



SC SUN

Solar heat exchanger

SC SUN solar heat exchanger
SC SUN DHW solar heat exchanger for
domestic hot water

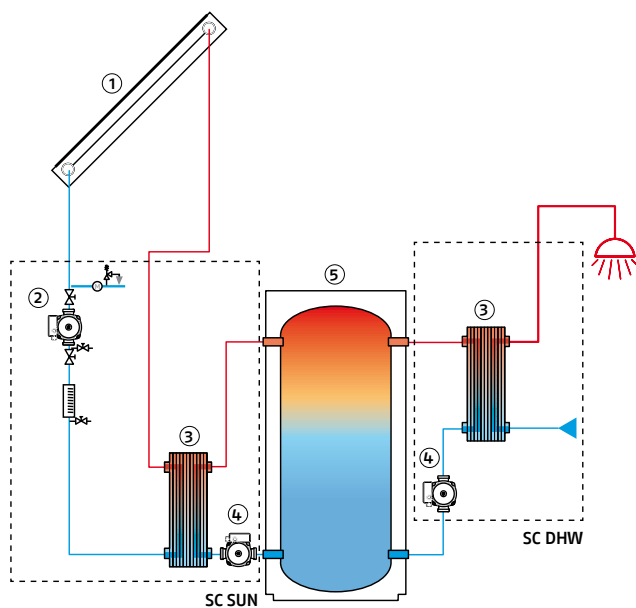
SC SUN

PRODUCT DESCRIPTION

Complete, ready-to-install solutions even when external heat stratification is preferred, by means of heat exchangers for both solar and DHW.

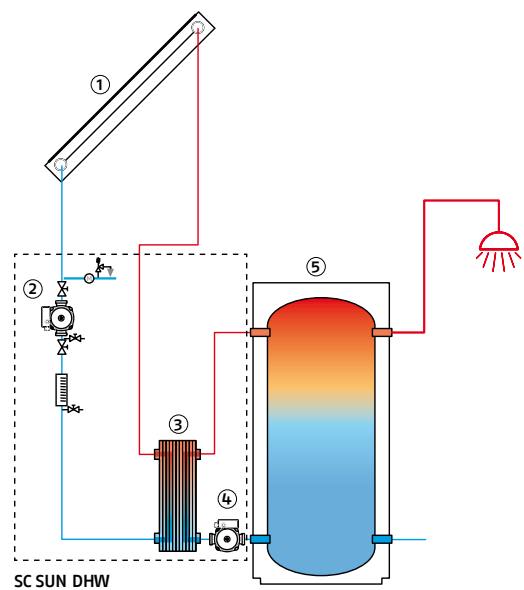
SC SUN is a solar heat exchanger equipped with inertia tanks whose components are sized and managed to transfer heat with maximum efficiency. The range is offered in three sizes: up to 50, 120 and 200 m² of exposed solar surface. A solar heat exchanger for instant domestic hot water production is also available, with 120 m² of exposed solar surface.

SCHEMATIC DIAGRAM



1. Riello solar collector
2. High efficiency solar pump
3. Plate heat exchanger
4. High efficiency pump
5. Riello puffer 7000

NOTE: Example schematic diagram



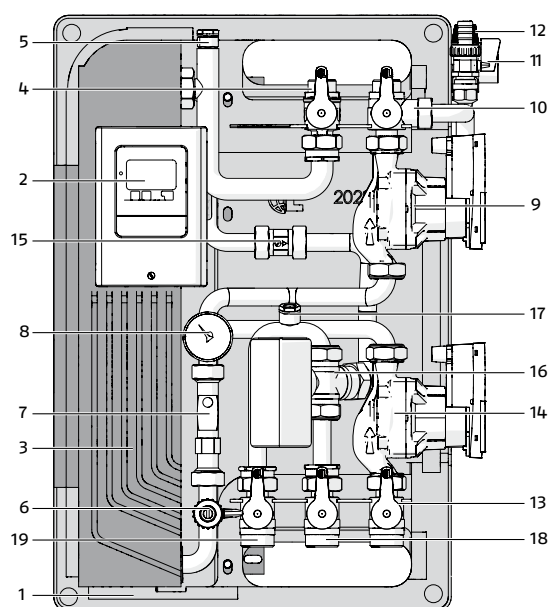
1. Riello solar collector
2. High efficiency solar pump
3. Plate heat exchanger
4. High efficiency DHW pump
5. Riello 7200/3F HV

NOTE: Example schematic diagram

SC SUN 50 SOLAR MODULE

SC SUN 50 is a separation module with a plate heat exchanger designed to supply energy to two thermal storage tanks (puffers) or to two different charge heights of a single storage tank (puffer), using a solar thermal system with collector array. The electronic adjustment system controls the speed of the high efficiency pump (with PWM function) in the primary circuit, thus ensuring optimal energy utilisation and management. The secondary circuit includes an electronic flow meter for displaying the flow rate and counting the quantity of heat exchanged. SC SUN 50, complete with thermal insulation, is prewired, tested and ready to use.

Structure



1. EPP insulation
2. Electronic regulator
3. Exchanger

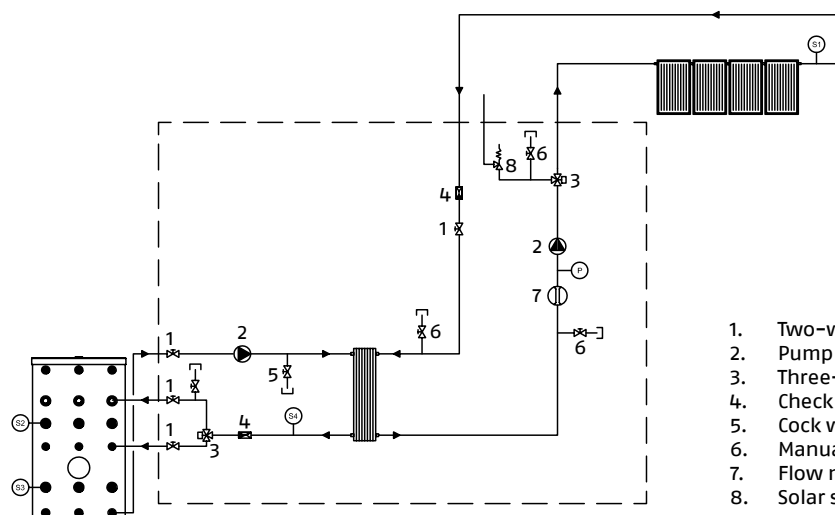
PRIMARY CIRCUIT

4. Primary delivery ball valve
5. Relief valve
6. Fill/drain valve
7. Flow meter with temperature sensor
8. Pressure gauge
9. Pump
10. 3-way primary return valve
11. Solar system fill/drain valve
12. Safety valve

SECONDARY CIRCUIT

13. Secondary delivery valve
14. Pump
15. Check valve
16. Motorised diverter valve
17. Relief valve
18. Puffer 1 return valve
19. Puffer 2 return valve

Hydraulic circuit



1. Two-way valve
2. Pump
3. Three-way diverter valve
4. Check valve
5. Cock with cap
6. Manual relief valve
7. Flow meter with temperature sensor
8. Solar safety valve

Technical data SC SUN 50

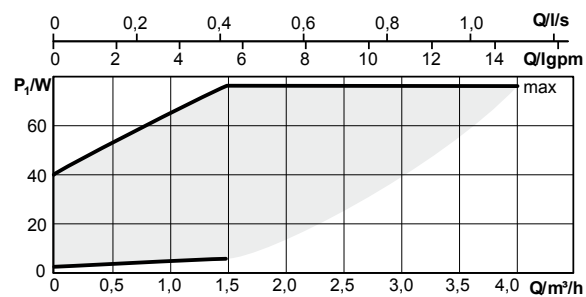
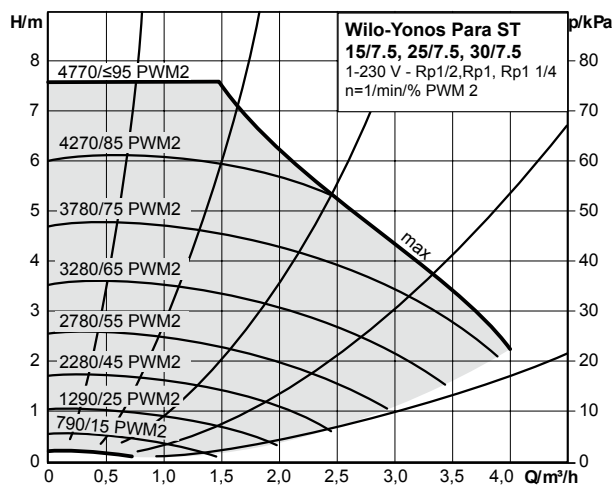
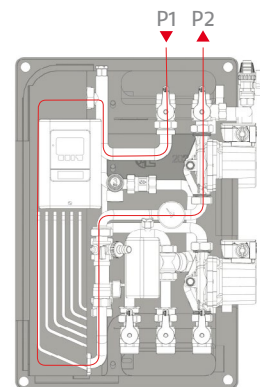
Model	UM	SC SUN 50
Heat input exchanged	kW	32
Primary maximum flow rate	l/h	1500
Secondary maximum flow rate	l/min	19.2
DT primary circuit	°C	20.0
DT primary input/secondary output	°C	4.0
Surface of panels	m ²	50
Minimum admitted temperature	°C	2
Maximum operating pressure	°C	110
Maximum operating pressure primary side	bar	10
Primary check valve opening pressure	mbar	45
Secondary check valve opening pressure	mbar	20
Primary pump electrical power input (max/standby)	W	38 / 1
Secondary pump electrical power input (max/standby)	W	23 / 1
Solar controller electrical power input (standby)	W	0.5
Solar controller energy efficiency	%	1
Power supply voltage	V	230
Power supply frequency	Hz	50-60
Electrical protection rating	IP	40
Net weight	kg	22.8
Water volume	l	6.8
Plate dimensions: Width (W) x Height (H) x Depth (D)	mm	117 x 524 x 2.25
Number of plates	no.	16
Exchange surface	m ²	0.88
Dimensions: Width (W) x Height (H) x Depth (D)	mm	400 x 600 x 260

Pump characteristic curves (residual head and power consumption)

Primary circuit

Type: Wilo Yonos Para ST 15/7.5

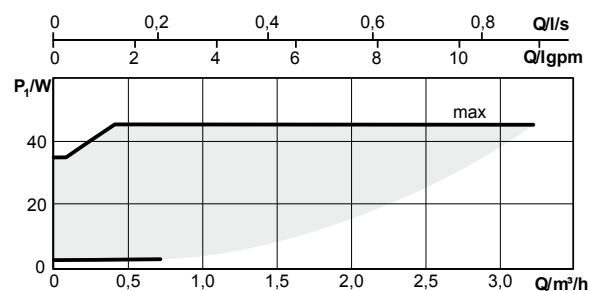
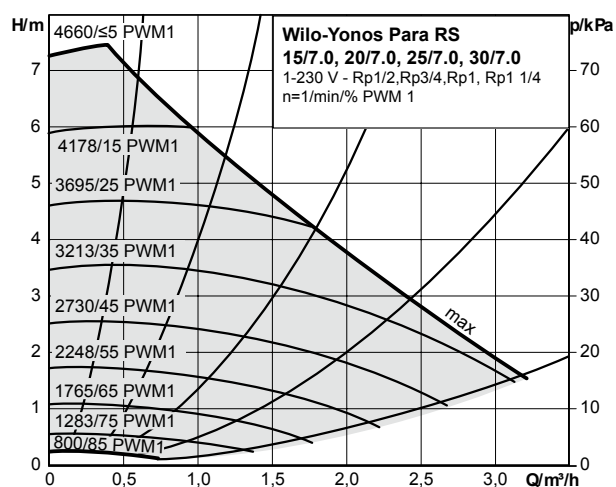
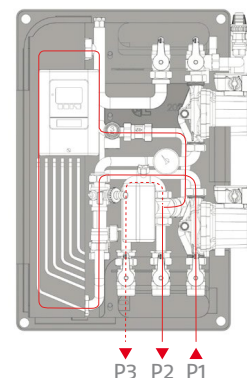
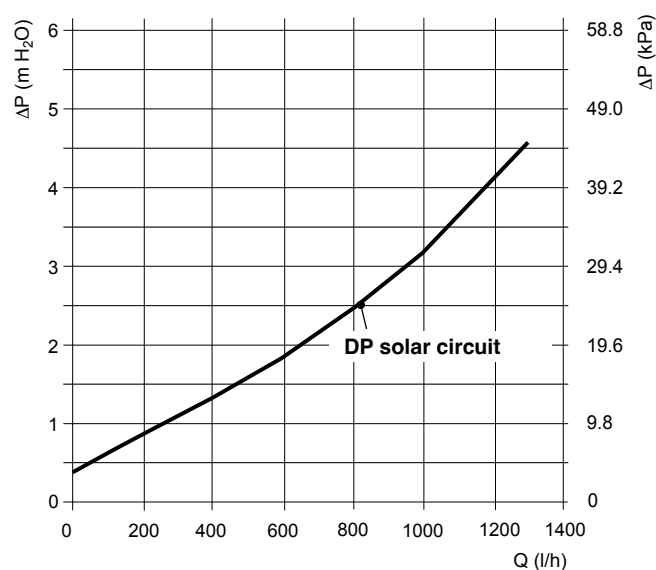
Speed	n	rpm	800 – 4770
Power consumption 1 – 230 V	P1	W	3 – 76
Current at 1 – 230 V	I	A	0.03 – 0.70
Max. head	H	m	7.6
Max. flow rate	G	l/h	4000



Secondary circuit

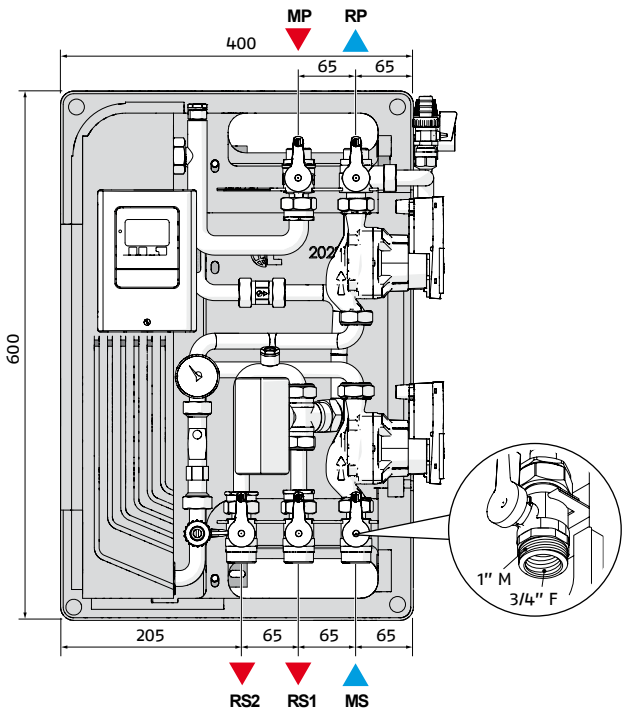
Type: Wilo Yonos Para RS 15/7.0

Speed	n	rpm	800 – 4660
Power consumption 1 – 230 V	P1	W	3 – 45
Current at 1 – 230 V	I	A	0.03 – 0.44
Max. head	H	m	7.2
Max. flow rate	G	l/h	3300

**Primary circuit head loss**

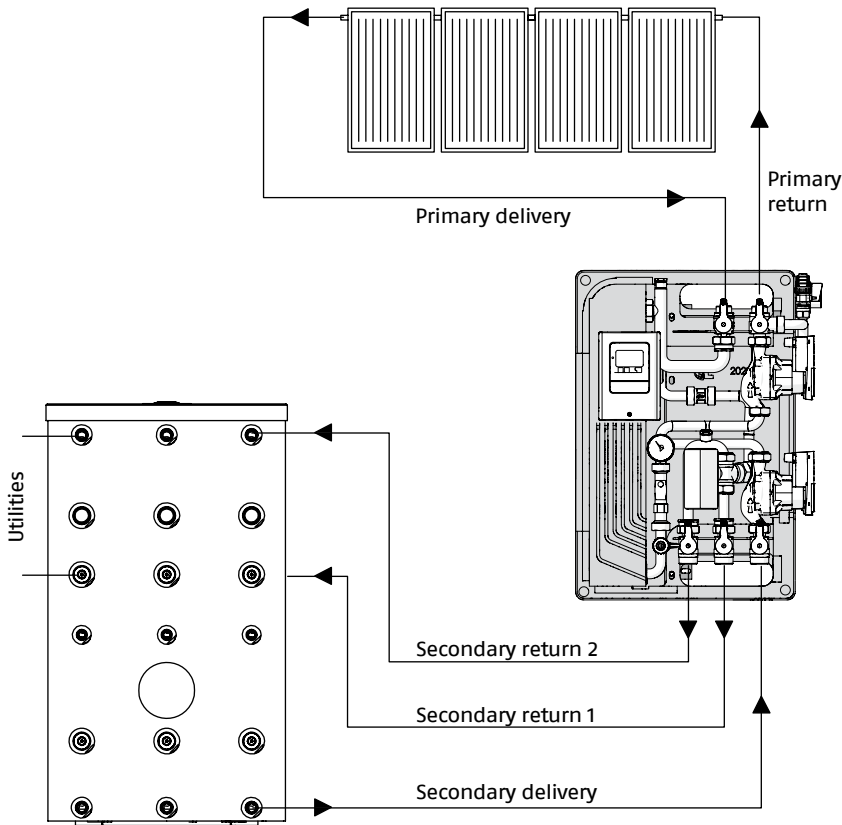
NOTE: to calculate the usable head on the solar circuit, subtract the internal circuit's head loss shown in the graph below from the head of the primary pump.

Dimensions and Fittings

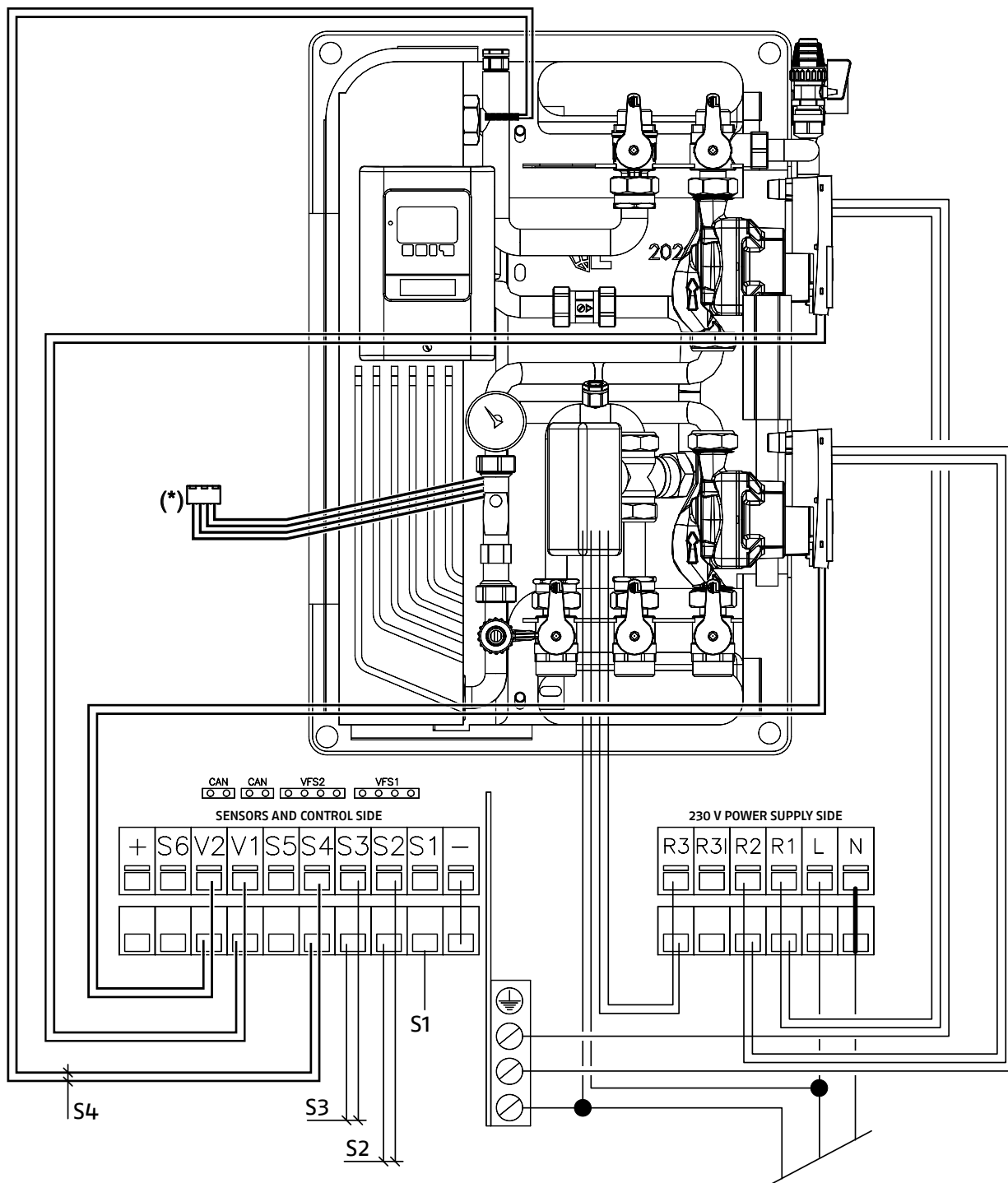


MP - Primary delivery	Ø 22 mm pipe ogee connection
RP - Primary return	Ø 22 mm pipe ogee connection
MS - Secondary delivery	1" M - 3/4" F
RS1 - Secondary return 1	1" M - 3/4" F
RS2 - Secondary return 2	1" M - 3/4" F

System diagram



Wiring diagram



- S1 Solar collector sensor DO NOT WIRE!
 S2 High/1 puffer sensor
 S3 Low/2 puffer sensor
 S4 Secondary delivery sensor
 (*) To be routed into controller terminal VFS1

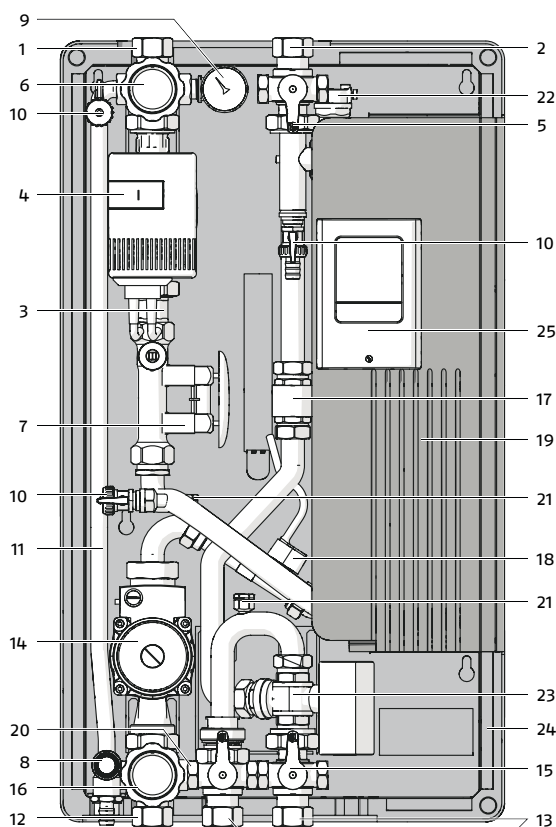
- V1 Primary pump PWM signal
 V2 Secondary pump PWM signal
 R1 Primary pump relay
 R2 Secondary pump relay
 R3 Diverter valve relay

SOLAR MODULES SC SUN 120 AND SC SUN 120 DHW

SC SUN 120 and SC SUN 120 DHW are a separation module and a domestic hot water production module, respectively. Both are fitted with a plate heat exchanger designed to supply energy to two thermal storage tanks (puffers) or to two different charge heights of a single storage tank (puffer), using a solar thermal system (high-flow or low-flow) with collector array. The electronic adjustment system controls the speed of the high efficiency pump (with 0-10 V function) in the primary circuit, thus ensuring optimal energy utilisation and management. The secondary circuit in both modules includes an electronic flow meter for displaying the flow rate and counting the quantity of heat exchanged.

SC SUN 120 and SC SUN 120 DHW modules, complete with thermal insulation, are prewired, tested and ready to use.

Structure



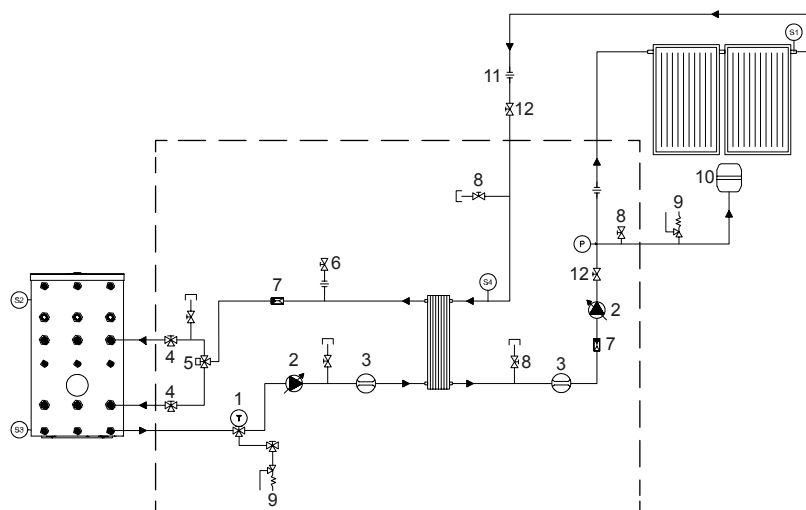
PRIMARY circuit

1. 3-way ball valve DN25 1" F
2. Ball valve DN25 1" F
3. Check valve
4. Solar pump
5. Red handle
6. Blue handle with thermometer
7. Flow regulator
8. Solar safety valve
9. Pressure gauge
10. 1/2" fill-drain valve
11. Pipe for expansion vessel connection

SECONDARY CIRCUIT

12. 3-way ball valve DN25 1" F
13. Ball valve DN25 1" F
14. System pump
15. Red handle
16. Blue handle with thermometer
17. Check valve
18. VFS flow sensor
19. Plate heat exchanger
20. Safety valve
21. Manual relief valve
22. Robocal air vent
23. Motorised diverter valve
24. Black EPP insulation 40 g/l
25. Electronic regulator

Hydraulic circuit



1. Three-way ball valve with thermometer
2. Modulating pump
3. Flow indicator
4. Three-way shut-off valve
5. Three-way diverter valve
6. Manual relief valve
7. Check valve
8. Manual discharge valve with cap
9. Safety valve
10. Expansion vessel
11. Three-piece joint
12. Shut-off valve

Technical data SC SUN 120 – SC SUN 120 DHW

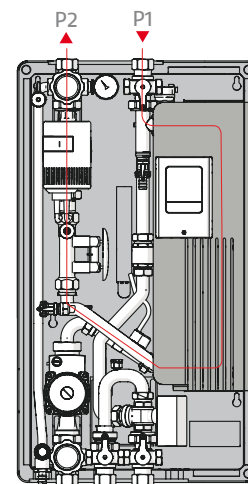
Model	UM	SC SUN 120	SC SUN 120 DHW
Heat input exchanged	kW	52	52
Primary maximum flow rate	l/h	2400	2400
Secondary maximum flow rate	l/min	40	40
DT primary circuit	°C	20	20
Surface of panels	m ²	80	80
Minimum admitted temperature	°C	2	2
Maximum operating pressure	°C	110	110
Maximum operating pressure primary side	bar	10	10
Primary check valve opening pressure	mbar	45	45
Secondary check valve opening pressure	mbar	20	20
Primary pump electrical power input (max/standby)	W	70 / 1.44	70 / 1.44
Secondary pump electrical power input (max/standby)	W	23 / 1	23 / 1
Solar controller electrical power input (standby)	W	0.5	0.5
Solar controller energy efficiency	%	1	1
Power supply voltage	V	230	230
Power supply frequency	Hz	50-60	50-60
Electrical protection rating	IP	40	40
Net weight	kg	32	32
Water volume	l	12.6	12.6
Plate dimensions: Width (W) x Height (H) x Depth (D)	mm	117 x 525 x 2.25	117 x 525 x 2.25
Number of plates	no.	50	50
Exchange surface	m ²	3.02	3.02
Dimensions: Width (W) x Height (H) x Depth (D)	mm	475 x 835 x 226	475 x 835 x 226

Pump characteristic curves (residual head and power consumption)

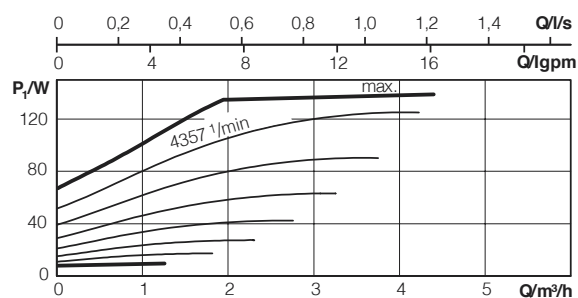
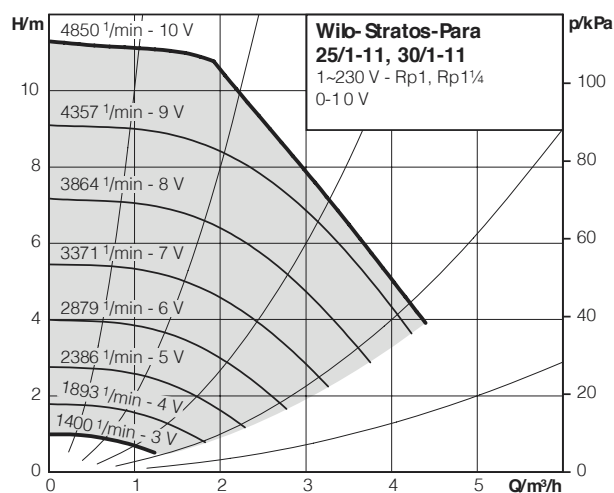
Primary circuit

Type: Wilo Stratos Para 25/1-11

Speed	n	rpm	1400 – 4850
Power consumption 1 – 230 V	P1	W	8 – 140
Current at 1 – 230 V	I	A	0.07 – 1.05
Max. head	H	m	11
Max. flow rate	G	l/h	4500



External control mode via Analog-In 0-10 V



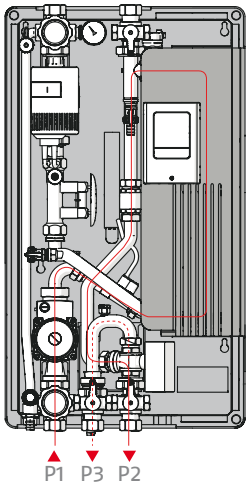
SOLAR THERMAL

Solar heat exchangers

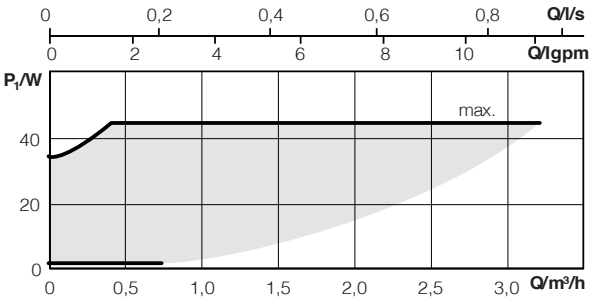
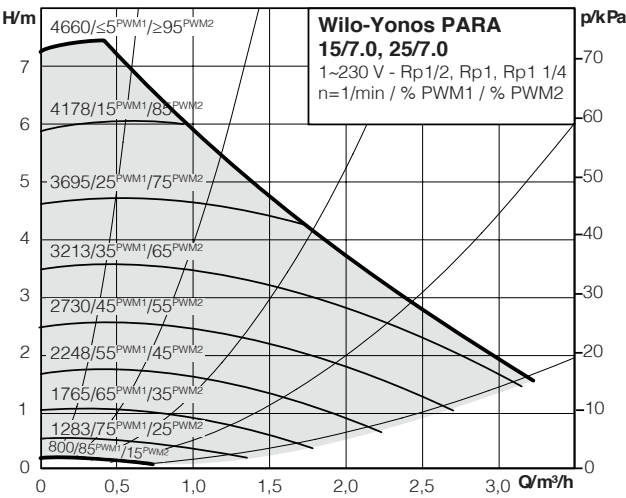
Secondary circuit

Type: Wilo Yonos Para RS 15/7.0

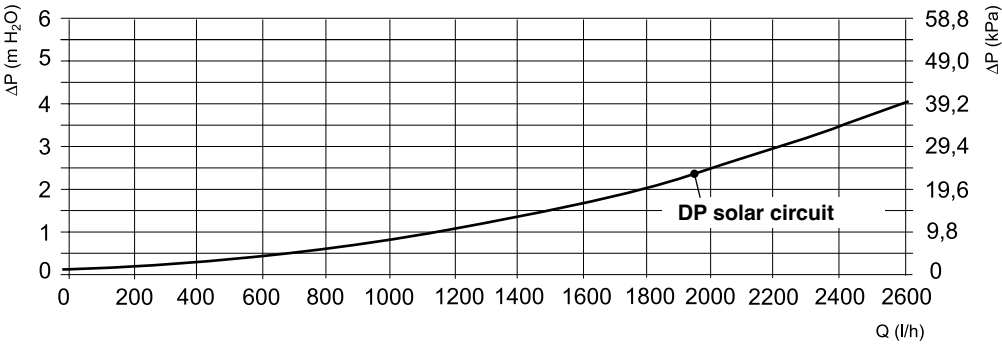
Speed	n	rpm	800 – 4660
Power consumption 1 – 230 V	P1	W	3 – 45
Current at 1 – 230 V	I	A	0.03 – 0.44
Max. head	H	m	7.2
Max. flow rate	G	l/h	3300



External control via PWM 1

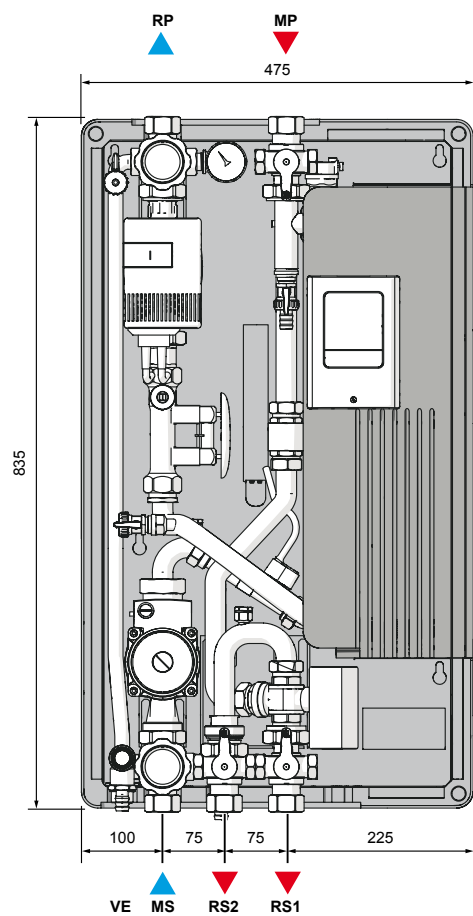


Primary circuit head loss



NOTE: to calculate the usable head on the solar circuit, subtract the internal circuit's head loss shown in the graph below from the head of the primary pump.

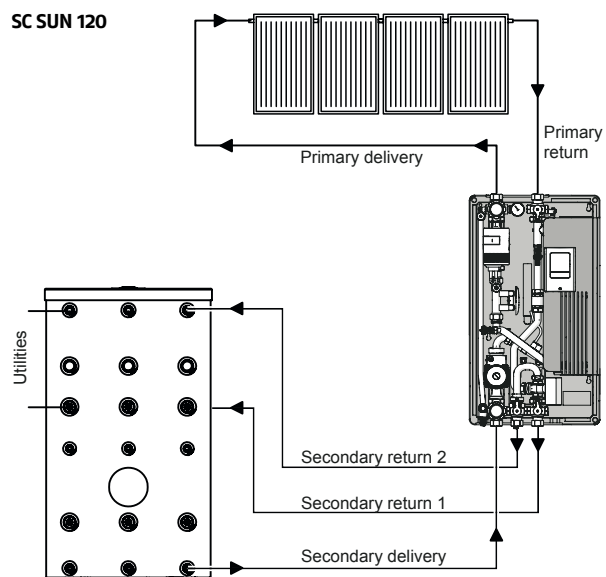
Dimensions and Fittings



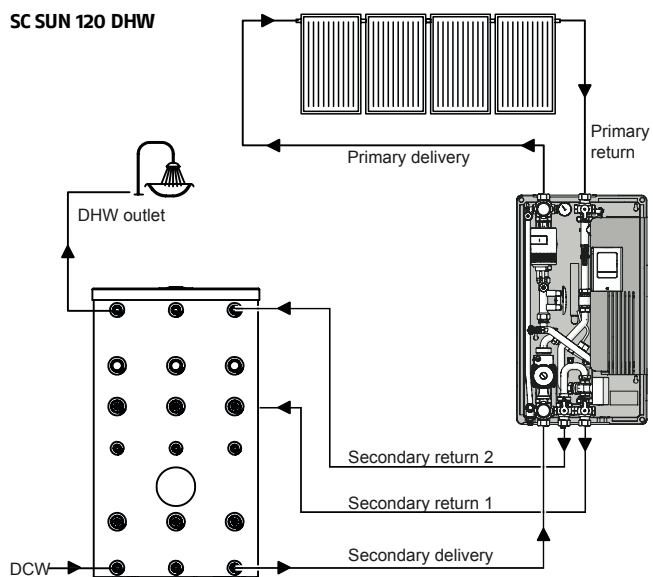
MP – Primary delivery	1" F
RP – Primary return	1" F
MS – Secondary delivery	1" F
RS1 – Secondary return 1	1" F
RS2 – Secondary return 2	1" F
VE – Expansion vessel fitting	3/4" M

System diagram

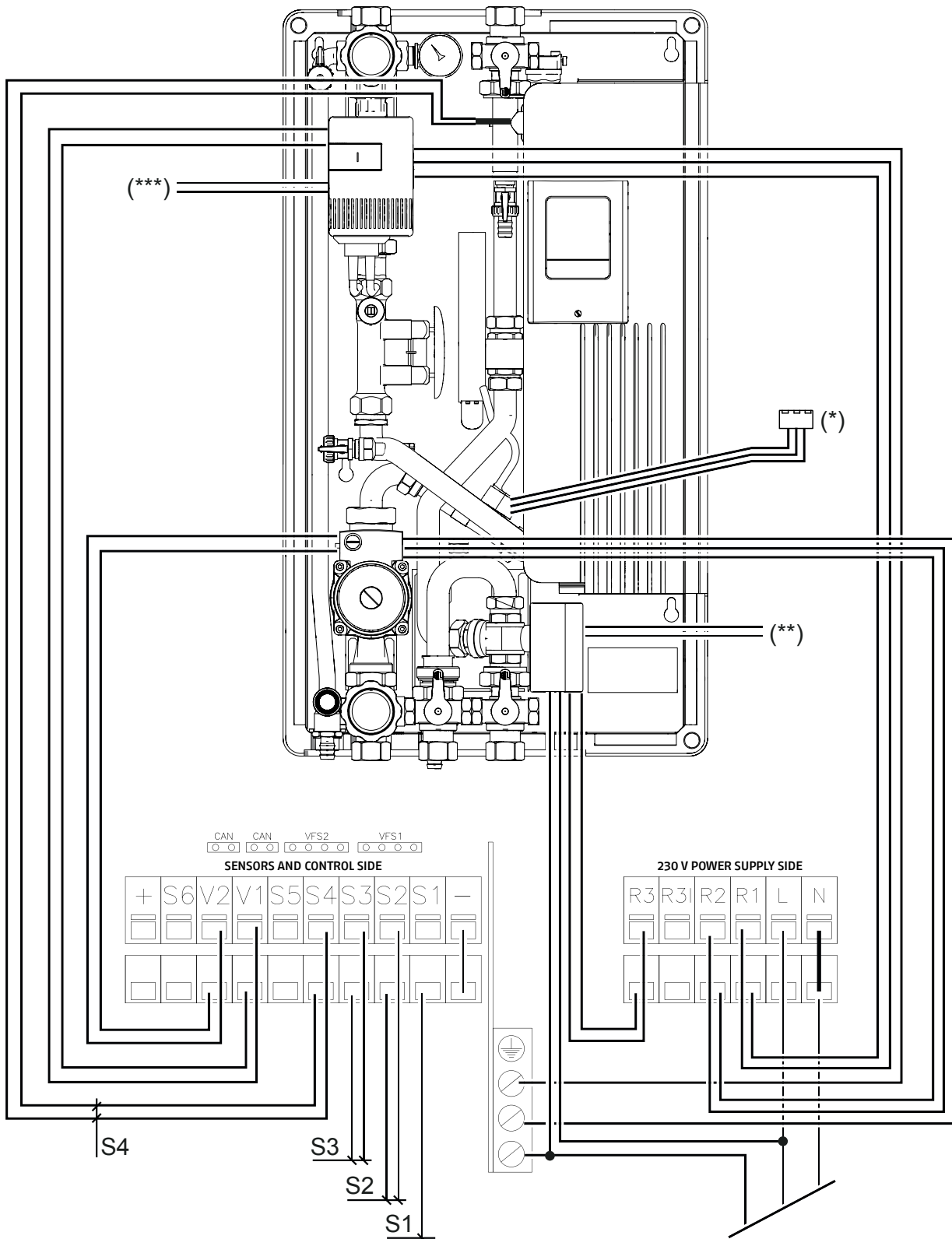
SC SUN 120



SC SUN 120 DHW



Wiring diagram



- S1 Solar collector sensor DO NOT WIRE!
S2 High/1 puffer sensor
S3 Low/2 puffer sensor
S4 Secondary delivery sensor
(*) To be routed into control unit terminal VFS1
(**) Trim orange/black cable (NC)
(***) Trim blue/black cable (NC)

- V1 Primary pump 0-10V signal
V2 Secondary pump PWM signal
R1 Primary pump relay
R2 Secondary pump relay
R3 Diverter valve relay

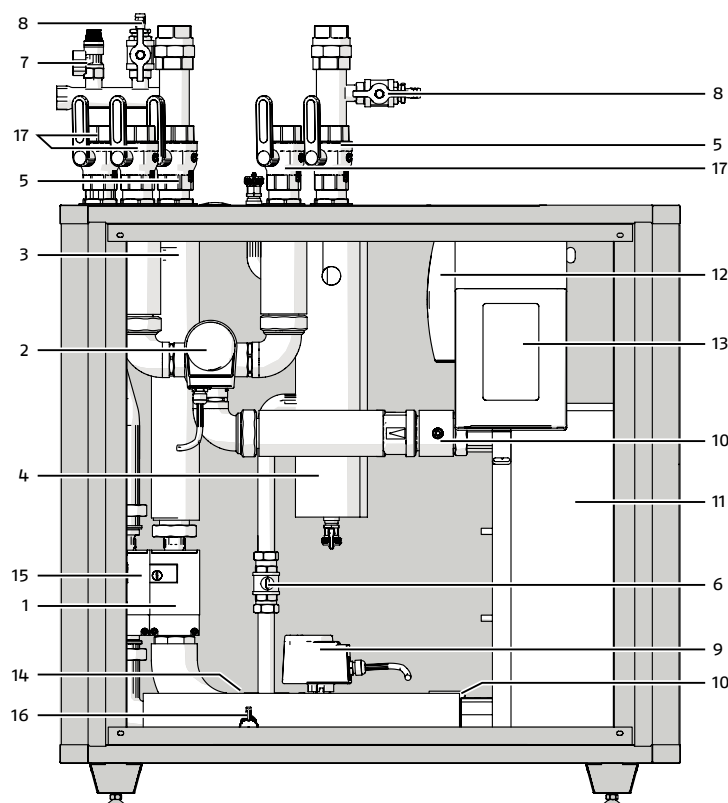
SOLAR MODULES SC SUN 300

SC SUN 300 are a separation module and a domestic hot water production module, respectively. Both are fitted with a plate heat exchanger designed to supply energy to two thermal storage tanks (puffers) or to two different charge heights of a single storage tank (puffer), using a solar thermal system (high-flow or low-flow) with collector array.

The electronic adjustment system controls the speed of the high efficiency pump (with 0-10 V function) in the primary circuit, thus ensuring optimal energy utilisation and management. The secondary circuit in both modules includes an electronic flow meter for displaying the flow rate and counting the quantity of heat exchanged.

SC SUN 300 modules, complete with thermal insulation, are prewired, tested and ready to use.

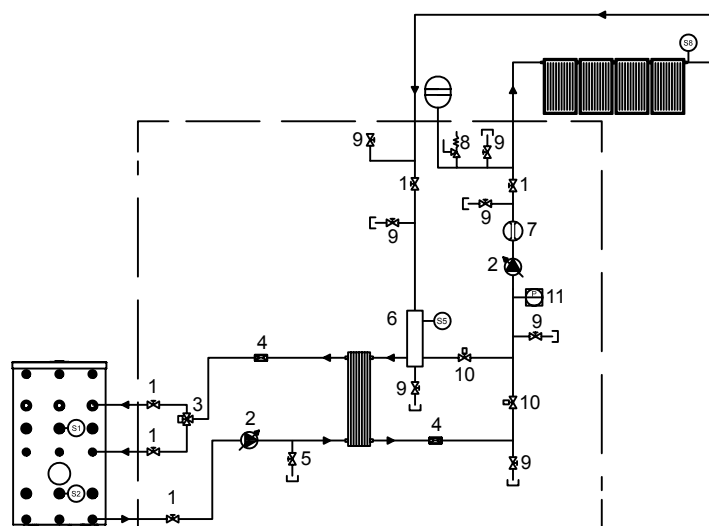
Structure



PRIMARY circuit

1. Solar circuit pump
2. 3-way ball valve F-F 1½"
3. Flow / temperature Vortex Flow Sensor 200 l/min 1¼"
4. Degasser pipe with manual relief valve
5. Solar circuit ball valve in sanded brass F-F 1½"
6. Primary bypass motorised two-way valve M-M 1"
7. Kit with safety valve 10 bar
8. Kit with solar system fill/drain valve
9. Motorised 2-way primary return valve F-F 1½"
10. Check valve in sanded brass F-F 1½"
11. Stainless steel plate heat exchanger
12. Electrical power panel with circuit breaker
13. XTDC electronic regulator
14. Pressure-temperature sensor RPS 1 - 8 bar
15. Heating circuit pump
16. Fill/drain valve
17. Heating circuit ball valve in sanded brass F-F 1½"

Hydraulic circuit



1. Two-way valve
2. Modulating pump
3. Three-way diverter valve
4. Check valve
5. Cock with cap
6. Degasser pipe with manual relief valve
7. Flow meter with temperature sensor
8. Solar safety valve
9. Drain valve
10. Two-way valve
11. Pressure transducer

Technical data SC SUN 300

Model	UM	SC SUN 300
Heat input exchanged	kW	129
Primary maximum flow rate	l/h	6000
Secondary maximum flow rate	l/min	116.7
DT primary circuit	°C	20
Surface of panels	m ²	200
Minimum admitted temperature	°C	2
Maximum operating pressure	°C	110
Maximum operating pressure primary side	bar	10
Primary check valve opening pressure	mbar	40
Secondary check valve opening pressure	mbar	40
Primary pump electrical power input (max/standby)	W	155 / 1.72
Secondary pump electrical power input (max/standby)	W	70 / 1
Solar controller electrical power input (standby)	W	0.5
Solar controller energy efficiency	%	1
Power supply voltage	V	230
Power supply frequency	Hz	50-60
Electrical protection rating	IP	40
Net weight	kg	155
Water volume	l	45
Plate dimensions: Width (W) x Height (H) x Depth (D)	mm	243 x 525 x 2.29
Number of plates	no.	60
Exchange surface	m ²	7.66
Dimensions: Width (W) x Height (H) x Depth (D)	mm	1000 x 1140 x 500

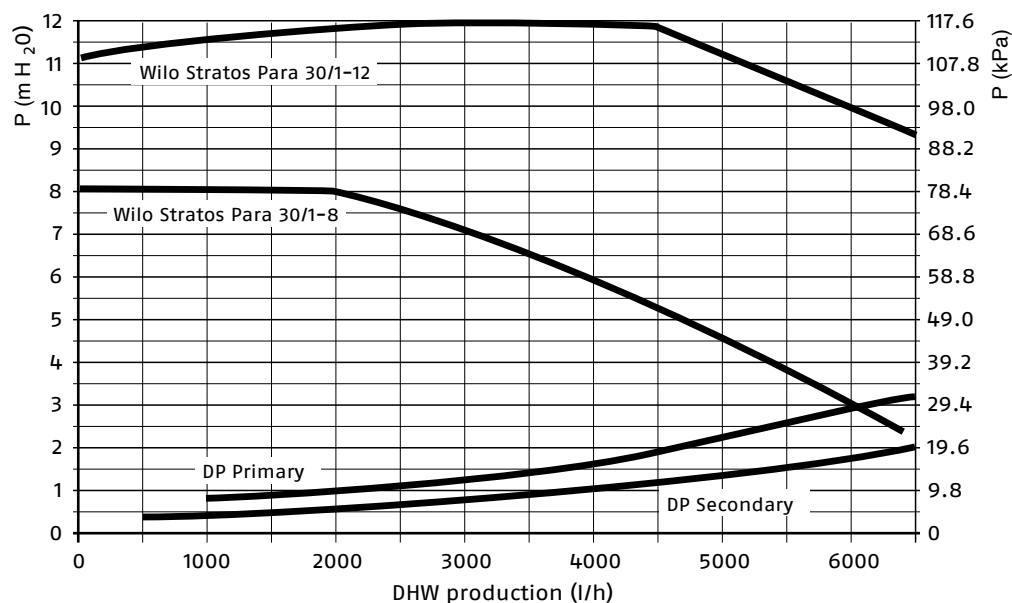
Characteristic and head loss curves

Solar primary circuit

Type: Wilo Stratos Para 30/1-12

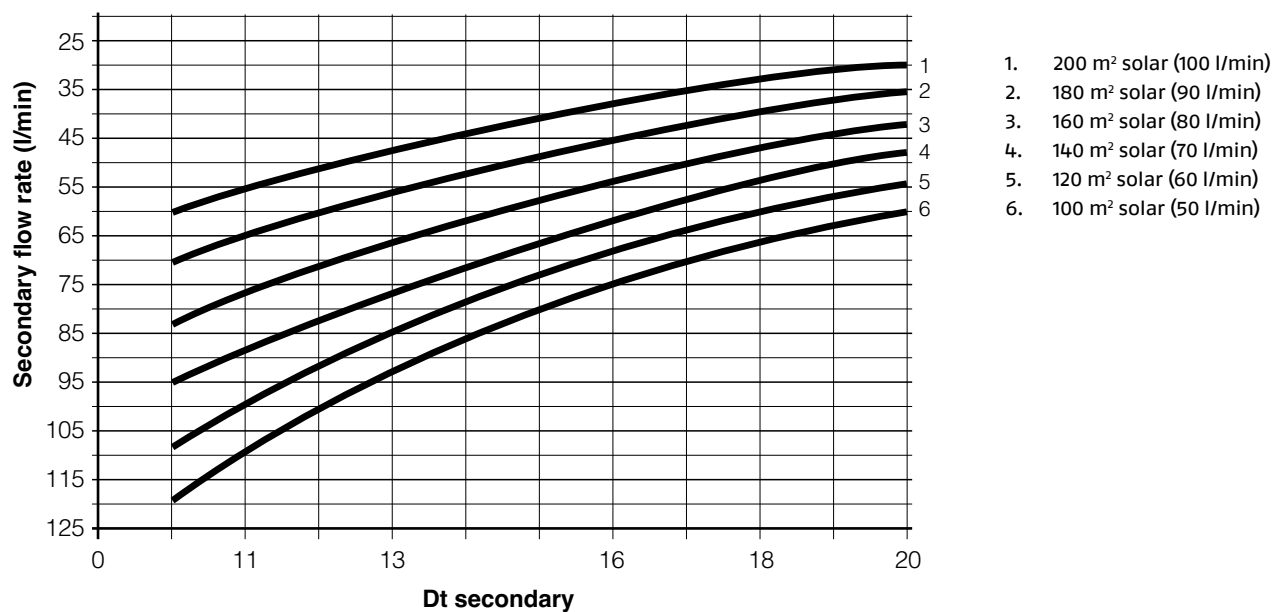
Puffer secondary circuit

Type: Wilo Stratos Para 30/1-8



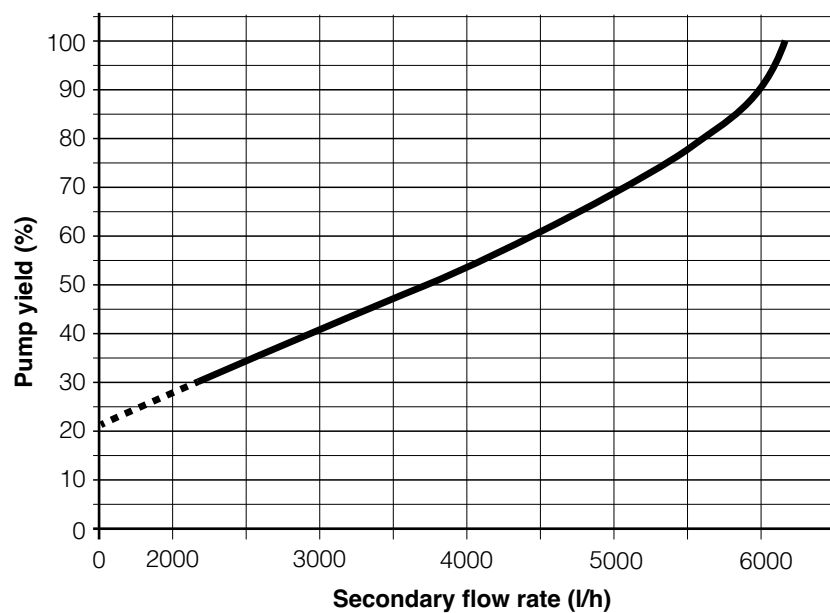
NOTE: to calculate the usable head of the two pumps, subtract the internal circuit's head loss shown in the graph from the head.

Secondary circuit yield

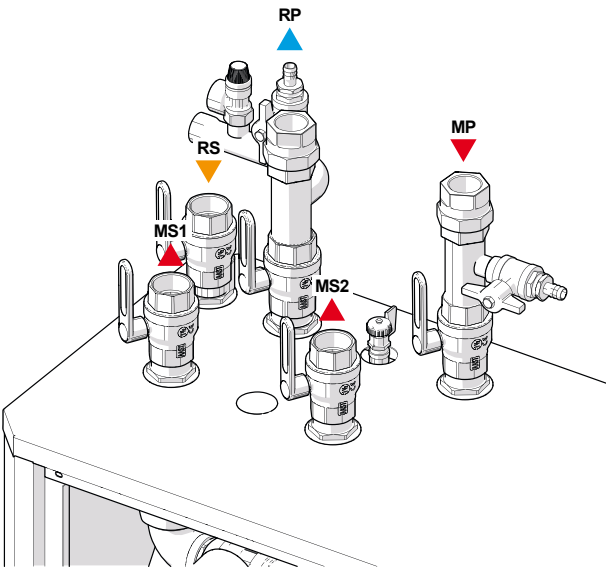


NOTE: Assuming primary operation 0.5 l/min·m² - DT 12°C (95°C - 83°C) / Secondary delivery 90°C.

Secondary pump efficiency (%)



Dimensions and Fittings



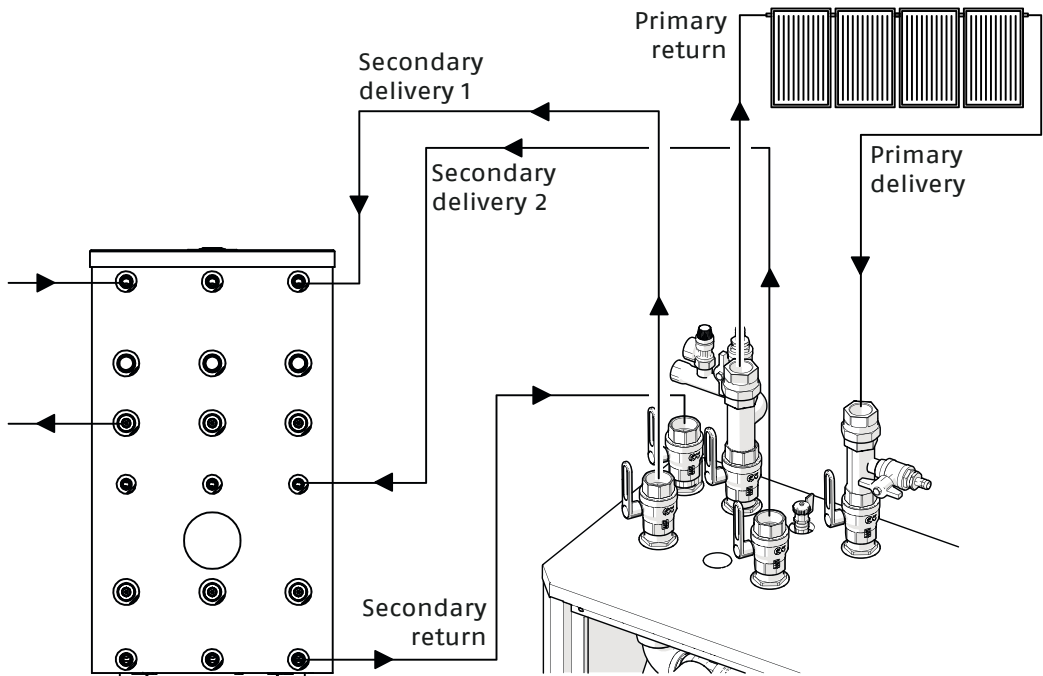
RP - Primary return (solar)	1 1/2" F
MP - Primary delivery (solar)	1 1/2" F
RS - DHW recirculation	1 1/2" F
MS1 - Secondary delivery 1	1 1/2" F
MS2 - Secondary delivery 2	1 1/2" F

Dimensions:

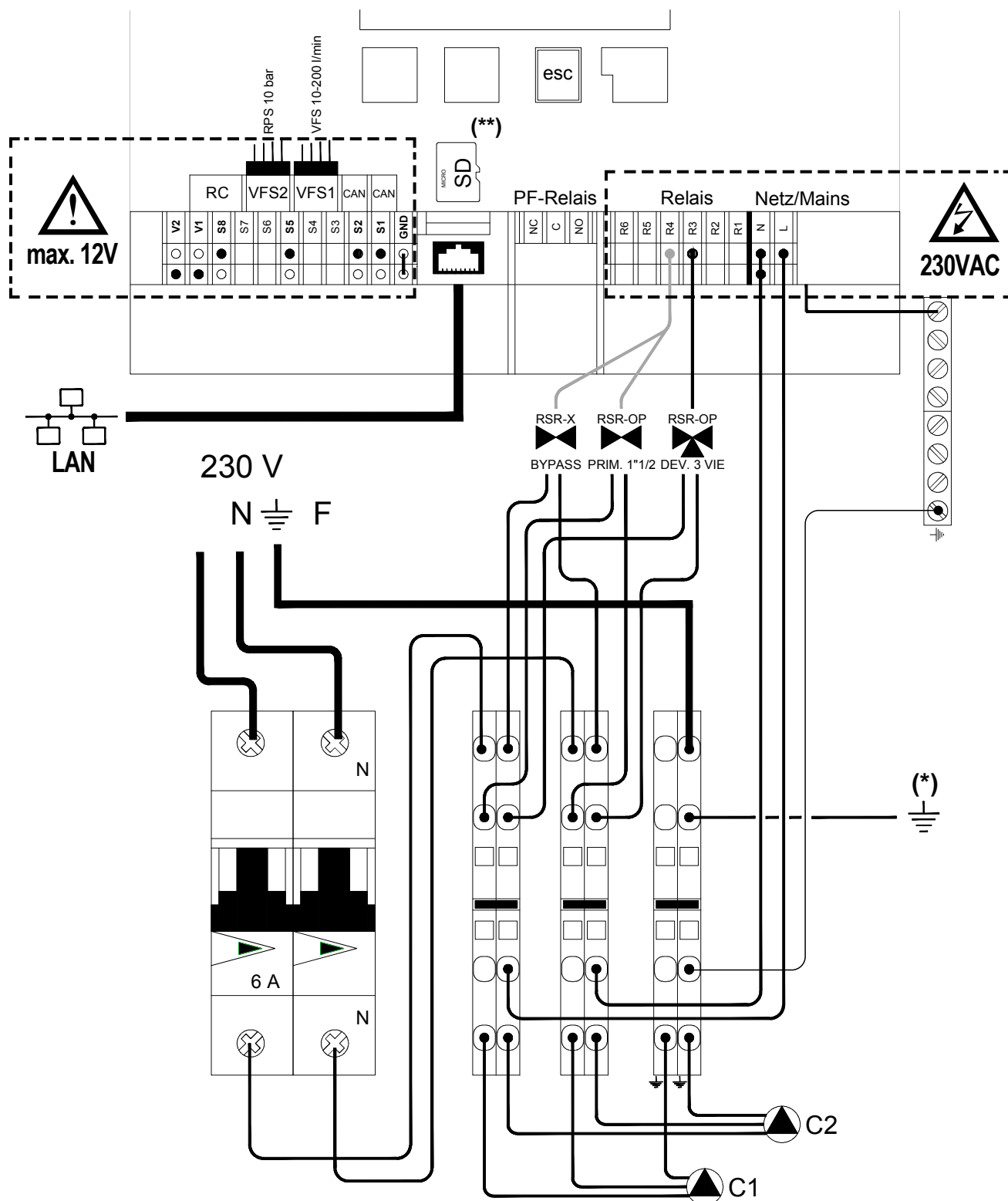
Height	1140 mm (including fittings)
Width	1000 mm
Depth	500 mm

We recommend leaving a clearance of at least 50 cm around the device to allow for inspections and maintenance.

System diagram



Wiring diagram



- S1 High puffer sensor
- S2 Low puffer sensor
- S5 Exchanger sensor
- S8 Solar collector sensor
- V1 Pump 1 speed check
- V2 Pump 2 speed check
- C1 Primary pump

- C2 Secondary pump
- (*) To frame
- (**) SD Card slot for Data logging and updating firmware. Make sure the SD card is facing the right way! The card must be inserted without pressure!

DESCRIPTION OF LTDC REGULATOR FOR MODULES SC SUN 50 – 120 – 120 DHW – 300

INFORMATION ON CONTROLLER

The differential controller LTDC4 enables efficient use and control of the solar or heating system. The display enables simple, almost self-explanatory, operation of the controller. Data at each programming stage are associated with certain functions and explained with text.

The LTDC4 can be used as a temperature difference controller for various types of system. The controller is supplied with all the above parameters set to default at the factory; these parameters can be reset by an authorised technician according to user requirements. The controller's menu contains key words for settings and measured values, as well as help text and graphics.



Main characteristics of the LTDC4:

- Description of graphics and text on the display
- Simple viewing of the current measured values
- System analysis and monitoring by means of statistical graphics, etc.
- Extensive setting menus with explanations
- PWM and 0-10V output
- The menu can be blocked to prevent unintentional changes
- Reset to previously selected values or factory settings
- Wide range of additional functions.

TECHNICAL SPECIFICATIONS

Electrical specifications	
Voltage	230VAC +/- 10%
Frequency	50-60Hz
Current consumption	2VA
Contact power	
Electronic relay R1	min. 5W / max 120W for AC3
Electronic relay R2	min. 5W / max 120W for AC3
Mechanical relay R3	460VA for AC1 / 185W for AC3
PMV output	For work resistance 10 k Ω
Internal fuse	2A slow-blow 250V
Protection rating	IP40
Protection class	II
Sensor inputs	6 x Pt1000 + 2 x Vortex flow sensor (VFS)
Measuring range	PT 1000 -40°C up to 300°C
Vortex sensor	0°C to 100°C (-25°C /120°C rapid)
	1 l/min – 12 l/min (VFS1-12)
	2 l/min – 40 l/min (VFS2-40)
	5 l/min – 100 l/min (VFS5-100)
	10 l/min – 200 l/min (VFS10-200)

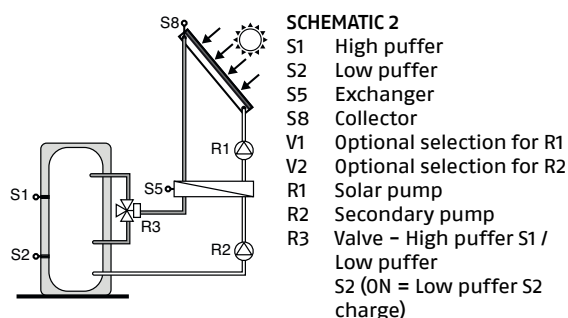
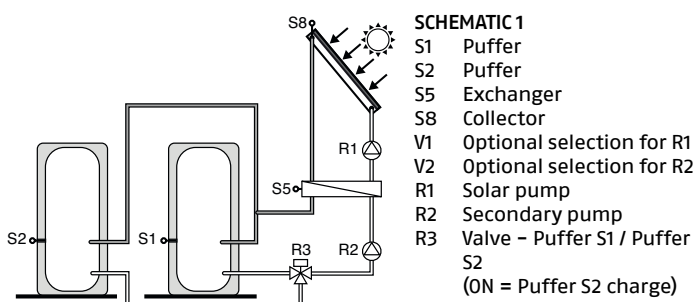
Permitted climatic conditions:	
Ambient temperature:	
for controller operation	0°C-40°C
for transport/storage	0°C-60°C
Air humidity:	
for controller operation	max. 85% relative humidity with 25°C
for transport/storage	No humidity condensate permitted
Permitted climatic conditions:	
Enclosure	3 parts, ABS plastic
External dimensions	163 mm x 110 mm x 52 mm
Clearance for installation	157 mm x 106 mm x 31 mm
Display	Large graphical display, 128 x 128 dots
LED	Multi-coloured green / red
Programming	4 buttons
Temperature sensors	
Collector or boiler sensor	Pt1000, e.g. TT/S2 up to 180°C
Puffer sensor	Pt1000, e.g. TR/P4 up to 95°C
Contact sensor	Pt1000, e.g. contact sensor TR/P4 up to 95°C
Sensor range	Pt1000: 2 x 1mm ² up to max. 30m

RESISTANCE/TEMPERATURE TABLE FOR PT1000 SENSORS

°C	0	10	20	30	40	50	60	70	80	90	100
Ω	1000	1039	1077	1116	1155	1194	1232	1270	1308	1347	1385

Possible schematics

The possible schematics for the SC SUN 300 module are number 1 and number 2, shown in the images below.



SC SUN 50**PRODUCT DESCRIPTION FOR SPECIFICATIONS**

Separation module with a plate heat exchanger designed to supply energy to 2 puffers or to 2 different charge heights, using a solar thermal system with collector array.

UNIT SPECIFICATIONS

- Maximum operating pressure 10 bar.
- Fully insulated AISI 316 stainless steel braze welded plate heat exchanger, 31.3 kW power exchanged and 50 m² solar system coverage (25 l/min nominal flow rate on primary).
- Black EPP thermal insulation with a density of 40 g/l, with the controller thermally insulated from the hydraulic unit to prevent electronic malfunctions.
- Wall installation template designed for rapid wall-mounting for quicker and easier installation.
- 50/60 Hz operation.
- VFS 2-40 l/min flow meter with integrated temperature sensor directly controlled from the standard electronic controller which, combined with the PWM2-controlled electronic pump on the primary, ensures maximum efficiency of the solar system.
- Primary circuit equipped with:
 - solar fluid inlet with DN20 1" M – 3/4" F ball valve with red handle and thermometer
 - check valve
 - manual relief valve
 - 2 fill/drain valves, VFS 2-40 l/min flow and temperature sensor
 - pressure gauge
 - class A low-consumption pump
 - outlet with DN20 1" M – 3/4" F ball valve with blue handle and thermometer
 - safety valve with 6 bar calibration.
- Wilo Yonos PARA ST 15/7.5 primary low-consumption pump (ErP ready 2015) directly controlled from the on-board electronic controller through PWM2 signal, max. head 7.6 m, max. flow rate 4000 l/h, suitable for water-glycol mixtures.
- Secondary circuit equipped with:
 - technical water inlet with DN20 1" M – 3/4" F ball valve with blue handle
 - low-consumption pump ErP ready 2015
 - check valve
 - motorised diverter valve
 - technical water outlet with 2 DN20 1" M – 3/4" F ball valves with red handles.
- Wilo Yonos PARA RS 15/7.0 secondary low-consumption pump (ErP ready 2015) directly controlled from the on-board electronic controller through PWM1 signal, max. head 7.2 m, max. flow rate 3300 l/h.
- Electronic weather compensator LTDC4 complete with:
 - 6 inputs for Pt1000 temperature sensors
 - 2 inputs for Vortex flow sensors (VFS) for calculating quantity of heat exchanged
 - 3 relay outputs
 - 2 PWM or 0-10 V outputs
 - large user-friendly graphical display
 - simple viewing of the current measured values
 - system analysis and monitoring by means of statistical graphics.
- Operating temperature range 2-110 °C
- Electrical protection rating IP40.

SOLAR THERMAL

Solar heat exchangers

SC SUN 120 – SC SUN 120 DHW

PRODUCT DESCRIPTION FOR SPECIFICATIONS

SC SUN 120 is a separation module with a plate heat exchanger designed to supply energy to 2 puffers or to 2 different charge heights. SC SUN 120 DHW is a heat exchange module for DHW production designed to supply DHW to 2 tanks or to 2 different charge heights. Heat exchange modules are designed to use a solar thermal system with collector array.

UNIT SPECIFICATIONS

- Maximum operating pressure 10 bar.
- Fully insulated AISI 316 stainless steel braze welded plate heat exchanger, 52 kW power exchanged and 120 m² solar system coverage (40 l/min nominal flow rate on primary).
- Black EPP thermal insulation with a density of 40 g/l, with the controller thermally insulated from the hydraulic unit to prevent electronic malfunctions.
- Wall installation template designed for rapid wall-mounting for quicker and easier installation.
- 50/60 Hz operation.
- Primary circuit equipped with:
 - solar delivery with DN25 1" F ball valve with red handle
 - 2 x 1/2" fill-drain valves
 - flow regulator with 10 – 40 l/min calibration range
 - check valve
 - class A low-consumption pump
 - solar return with DN25 1" F ball valve with blue handle and thermometer
 - expansion vessel connection pipe
 - 0–10 bar pressure gauge
 - solar safety valve with 6 bar calibration.
- Wilo Yonos PARA 25/1-11 primary low-consumption pump (ErP ready 2015) directly controlled from the on-board electronic controller through 0–10 V signal, max. head 11 m, max. flow rate 4500 l/h, suitable for water-glycol mixtures.
- Secondary circuit equipped with:
 - technical water (or DCW) inlet with DN25 1" F 3-way ball valve with blue handle and thermometer
 - technical water (or DCW) circuit safety valve 6 bar
 - class A low-consumption pump
 - 2 x 1/4" manual relief valves
 - flow rate and temperature sensor VFS 5 – 100 l/min
 - Robocal air vent
 - sensor sheath
 - check valve
 - motorised diverter valve
 - technical water (or DHW) outlet with 2 DN25 1" F ball valves with red handles.
- Wilo Yonos PARA RS 15/7.0 (SC SUN 120) and Wilo Yonos PARA Z 15/7.0 (SC SUN 120 DHW) secondary low-consumption pump (ErP ready 2015) directly controlled from the on-board electronic controller through PWM1 signal, max. head 7.2 m, max. flow rate 3300 l/h.
- Electronic weather compensator LTDC4 complete with:
 - 6 inputs for Pt1000 temperature sensors
 - 2 inputs for Vortex flow sensors (VFS) for calculating quantity of heat exchanged
 - 3 relay outputs
 - 2 PWM or 0–10 V outputs
 - large user-friendly graphical display
 - simple viewing of the current measured values
 - system analysis and monitoring by means of statistical graphics.
- Operating temperature range 2–110 °C.
- Electrical protection rating IP40.

SC SUN 300**PRODUCT DESCRIPTION FOR SPECIFICATIONS**

SC SUN 300 is a separation module with a plate heat exchanger designed to supply energy to 2 buffers or to 2 different charge heights. Heat exchange modules are designed to use a solar thermal system with collector array.

UNIT SPECIFICATIONS

- Maximum operating pressure 10 bar.
- Fully insulated AISI 316 stainless steel braze welded plate heat exchanger, 129 kW power exchanged and 200 m² solar system coverage (40 l/min nominal flow rate on primary).
- Black EPP thermal insulation with a density of 40 g/l, with the controller thermically insulated from the hydraulic unit to prevent electronic malfunctions.
- Wall installation template designed for rapid wall-mounting for quicker and easier installation.
- 50/60 Hz operation.
- Primary circuit equipped with:
 - solar delivery with DN25 1" F ball valve with red handle
 - 2 x 1/2" fill-drain valves
 - flow regulator with 10 – 40 l/min calibration range
 - check valve
 - class A low-consumption pump
 - solar return with DN25 1" F ball valve with blue handle and thermometer
 - expansion vessel connection pipe
 - 0–10 bar pressure gauge
 - solar safety valve with 6 bar calibration.
- Wilo Stratos PARA 30/1–12 primary low-consumption solar pump (ErP ready 2015) directly controlled from the on-board electronic controller through 0–10 V signal, max. head 11 m, max. flow rate 6000 l/h, suitable for water-glycol mixtures.
- Secondary circuit equipped with:
 - technical water (or DCW) inlet with DN25 1" F 3-way ball valve with blue handle and thermometer
 - technical water (or DCW) circuit safety valve 6 bar
 - class A low-consumption pump
 - 2 x 1/4" manual relief valves
 - flow rate and temperature sensor VFS 5 – 100 l/min
 - Robocal air vent
 - sensor sheath
 - check valve
 - motorised diverter valve
 - technical water (or DHW) outlet with 2 DN25 1" F ball valves with red handles.
- Wilo Stratos PARA 30/1–8 secondary low-consumption pump (ErP ready 2015) directly controlled from the on-board electronic controller through PWM1 signal, max. head 8 m, max. flow rate 6000 l/h.
- Electronic weather compensator LTDC4 complete with:
 - 6 inputs for Pt1000 temperature sensors
 - 2 inputs for Vortex flow sensors (VFS) for calculating quantity of heat exchanged
 - 3 relay outputs
 - 2 PWM or 0–10 V outputs
 - large user-friendly graphical display
 - simple viewing of the current measured values
 - system analysis and monitoring by means of statistical graphics.
- Operating temperature range 2–110 °C.
- Electrical protection rating IP40.

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SC SUN

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