

Type 7140 Condensate Recovery System For collection and feedback of condensate

Application

The Type 7140 Condensate Recovery System is used to collect and feedback condensate as well as to recover heat from flash steam

The condensate recovery systems are used in applications where the condensate pressure is insufficient to feed back condensate into the condensate vessel. In this case, the condensate is collected in a vessel and pumped back by electric pumps. A heat recovery module allows the energy in the flash steam to be used to generate hot water.

Special features

- Turnkey system for condensate recovery and feedback
- Little space required for installation
- Heat recovery module
- Open tank

Versions

Type 7140-1 · Condensate recovery system for collection and feedback of condensate

- Flange connections in PN 16
- Tank sizes in 350, 700, 1000 or 1500 l
- Stainless steel
- Excessive head up to 200 m · Delivery pressure up to 20 bar
- With on-site level control without level indication
Optionally on-site level control with level indication
- Standard without insulation
Optionally with 19 mm Armaflex insulation or 50-mm-thick mineral wool with aluminum jacket
- One feed pump as standard
Optionally with two feed pumps (redundant 2 x 100 %) and integrated pump switchover control



Fig. 1: Type 7140-1 Condensate Recovery System in stainless steel, without insulation

Type 7140-2 · Condensate recovery system with integrated heat recovery module

- With open shell-and-tube heat exchanger at the flash steam outlet
- With/without hot water control

Special version

- Type 7141 Condensate Vessel ▶ T 3986 in combination with the Type 7111 Pump Assembly ▶ T 3973
- Type 7142 Flashing Vessel (▶ T 3987) for superheated condensate

Sample applications

- Condensate feedback into the condensate network with steam consumers working below the condensate network pressure
- Condensate recovery for consumers located further away
- Condensate recovery in open condensate networks

Principle of operation

The condensate vessel is used for intermediate storage of condensate in the steam system. The flash steam can evaporate in the condensate vessel. The flash steam in the vessel must be discharged over the N2A connection into a safe environment. The condensate level in the vessel rises as more condensate enters the vessel. A float switch or magnetic switch detects the rising level and starts pump operation. The pump stops running after the condensate level falls below the minimum filling level again.

If a heat recovery module is installed, it causes the flash steam at the N2A outlet to be piped through a heat exchanger. The energy in the flash steam is used to generate hot water. Any condensate runs back into the condensate vessel.

Table 1: *Technical data*

Condensate Recovery System		Type 7140	
Material of the pressure vessel and pipeline		1.4301	1.4571
Design data	Temperature	100 °C	
	Pressure	0 bar(g)	
Operating data		The maximum condensate peak must not exceed 30 % of the vessel size.	

Table 2: *Dimensions and connections (flanges)*

Tank size in liter	Dimensions in mm					Flange connections				
	A	B	C	D	E	N1.x	N2.x	N3	N4	Overflow
350	1500	1200	730	~277	110	DN 25	DN 25	DN 25	G ½	G 1/DN 25
700	2400	1510	800			DN 25/50	DN 25/50	DN 50		
1000			1085			DN 50				
1500	3000	1750	1300							

Dimensional drawings

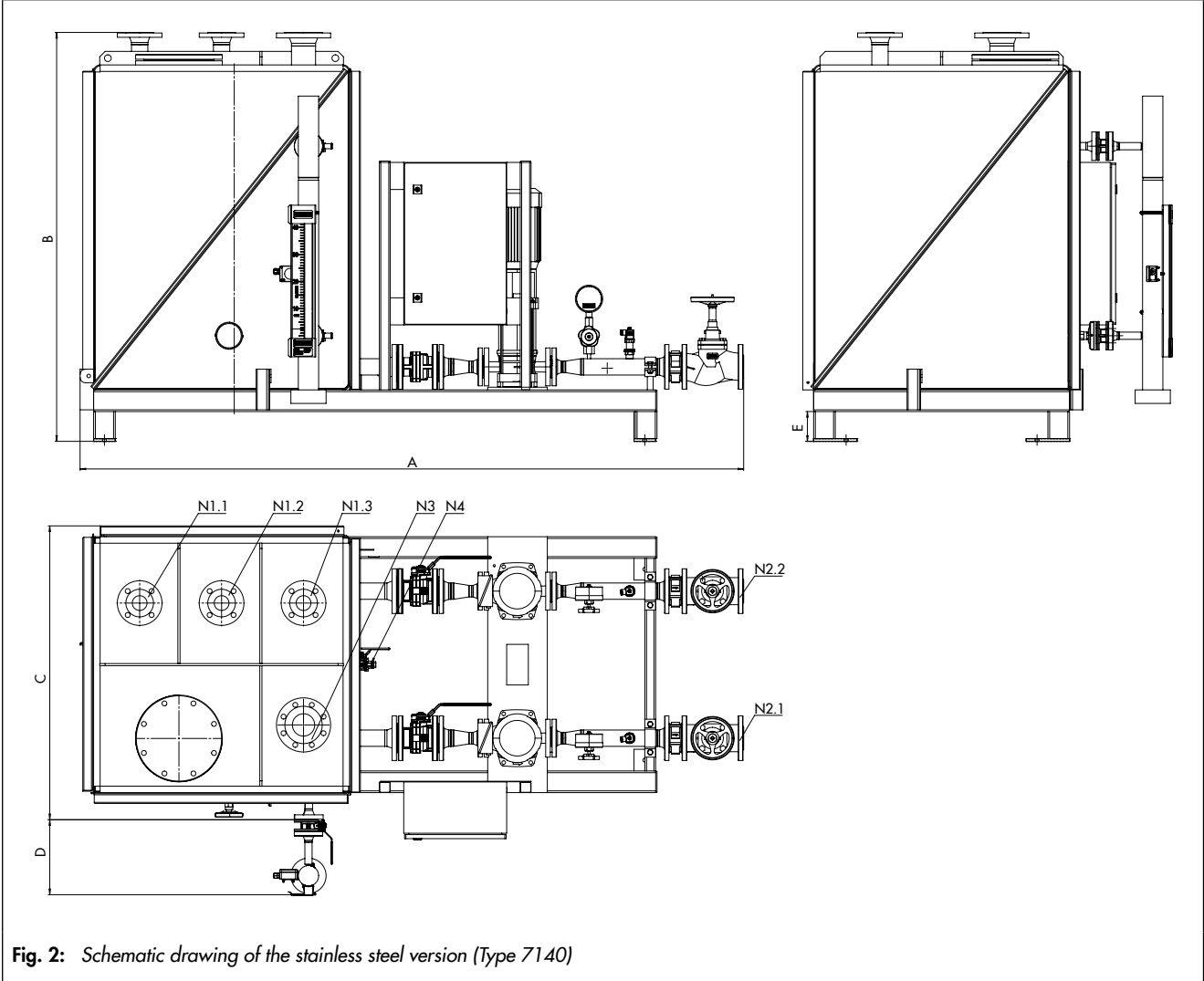


Fig. 2: Schematic drawing of the stainless steel version (Type 7140)

RFQ Form for Type 7140 Condensate Recovery System

Customer data	
Company	
Address	
Name	
Phone number	
E-mail	
Send your inquiry to your regional SAMSON contact or e-mail it to ► systems-de@samsongroup.com	
Operating data	
Constant condensate mass flow rate	$\dot{m}_1 =$ kg/h
Intermittent condensate mass flow rate	$\dot{m}_2 =$ kg/h
Max. peak load	$\dot{m}_3 =$ kg/h
Excessive head or delivery pressure	h = m or bar
Equipped with	
Vessel and skid material	1.4301 1.4571
Pump version	1x 100 % 2x 100 % Explosion-protected version
Insulation	Without 19 mm Armaflex 50 mm mineral wool with aluminum jacket
Liquid level measurement	Bypass level indicator with magnetic display with 4 level switches
Open loop control	Without SAMSON standard switching cabinet
Notes	