



ICS Series Float and Thermostatic Steam Trap

Carbon Steel with Integral Flanges for Horizontal Installation with Thermostatic Air Vent

For pressures to 32 bar ... Capacities to 27 215 kg/h

Description

Armstrong ICS Series F&T traps are for industrial service from 0 to 32 bar. The simple yet rugged construction of the ICS series carbon steel float and thermostatic trap is designed to assure long, trouble-free service. A full range in flanged connection sizes is offered: 1/2" through 2".

Materials

Body and Cap:

ASTM A352 Gr. LCB

Internals:

Stainless Steel

Valve and Seat:

Stainless Steel

Thermostatic Air Vent:

Wafer type stainless steel with hastelloy element

Connections

Flanged

ASME B16.5 Class 150 - 300

EN1092-1 PN40

Socketweld

NPT / BSPT

Options

Integral vacuum breaker. Add suffix VB to model number (PMA:10 barg@184 °C)

Condensate controller. Add suffix CC to model number.

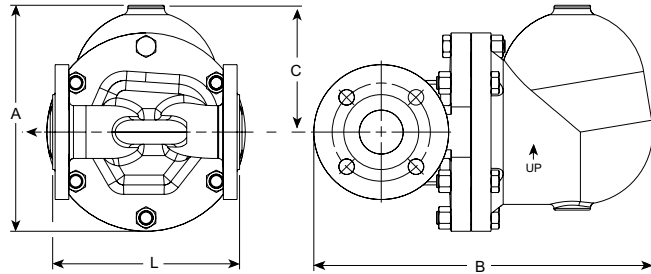


Table 144-1. Flow Direction

	mm	Flow Direction
Horizontal	15, 20, 25	Left-to-Right
Horizontal	40, 50	Right-to-Left
Vertical*	All	Down

* For vertical applications and dimensions, please consult factory.

Table 144-2. Face-to-Face Dimensions - NPT / BSPT / Socketweld

Connection Size	mm	mm	mm	mm	mm
	15	20	25	40	50
A	196	196	211	288	288
B	278	279	314	374	380
C	126	126	131	166	166
L	184	178	188	266	273
Weight, kg	10	10	13	35	35
Maximum Allowable Pressure (Vessel Design)	40 barg @ 343 °C				
Maximum Operating Pressure	32 barg				

Table 144-4. Face-to-Face Dimensions - PN40

Connection Size	mm	mm	mm	mm	mm
	15	20	25	40	50
A	196	196	211	288	288
B	304	309	347	413	420
C	126	126	131	166	166
L	150	150	160	230	230
Weight, kg	11	12	20	36	40
Maximum Allowable Pressure (Vessel Design) †	34,4 barg @ 250 °C				
Maximum Operating Pressure	32 barg				

Table 144-3. Face-to-Face Dimensions - ASME B 16.5 Class 150#

Connection Size	mm	mm	mm	mm	mm
	15	20	25	40	50
A	196	196	211	288	288
B	301	306	344	399	412
C	126	126	131	166	166
L	203	205	208	321	312
Weight, kg	11	11	15	38	38
Maximum Allowable Pressure (Vessel Design) †	13,6 barg @ 205 °C				
Maximum Operating Pressure	13,6 barg				

Table 144-5. Face-to-Face Dimensions - ASME B 16.5 Class 300#

Connection Size	mm	mm	mm	mm	mm
	15	20	25	40	50
A	196	196	211	288	288
B	304	314	352	414	419
C	126	126	131	166	166
L	209	209	212	327	321
Weight, kg	11	12	16	40	40
Maximum Allowable Pressure (Vessel Design) †	40,4 barg @ 260 °C				
Maximum Operating Pressure	32 barg				

Note: Shade indicates products that are CE Marked according to the PED (2014/68/UE). All other models comply with the Article 4.3 of the same directive.

† May be derated depending on flange rating and type.

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

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Table 145-1. Model ICS Series Capacity 1/2" and 3/4" - DN15, DN20

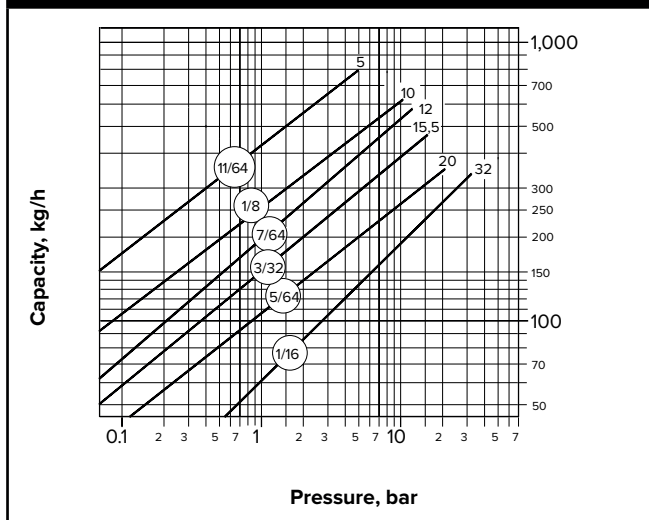


Table 145-2. Model ICS Series Capacity 1" - DN25

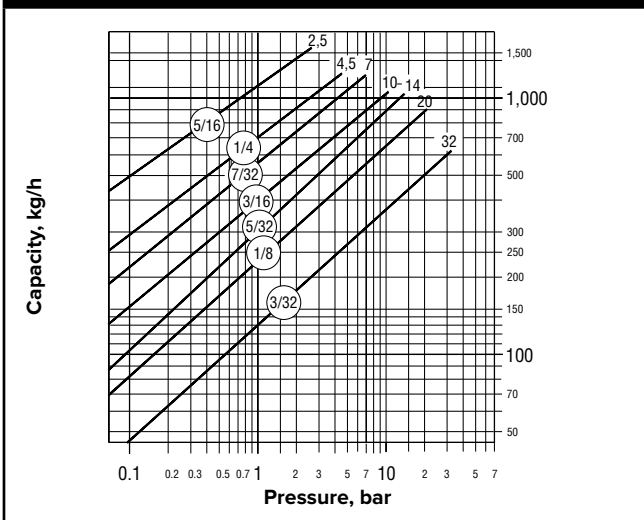


Table 145-3. Model ICS Series Capacity 1-1/2" - DN40

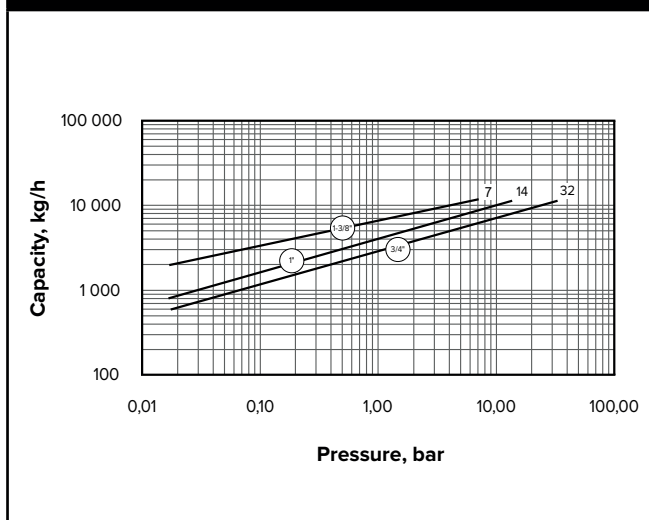
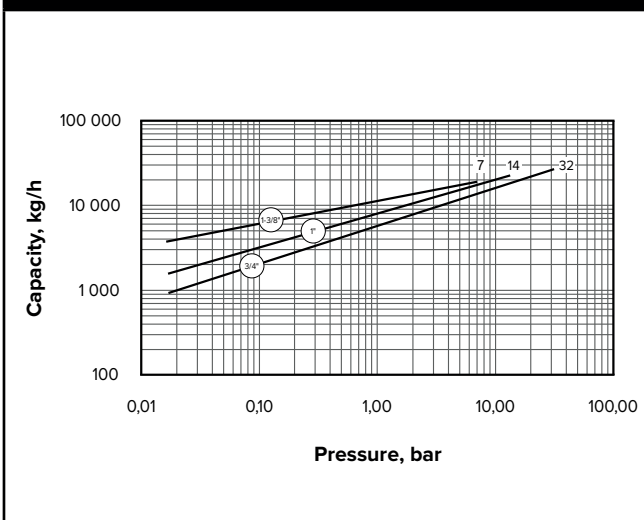


Table 145-4. Model ICS Series Capacity 2" - DN50



Note: PMA/TMA are limited according to the flange selected on the trap model.

Table 145-5. Models with flanges - Limitations

Flange Type	PMA/TMA	Orifice available (depending on connection size)	
		Connection	Available Orifice
ASME B16.5 Class 150	13,8 barg @ 200 °C	15 - 20	11/64 - 1/8 - 7/64
		25	5/16 - 1/4 - 7/32 - 3/16 - 5/32
		40 - 50	1-3/8 - 1
ASME B16.5 Class 300	40,8 barg @ 250 °C	15 - 20 - 25 - 40 - 50	all orifices available consult charts
PN40	35,1 barg @ 250 °C	15 - 20 - 25 - 40 - 50	all orifices available consult charts

How to Order

Model	Flow Direction	Connection Size	Connection Type	Pressure	Option
ICS F+T	R/L	DN50	PN40	1-3/8"	VB
ICS F+T	L/R = Left to Right or Vertical	1/2"/DN15 3/4"/DN20 1"/DN25	Flanged Connection or Socket-welded or NPT or BSPT	Consult Capacity Charts to specify orifice.	VB = Vacuum Breaker (limited to 10 bar)
	R/L = Right to Left or Vertical	1-1/2"/DN40 2"/DN50			

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.



ICS Series Float & Thermostatic Steam Traps

Carbon Steel for Vertical Installation, With Thermostatic Air Vent

For Pressures to 32 barg Capacities to 27 215 kg/hr

Description

Armstrong ICS Series F&T traps are designed for industrial service up to 32 barg. The simple yet rugged construction of the ICS series carbon steel float and thermostatic trap is designed to assure long, trouble-free service.

Materials

Body & Cap:	Carbon Steel ASTM A352 GR.LCB
Internals:	Stainless steel
Valve(s) and Seat(s):	Hardened Stainless Steel, 17-4PH
Thermostatic Air Vent:	Hastelloy Wafer
Bolting:	Low Alloy Steel, ASTM A193 GR.b7
Gasket:	Graphite

Connections

Flanged:	ASME B16.5 Class 150, Class 300 *
Screwed:	NPT / BSPT
Socket Welded	

Option

Integral Vacuum Breaker: Add suffix VB to model number (limited to 10.3 barg)

Liquid Drainer: Add suffix LD to model number

Flow Direction

Vertical: Top to Bottom

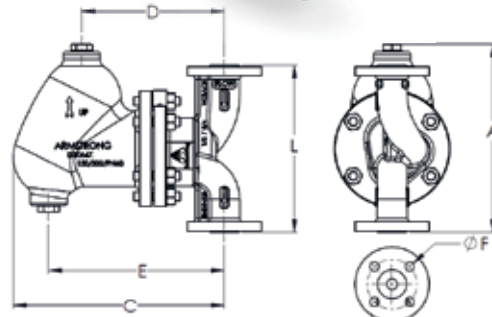


Table ST-146-1. Dimensions Table - Screwed and Socketweld (dimensions in mm)

Pipe Connection	1/2"	3/4"	1"	1-1/2"	2"
"A" Height	216	216	228	319	319
"C" Length	279	279	309	380	380
"D" Length Cap CL to Body CL (Vent)	173	173	193	238	238
"E" Length Cap CL to Body CL (Drain)	213	213	228	238	238
"L" Face-to-Face	178	178	188	306	305
Weight lb (kg)	10.4 kg	10.4 kg	14.1 kg	38.6 kg	38.6 kg
Maximum Allowable Pressure (Vessel Design)	40 barg @ 343°C				
Maximum Operating Pressure	32 barg				

Table ST-146-2. Dimensions Table - ASME B16.5 Class 150 (dimensions in mm)

Pipe Connections	1/2"	3/4"	1"	1-1/2"	2"
"A" Height	228	229	238	321	321
"C" Length	301	306	339	399	399
"D" Length Cap CL to Body CL (Vent)	173	173	193	238	238
"E" Length Cap CL to Body CL (Drain)	213	213	228	238	238
"F" Bolt Hole Size	1/2" - 13 UNC	1/2" - 13 UNC	16.0	1/2" - 13 UNC	19.1
Number of Flange Holes	4				
"L" Face-to-Face	203	205	208	309	309
Weight lb (kg)	11.7 kg	12.2 kg	16.3 kg	42.6 kg	42.6 kg
Maximum Allowable Pressure (Vessel Design)	13.6 barg @ 205°C				
Maximum Operating Pressure	14 barg				

Table ST-146-3. Dimensions Table - ASME B16.5 Class 300 (dimensions in mm)

Pipe Connections	1/2"	3/4"	1"	1-1/2"	2"
"A" Height	231	231	241	324	324
"C" Length	304	314	347	414	419
"D" Length Cap CL to Body CL (Vent)	173	173	193	238	238
"E" Length Cap CL to Body CL (Drain)	213	213	228	238	238
"F" Bolt Hole Size	1/2" - 13 UNC	19.1	19.1	22.2	19.1
Number of Flange Holes	4				8
"L" Face-to-Face	209	209	212	315	315
Weight lb (kg)	11.7 kg	12.2 kg	16.3 kg	42.6 kg	42.6 kg
Maximum Allowable Pressure (Vessel Design)	40 barg @ 260°C				
Maximum Operating Pressure	32 barg				

ICS Series Float & Thermostatic Steam Traps

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For Pressures to 32 barg Capacities to 27 215 kg/hr



Table ST-147-1. Model ICS Series Capacity 1/2" & 3/4"

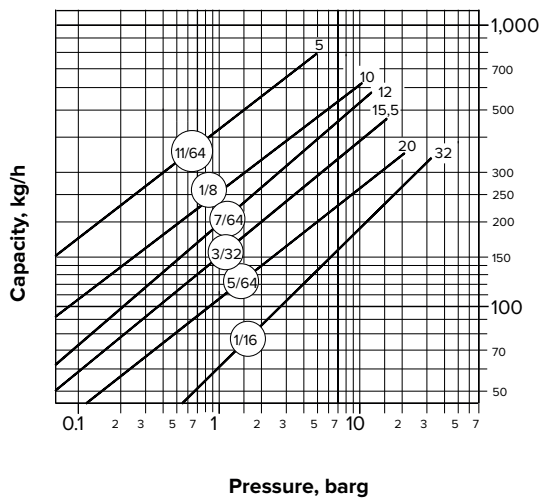


Table ST-147-2. Model ICS Series Capacity 1"

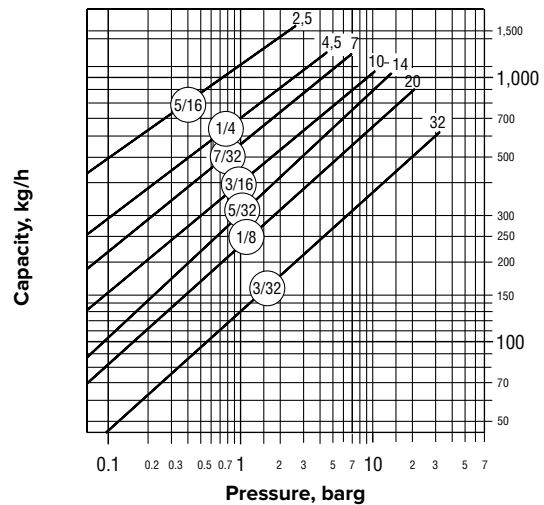


Table ST-147-3. Model ICS Series Capacity 1-1/2"

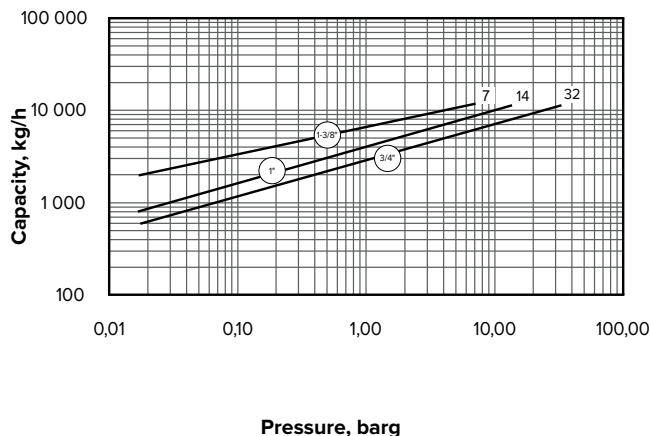
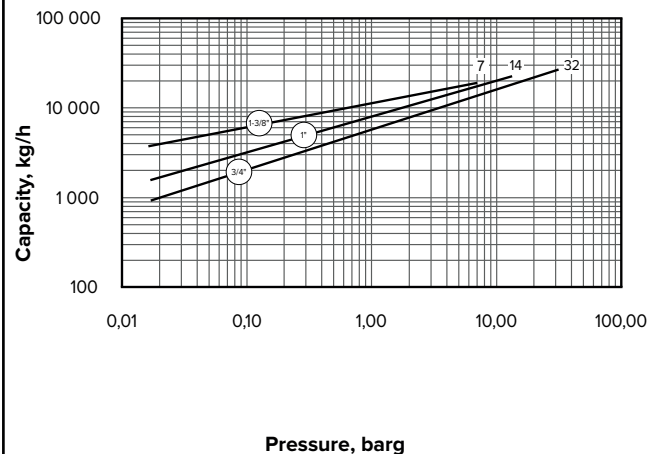
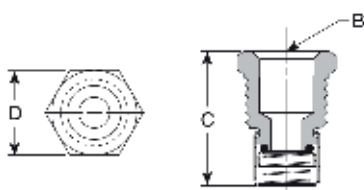


Table ST-147-4. Model ICS Series Capacity 2"



Pressure	Model	Connection Size	Flow Direction	Connection Type
20	ICS	8	V	SCREWED
Refer to capacity charts to determine orifice.	ICS	2 = 1/2" 3 = 3/4" 4 = 1"	Top to Bottom	Screw SW 150RF 300RF
		6 = 1-1/2" 8 = 2"		



Options

Vacuum Breaker 1/2" NPT

Many times, condensate will be retained ahead of steam traps because of the presence of a vacuum. To break a vacuum, air must be introduced into the system by means of a vacuum breaker.

For maximum protection against freezing and water hammer in condensing equipment under modulated control, vacuum breakers are recommended. Armstrong ICS Series F&T Traps are available with integral vacuum breakers. Maximum service pressure is 10.3 barg.

Table ST-147-5. Vacuum Breaker

Size	1/2 NPT	Max. allow. pres.
"B" Pipe Connections	3/8 NPT	10.3 barg
"C" Height	32	
"D" Width	22 Hex	

CAUTION: Do not use a conventional vacuum breaker open to the atmosphere in any system that incorporates a mechanical return system that carries pressure less than atmospheric pressure. This includes all return systems designated as vacuum returns, variable vacuum returns or subatmospheric returns. If a vacuum breaker must be installed in such a system, it should be of the type that is loaded to open only when the vacuum reaches a calibrated level well in excess of the design characteristics of the system.

* Standard flanges are ASME B16.5 Class 150, Class 300. No other flanges type available.