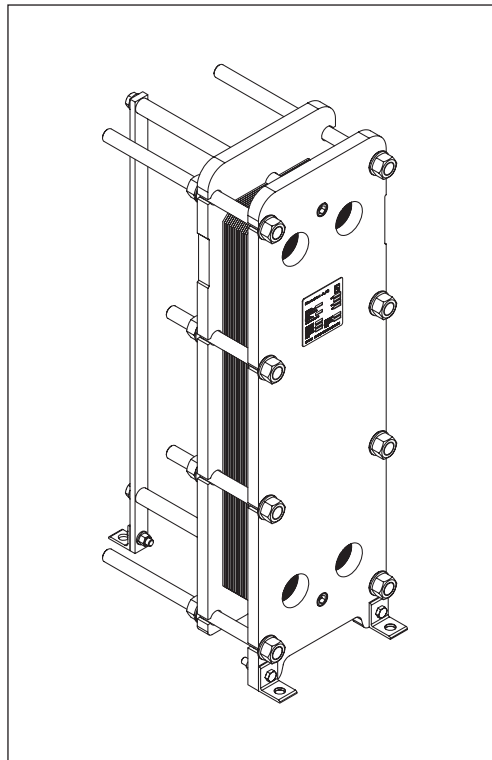


## Data sheet

# Gasketed Plate Heat Exchangers (DN 500/20")

## S140 / S201 / S300

## 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 10 bar (16 bar on request)
- Water and different fluids, steam
- Connection size DN 500 or 20"

**Approvals:**

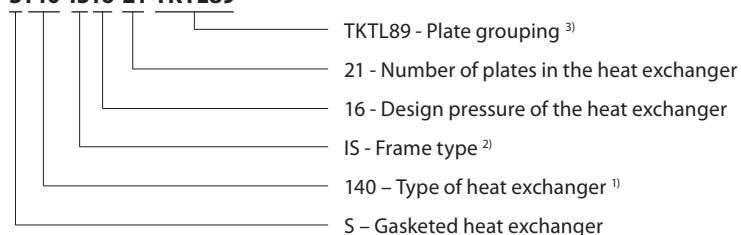
- Please contact your local Danfoss/SONDEX® sales representative for an overview of the available approvals in your region

**Construction standard:**

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

**Naming of units**

**S140-IS16-21-TKTL89**



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

140 - ...  
 Letter S140 shows type of the attachment of gasket to plate:  
 e.g. 140 (without A) – SonderLock  
 140A (with A) – Hang-on

**<sup>2)</sup> Description of frame types:**

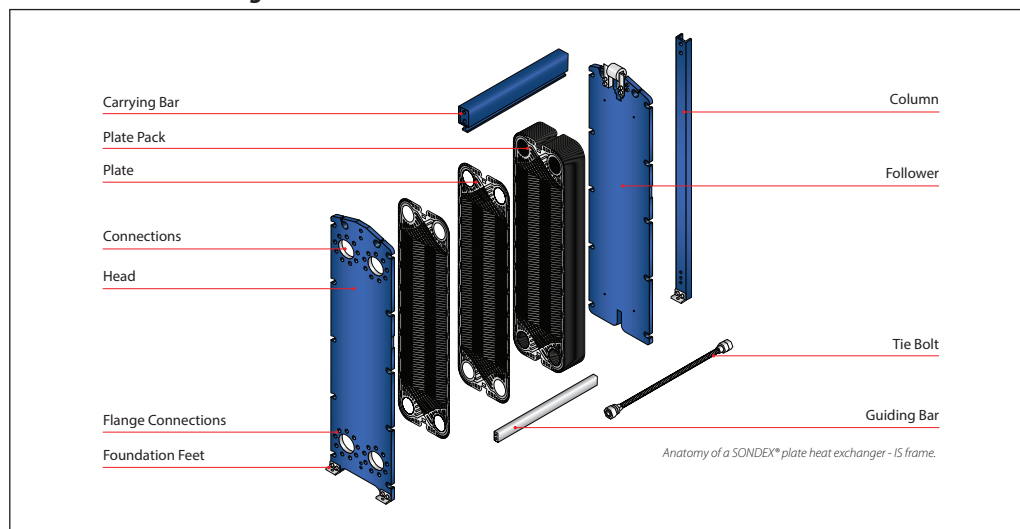
There are few different frame types which can be offered for different applications and duties.  
 IS – with suspension roller,  
 IG – without suspension roller,  
 FS – food/sanitary with suspension roller,  
 FG - food/sanitary,  
 ST – simple design of frame with threaded connections

**<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

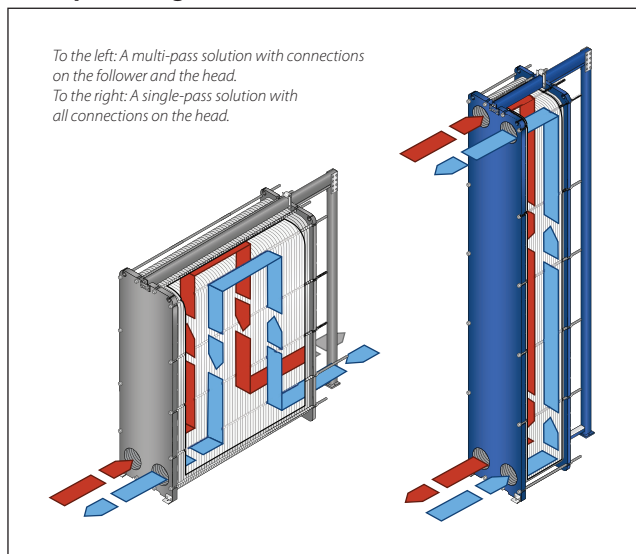
**Heat exchanger design**

**Gasketed heat exchangers consist of**



**Heat exchanger design**  
(continued)

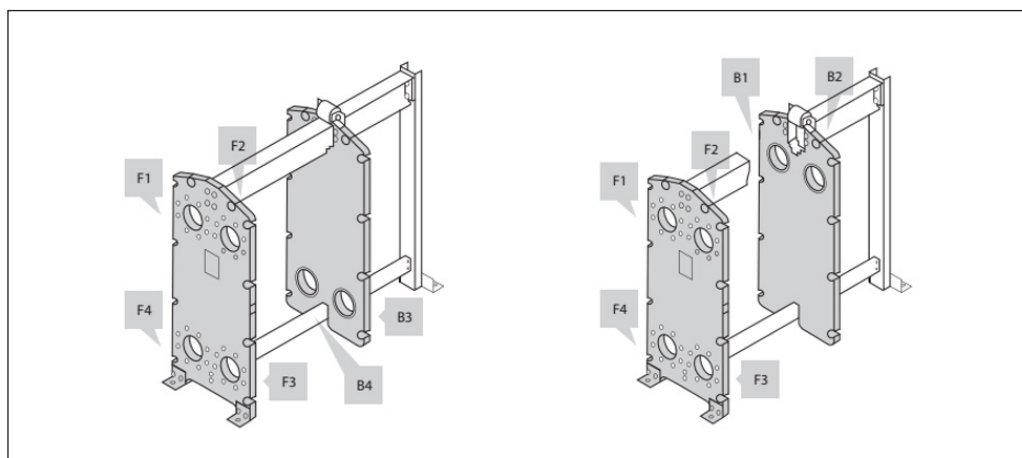
**Multi-pass design**



**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

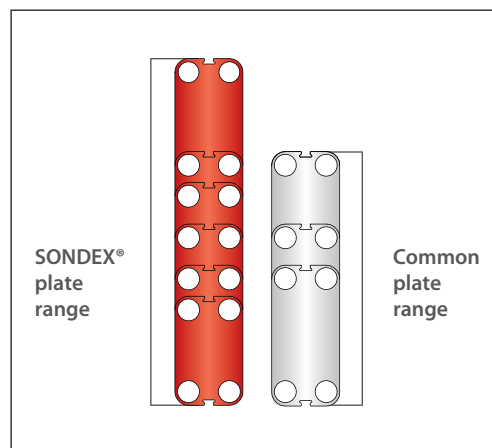
Heat exchanger **S140 / S201 / S300**

Type		S140	S201	S300
Max. working pressure	PN (bar)	10, (16) <sup>1)</sup>		
Max. operating temperature	°C	Up to 180		
Min. operating temperature		-10		
Flow medium		Water and different fluids, steam		
Volume / channel	l	5.9	8.8	8.8
Connection size		DN 500 / 20"		
Connection type		DN 500/20" flanges. Carbon steel, rubberlined or clad with AISI 316L (other materials available on request)		
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	0.5; 0.6; 0.7 <sup>1)</sup> Other thicknesses available on request		
Gasket material		NBR, EPDM, Other materials available on request		
Gasket attachment type		Sonder Lock		
Liners in connections		<ul style="list-style-type: none"> <li>• Rubber NBR, EPDM,</li> <li>• Stainless steel EN 1.4404 (AISI 316L), EN 1.4301 (AISI 304), SMO254, Hastelloy C276, titanium Gr.1</li> </ul>		
Frame		Painted frame, color RAL 5010 (other colors available on request)		
Frame painting specification		Painting available for corrosion categories C2L, C4M, C5M		

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

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**

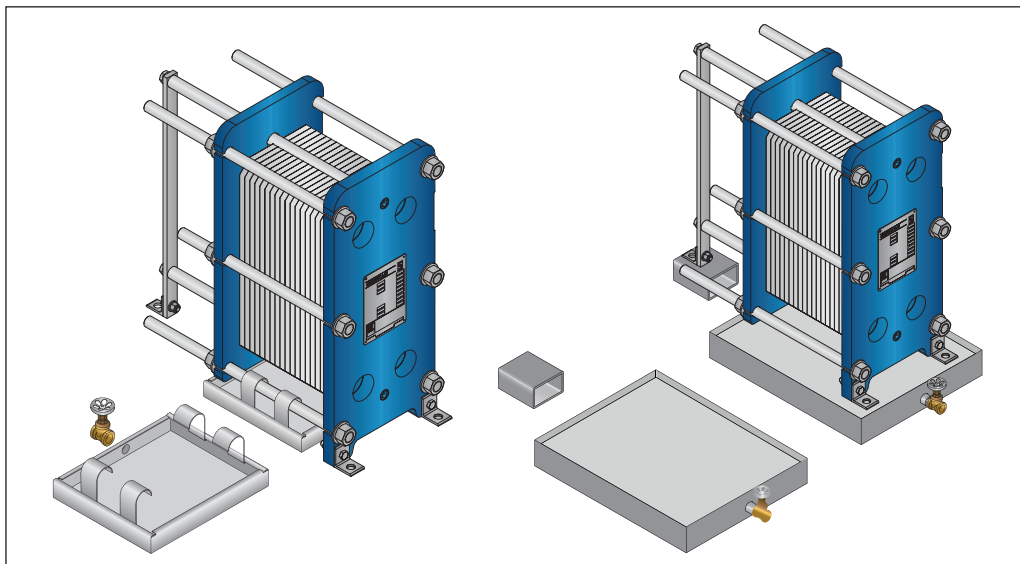
*Recommended applications:*

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**

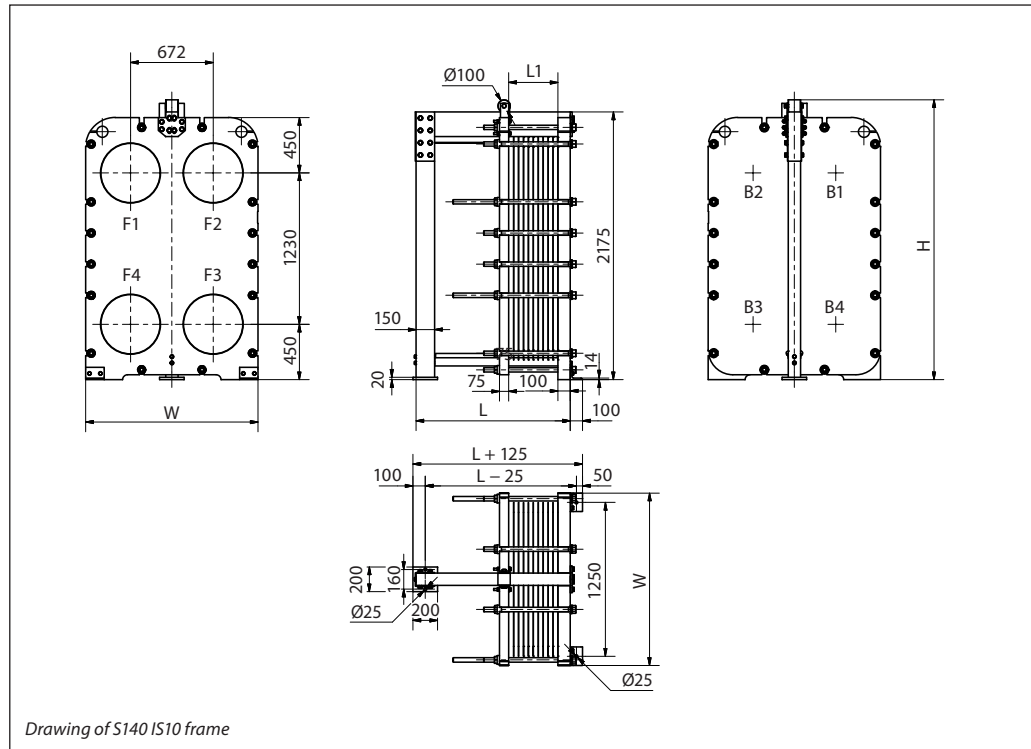
Please contact your local SONDEX® or Danfoss sales representative for the selection and / or ordering of the heat exchangers, spare parts, and accessories.

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.

**S140 frames**



Drawing of S140 IS10 frame

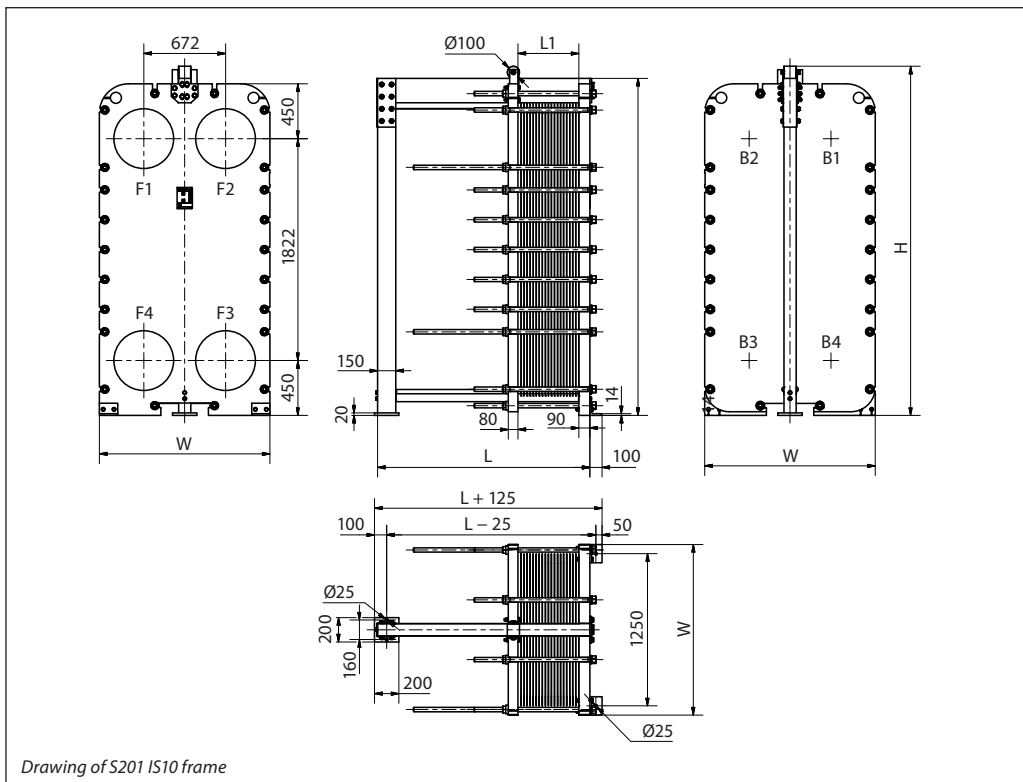
Number of plates <sup>1)</sup>	L (frame length) (mm)	W (mm)	H (mm)	Weight max, empty <sup>2)</sup> (kg)	Connection type
<b>S140 IS10</b>					
7 - 95	1250	1400 (55.12")	2274,5 (89.55")	7048	DN 500 flange or 20" flange
96 - 179	1750			7985	
180 - 262	2250			8912	
263 - 345	2750			9839	
346 - 429	3250			10776	
430 - 595	4250			12632	
596 - 762	5250			14495	
763 - 929	6250			16359	
			2524,5 (99.43")		

<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;

Dimensions (continued)  
Non-sanitary applications

S201 frames



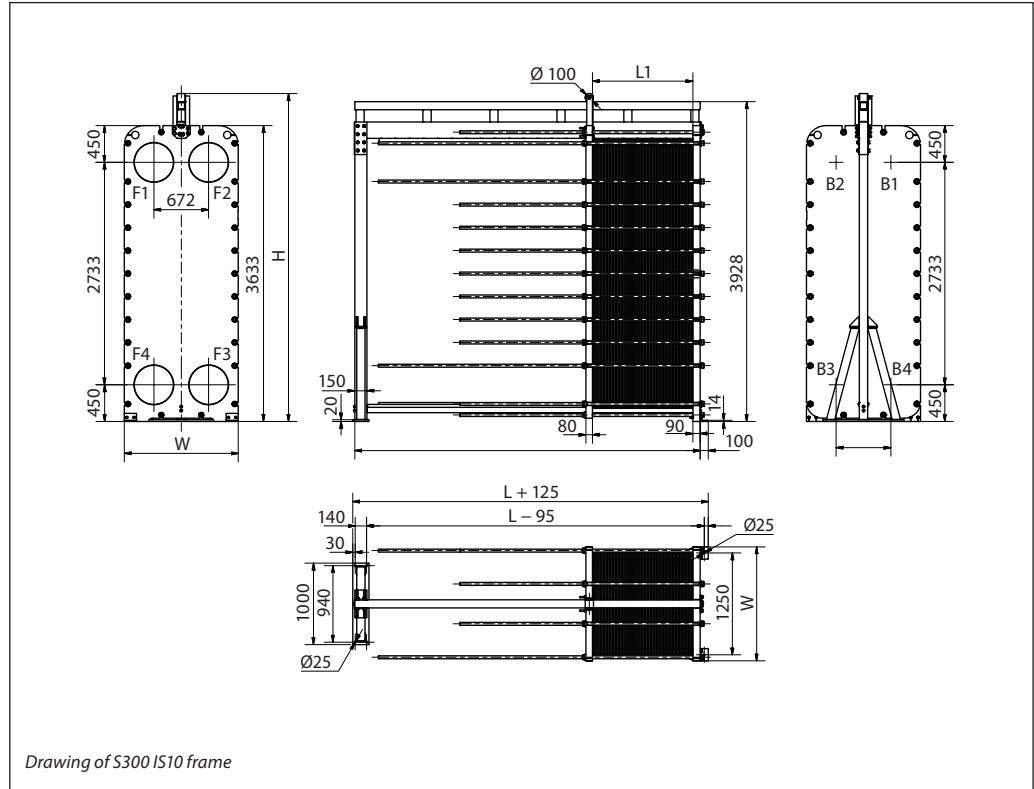
Drawing of S201 IS10 frame

Number of plates <sup>1)</sup>	L (frame length) (mm)	W (mm)	H (mm)	Weight max, empty <sup>2)</sup> (kg)	Connection type	
<b>S201 IS10</b>						
7 - 95	1240	1400 (55.12")	2866,5 (112.85")	5883	DN 500 flange or 20" flange	
96 - 178	1740			6996		
179 - 261	2240			8113		
262 - 345	2740			9341		
346 - 428	3240			10514		
429 - 595	4240			12775		
596 - 761	5240			3116,5 (122.70")		15258
762 - 928	6240			17602		
<b>S201 IS16</b>						
7 - 90	1260	1430 (56.30")	2866,5 (112.85")	7278	DN 500 flange or 20" flange	
91 - 173	1760			8460		
174 - 256	2260			9642		
257 - 340	2760			10837		
341 - 423	3260			12020		
424 - 590	4260			14398		
591 - 756	5260			3116,5 (122.70")		16763
757 - 923	6260			19140		

<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;

Dimensions (continued)  
Non-sanitary applications

S300 frames



Drawing of S300 IS10 frame

Number of plates <sup>1)</sup>	L (frame length) (mm)	W (mm)	H (mm)	Weight max, empty <sup>2)</sup> (kg)	Connection type	
<b>S300 IS10</b>						
7 - 95	1240	1400 (55.12")	2866,5 (112.85")	5883	DN 500 flange or 20" flange	
96 - 178	1740			6996		
179 - 261	2240			8113		
262 - 345	2740			9341		
346 - 428	3240			10514		
429 - 595	4240			12775		
596 - 761	5240			3116,5 (122.70")		15258
762 - 928	6240			17602		

<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 16 bar is available on request.