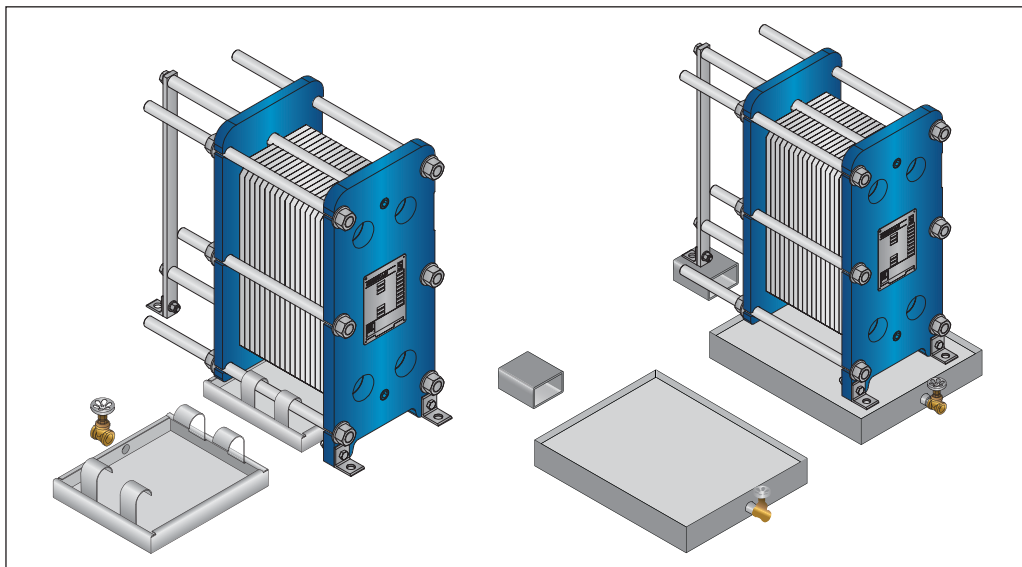
#### Recommended applications:

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.

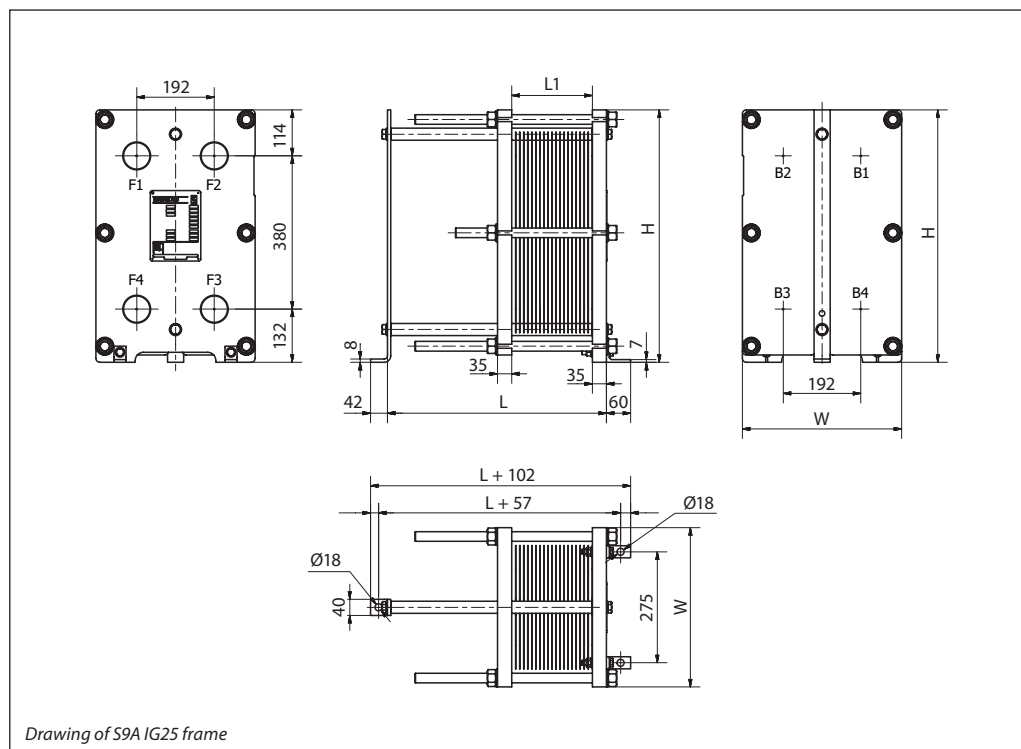
For contact information please visit <https://www.danfoss.com/en/contact-us>.

**Dimensions**

Non-sanitary applications

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

**S9A frames**



Drawing of S9A IG25 frame

Number of plates <sup>1)</sup>	L (frame length) (mm)	W (mm)	H (mm)	Weight max, empty <sup>2)</sup> (kg)	Connection type
S9A IG16					
7-59	438	395 (15.55")	626 (24.65")	157	DN 65 flange or 2.5" threaded pipe BSP
60-79	538			170	
80-100	638			184	
101-130	788			203	
131-181	1038			236	
S9A IG25					
7 - 56	443	395 (15.55")	626 (24.65")	170	DN 65 flange or 2.5" threaded pipe BSP
57 - 76	453			188	
77 - 96	643			207	
97 - 125	793			233	
124 - 174	1043			278	

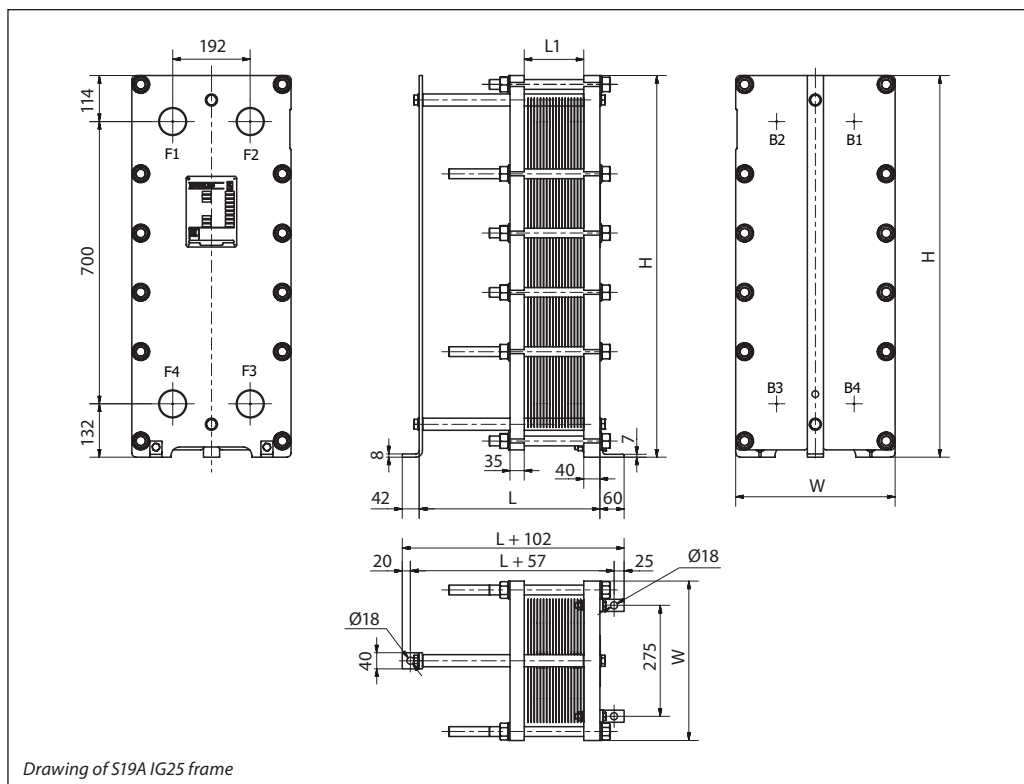
<sup>1)</sup> the indicated maximum number of plates is based on the minimum plate thickness allowable for the PN level of the unit;

<sup>2)</sup> the maximum weight of the empty unit with the maximum allowable number of plates;

<sup>3)</sup> PN class 10 bar is available on request.

**Dimensions** (continued)  
Non-sanitary applications

**S19A frames**



Number of plates <sup>1)</sup>	L (frame length) (mm)	W (mm)	H (mm)	Weight max, empty <sup>2)</sup> (kg)	Connection type
S19A IG16					
7-59	443	395 (15.55")	946 (37.24")	255	DN 65 flange or 2.5" threaded pipe BSP
60-79	643			277	
80-100	643			301	
101-130	793			333	
131-181	1043			389	
S19A IG25					
7 - 55	448	395 (15.55")	946 (37.24")	283	DN 65 flange or 2.5" threaded pipe BSP
56 - 75	548			313	
76 - 95	648			345	
96 - 124	798			389	
125 - 173	1048			465	

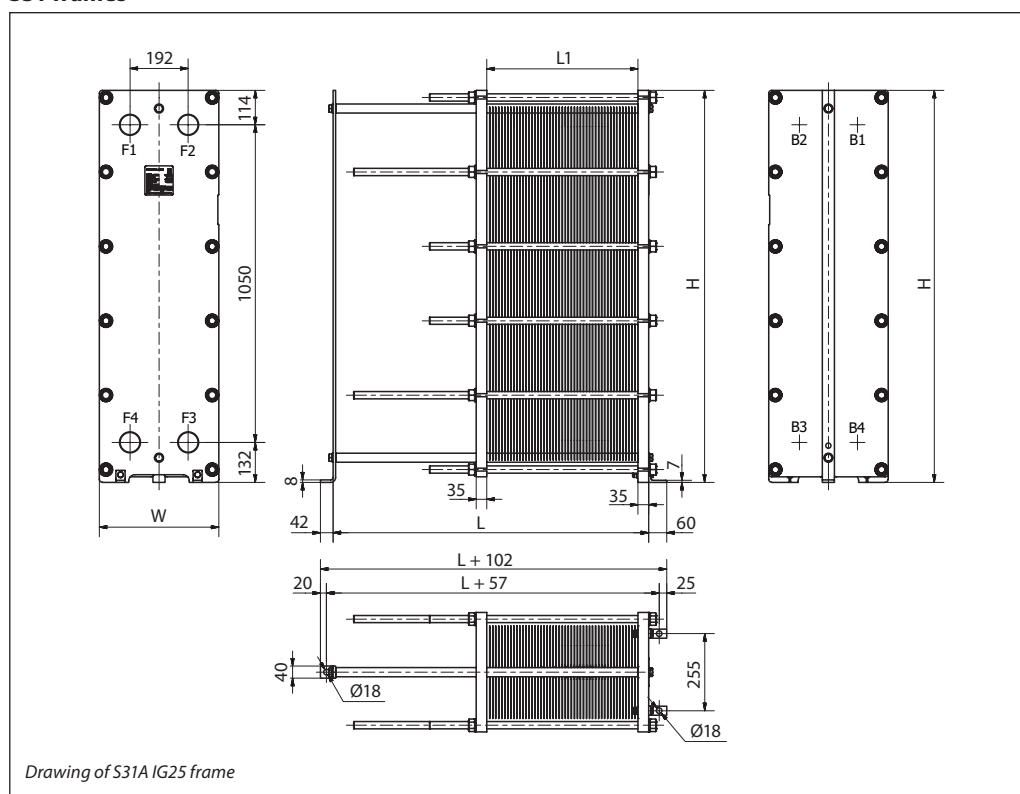
<sup>1)</sup> the indicated maximum number of plates is based on the minimum plate thickness allowable for the PN level of the unit;

<sup>2)</sup> the maximum weight of the empty unit with the maximum allowable number of plates;

<sup>3)</sup> PN class 10 bar is available on request.

**Dimensions (continued)**  
Non-sanitary applications

**S31 frames**



Drawing of S31A IG25 frame

Number of plates <sup>1)</sup>	L (frame length) (mm)	W (mm)	H (mm)	Weight max, empty <sup>2)</sup> (kg)	Connection type
S31A IG16					
7-59	438	395 (15.55")	1296 (51.02")	363	DN 65 flange or 2.5" threaded pipe BSP
60-79	538			394	
80-100	638			427	
101-130	788			474	
131-181	1038			554	
S31A IG25					
7 - 55	443	395 (15.55")	1296 (51.02")	390	DN 65 flange or 2.5" threaded pipe BSP
56- 75	543			433	
76 - 95	643			477	
96- 124	793			539	
125- 173	1043			645	

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

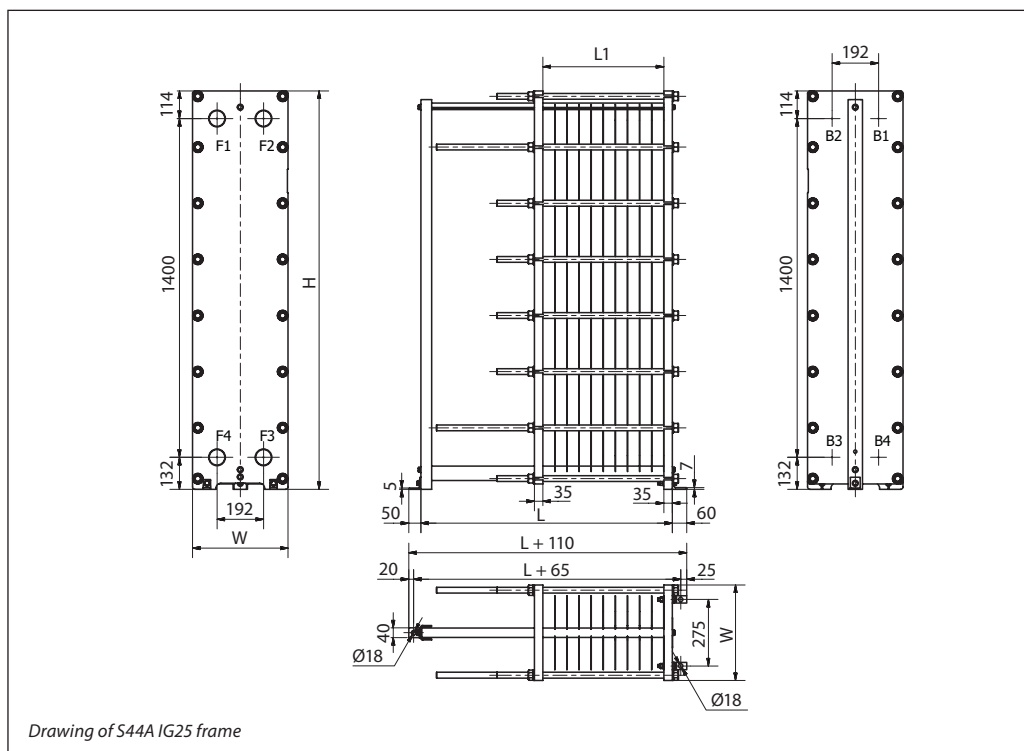
<sup>2)</sup> the maximum weight of the empty unit with the maximum allowable number of plates;

<sup>3)</sup> PN class 10 bar is available on request.



**Dimensions** (continued)  
Non-sanitary applications

**S44A frames**



Number of plates <sup>1)</sup>	L (Frame length) (mm)	W (mm)	H (mm)	Weight max, empty <sup>2)</sup> (kg)	Connection type
S44A IG16					
7-59	434	395 (15.55")	1646 (64.80")	310	DN 65 flange or 2.5" threaded pipe BSP
60-79	534			348	
80-100	634			388	
101-130	784			445	
131-181	1034			542	
S44A IG25					
7 - 55	439	395 (15.55")	1646 (64.80")	424	DN 65 flange or 2.5" threaded pipe BSP
56- 75	539			478	
76 - 95	639			531	
96- 124	789			609	
125- 173	1039			740	

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

<sup>2)</sup> the maximum weight of the empty unit with the maximum allowable number of plates;





