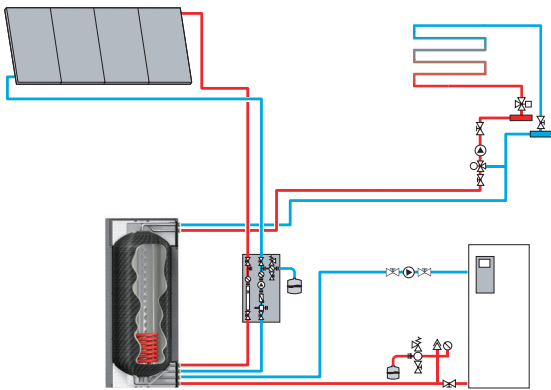


Roth heat storage tanks

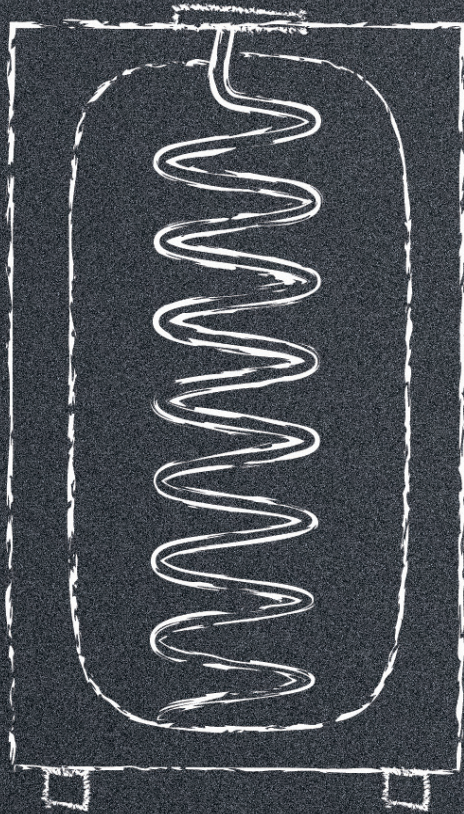
Thermotank Quadroline

System hydraulics



Thermotank Quadroline

The new generation of plastic storage equipment



Thermotank Quadroline with Roth heat pumps

Page 4 - 13

AuraModul E^x E air/water heat pumps for installation outdoors

Page 4 - 5

AuraCompact E^x air/water heat pumps for installation indoors

Page 6 - 7

TerraCompact E^x brine/water heat pumps

Page 8 - 11

TerraCompact E^x brine/water heat pumps with intermediate exchanger as a water/water heat pump

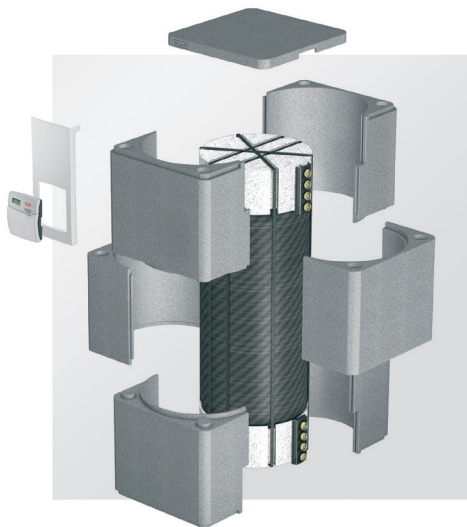
Page 12 - 13

Thermotank Quadroline with oil-fired/gas-fired/pellet boiler

Page 14 - 19

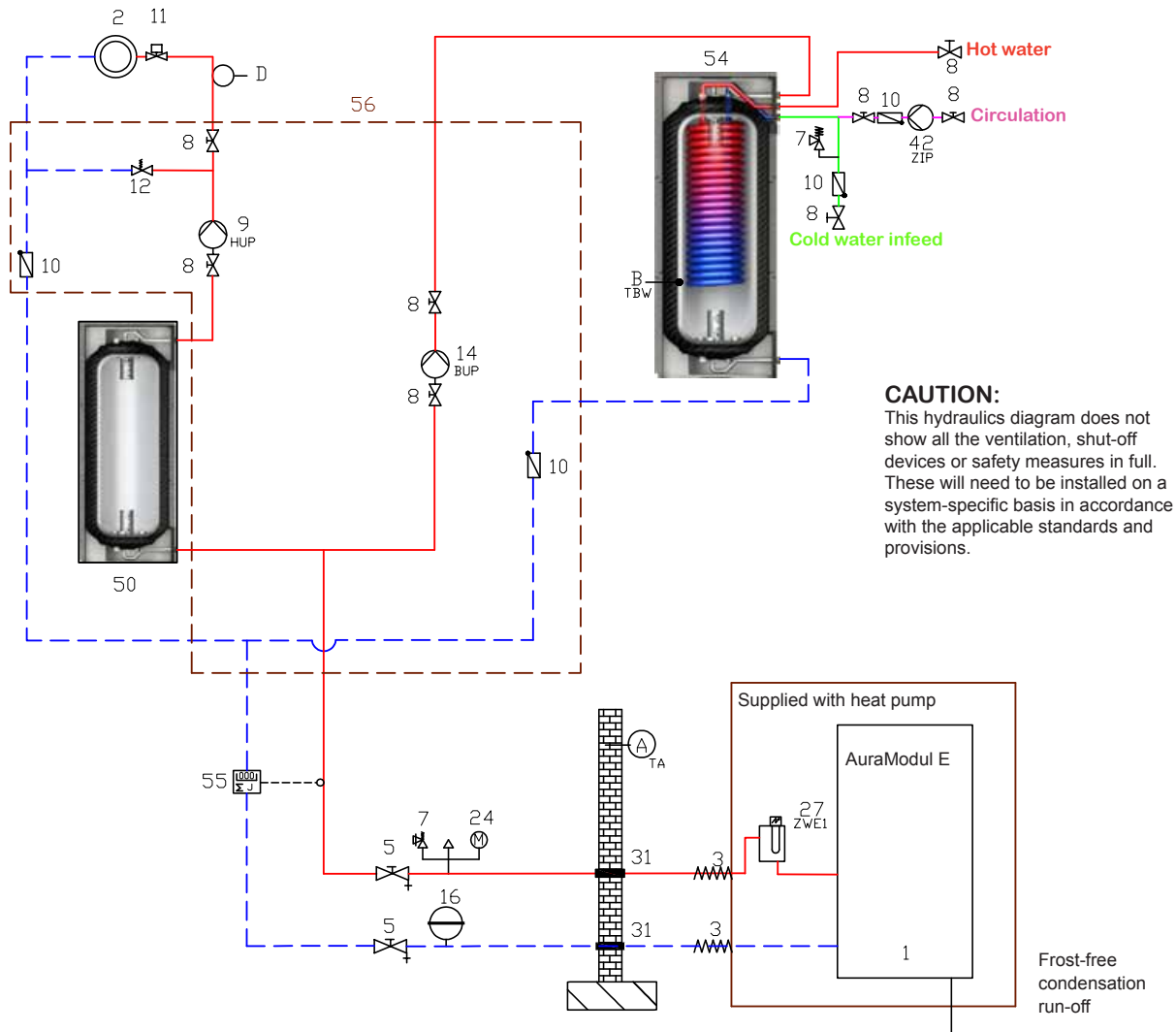
Thermotank Quadroline with wood boiler

Page 20 - 22



Hydraulic integration of Thermotank Quadroline

AuraModul E^x air/water for installation outdoors 8 to 17 kW E
1 heating circuit, H-BW, TQ-TW, TQ-P connection set



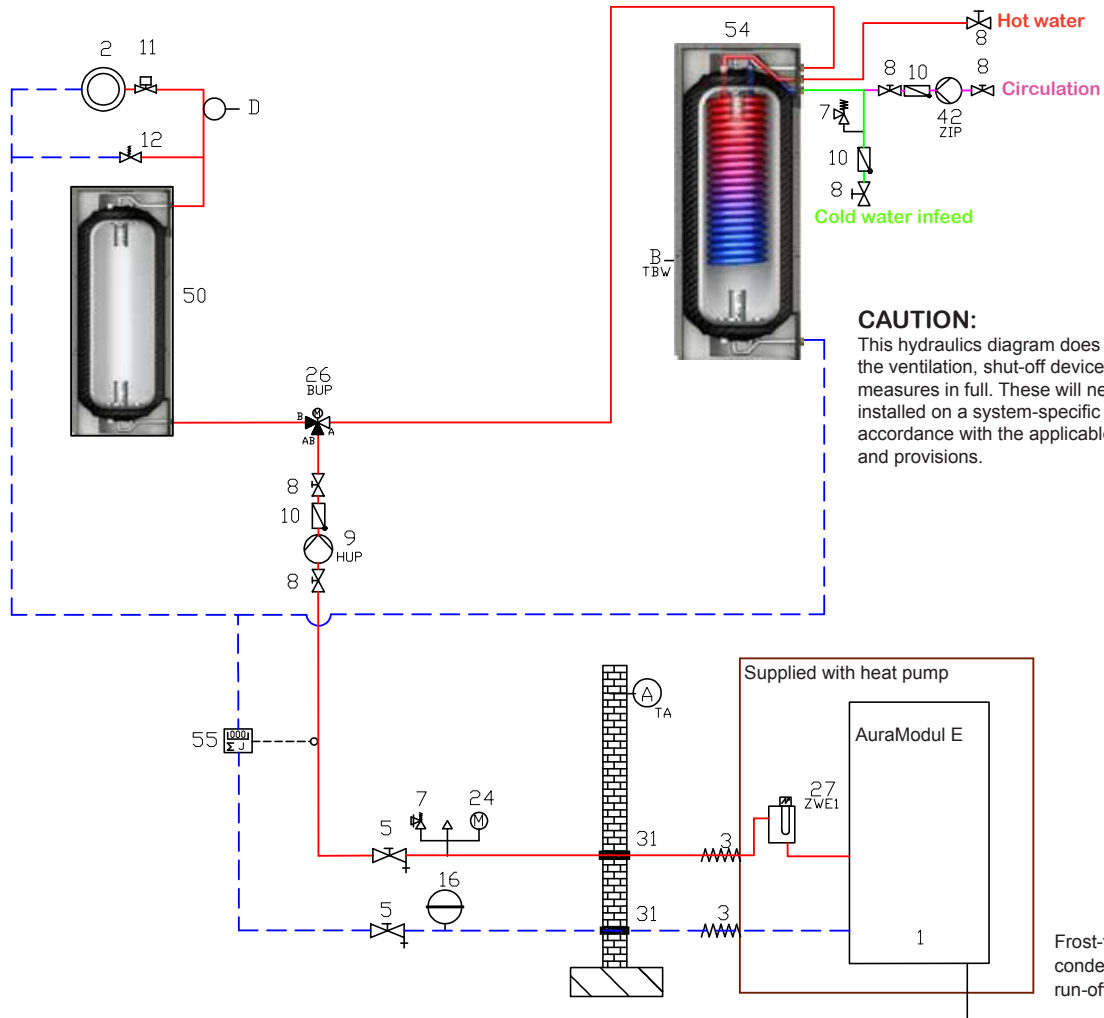
CAUTION:
This hydraulics diagram does not show all the ventilation, shut-off devices or safety measures in full. These will need to be installed on a system-specific basis in accordance with the applicable standards and provisions.

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> 1) Heat pump 2) Floor heating/Radiators 3) Vibration decoupling (flexible hoses or compensators) 4) Mat under device (Sylomer strips) 5) Shut-off valve with drainage facility 6) Expansion tank, already provided 7) Safety valve 8) Shut-off device 9) Heating circulation pump HUP 10) Non-return valve 11) Individual room control/Thermostat valve 12) Differential-pressure bypass valve 13) Insulation (prevents diffusion of water vapour) 14) Domestic hot water circulation pump BUP | <ul style="list-style-type: none"> 15) Mixed circuit, 3-way valve 16) Expansion tank, provided by client 24) Manometer 26) Domestic hot water cross-over valve BUP 27) Heating element for heating + domestic hot water 29) Dirt trap, mesh size 0,5 mm 30) Collecting vessel for brine mixture 31) Wall duct 43) Brine/water heat exchanger (passive cooling) 44) 3-way mixer-valve (passive cooling) 45) Cap valve 46) Filling and drainage valve 50) Buffer storage tank TQ-P 54) Domestic hot water storage tank TQ-TW | <ul style="list-style-type: none"> 55) Heat meter (optional) 56) Roth H-BW DN25 or DN32 connection set <p>A) External sensor TA
B) Domestic hot water sensor TBW
D) Floor temperature limiter</p> <p>All pipe cross sections must reflect the minimum water flow rate for the heat pump!
The heat exchanger surface for the domestic hot water storage tank must be adapted to suit the heat output of the heat pump!</p> |
|---|--|---|

Hydraulic integration of Thermotank Quadroline

AuraModul E^x air/water for installation outdoors 8 to 17 kW E

1 heating circuit, TQ-P buffer storage tank, TQ-TW domestic hot water provision



CAUTION:
This hydraulics diagram does not show all the ventilation, shut-off devices or safety measures in full. These will need to be installed on a system-specific basis in accordance with the applicable standards and provisions.

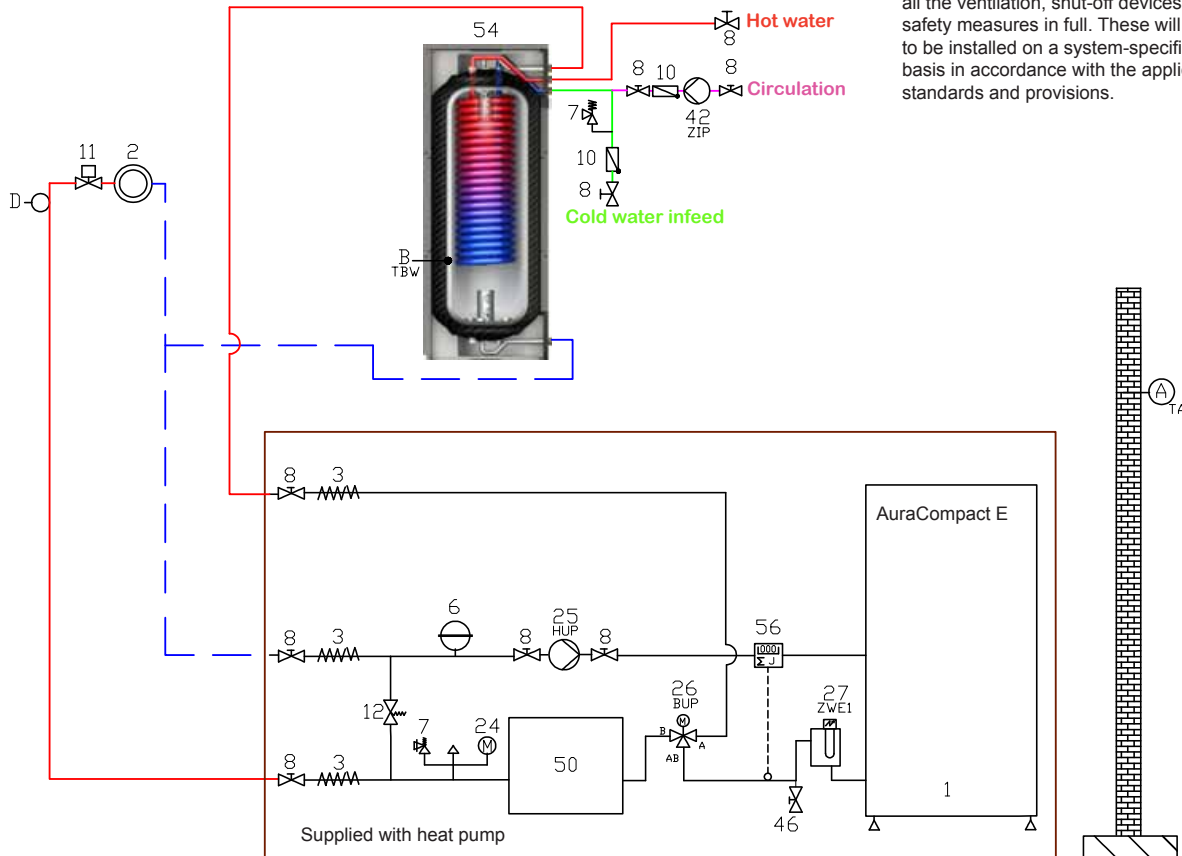
- | | | |
|--|--|--|
| <ul style="list-style-type: none"> 1) Heat pump 2) Floor heating/Radiators 3) Vibration decoupling (flexible hoses or compensators) 4) Mat under device (Sylomer strips) 5) Shut-off valve with drainage facility 6) Expansion tank, already provided 7) Safety valve 8) Shut-off device 9) Heating circulation pump HUP 10) Non-return valve 11) Individual room control/Thermostat valve 12) Differential-pressure bypass valve 13) Insulation (prevents diffusion of water vapour) 14) Domestic hot water circulation pump BUP 16) Expansion tank, provided by client 21) Mixed circuit, circulation pump FP1 24) Manometer 25) Heating + domestic hot water circulation pump HUP | <ul style="list-style-type: none"> 26) Domestic hot water cross-over valve BUP 27) Heating element for heating + domestic hot water 28) Brine circulation pump VBO 29) Dirt trap, mesh size 0,5 mm 30) Collecting vessel for brine mixture 31) Wall duct 41) Flush fitting, heating circuit 42) Circulation pump ZIP 42) Brine/water heat exchanger (passive cooling) 44) 3-way mixer-valve (passive cooling) 45) Cap valve 46) Filling and drainage valve 47) Swimming pool provision cross-over valve SUP 48) Additional second heat source ZWE2 with extension PCB ZWE3 | <ul style="list-style-type: none"> 50) Buffer storage tank TQ-P 51) Separation storage tank 54) Domestic hot water storage tank TQ-TW 55) Heat meter (optional), incl. supply line sensor <p>A) External sensor TA
B) Domestic hot water sensor TBW
D) Floor temperature limiter</p> <p>All pipe cross sections must reflect the minimum water flow rate for the heat pump!
The heat exchanger surface for the domestic hot water storage tank must be adapted to suit the heat output of the heat pump!</p> |
|--|--|--|

Hydraulic integration of Thermotank Quadroline

AuraCompact P E^x air/water for installation indoors 8 kW
1 heating circuit, TQ-TW

CAUTION:

This hydraulics diagram does not show all the ventilation, shut-off devices or safety measures in full. These will need to be installed on a system-specific basis in accordance with the applicable standards and provisions.



- 1) Heat pump
- 2) Floor heating/Radiators
- 3) Vibration decoupling (flexible hoses)
- 5) Shut-off valve with drainage facility
- 6) Expansion tank, already provided
- 7) Safety valve
- 8) Shut-off device
- 10) Non-return valve
- 11) Individual room control/Thermostat valve
- 12) Differential-pressure bypass valve
- 24) Manometer
- 25) Heating + domestic hot water circulation pump HUP

- 26) Domestic hot water cross-over valve BUP
- 27) Heating element for heating + domestic hot water
- 42) Circulation pump ZIP
- 45) Cap valve
- 46) Filling and drainage valve
- 50) Buffer storage tank
- 54) Domestic hot water storage tank
- 56) Heat meter

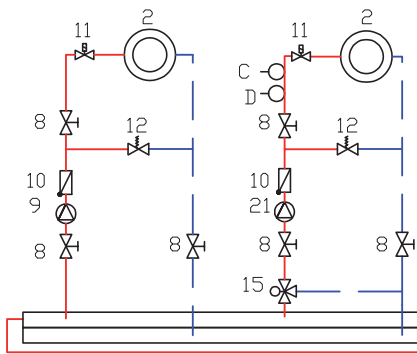
- A) External sensor TA
- B) Domestic hot water sensor TBW
- D) Floor temperature limiter

All pipe cross sections must reflect the minimum water flow rate for the heat pump! The heat exchanger surface for the domestic hot water storage tank must be adapted to suit the heat output of the heat pump!

Hydraulic integration of Thermotank Quadroline

AuraCompact P E^x air/water for installation indoors 8 kW

Separation storage tank, 2 heating circuits, TQ-TW domestic hot water provision

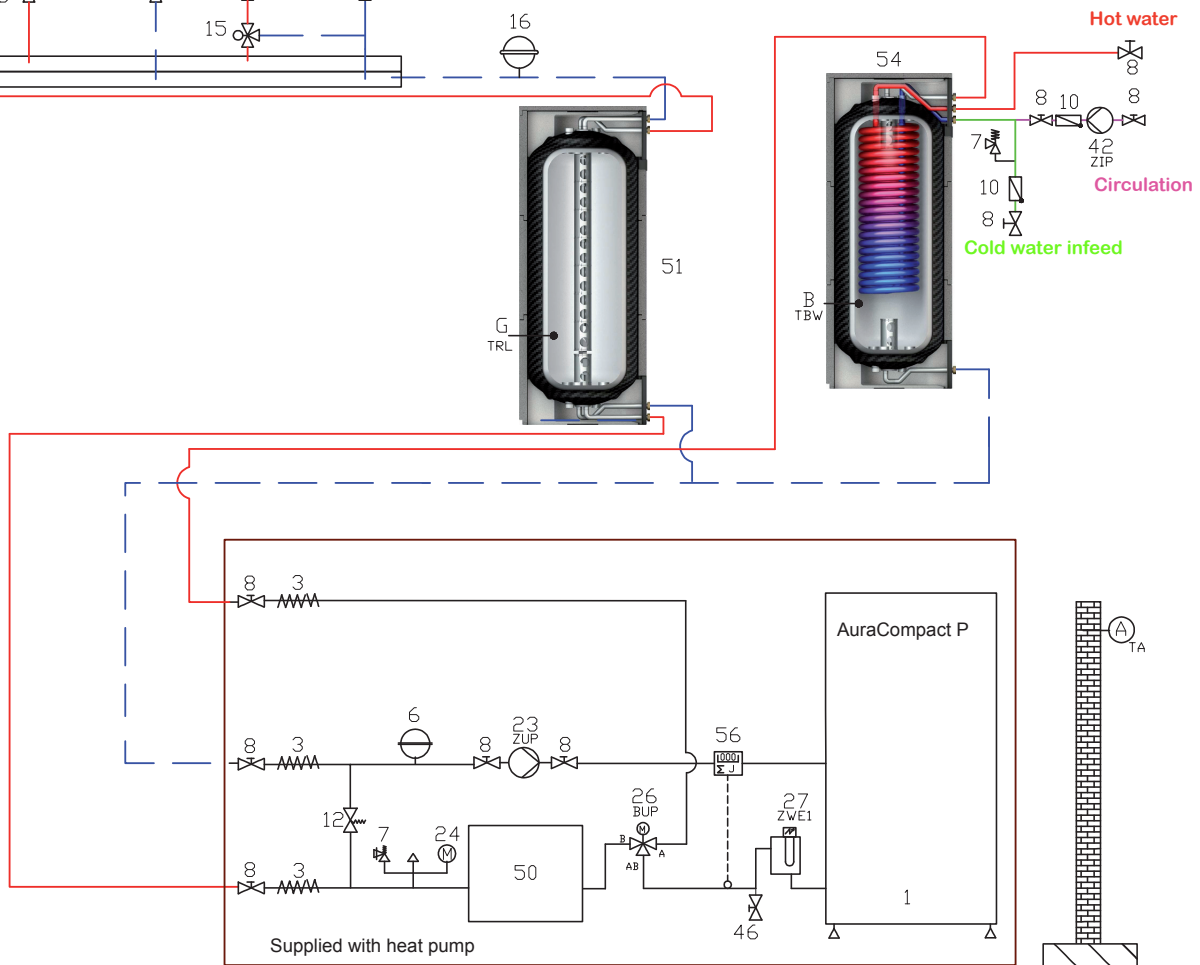


CAUTION:

If an electrically controlled pump is used for the heating pump (no. 9) or the floor heating pump (no. 21), there is no need for a differential-pressure bypass valve (no. 12) in the heating circuits.

CAUTION:

This hydraulics diagram does not show all the ventilation, shut-off devices or safety measures in full. These will need to be installed on a system-specific basis in accordance with the applicable standards and provisions.



- 1) Heat pump
- 2) Floor heating/Radiators
- 3) Vibration decoupling (flexible hoses)
- 5) Shut-off valve with drainage facility
- 6) Expansion tank, already provided
- 7) Safety valve
- 8) Shut-off device
- 9) Heating circulation pump HUP
- 10) Non-return valve
- 11) Individual room control/Thermostat valve
- 12) Differential-pressure bypass valve
- 13) Insulation (prevents diffusion of water vapour)
- 15) Mixed circuit, 3-way valve MA1 and MZ1
- 16) Expansion tank, provided by client

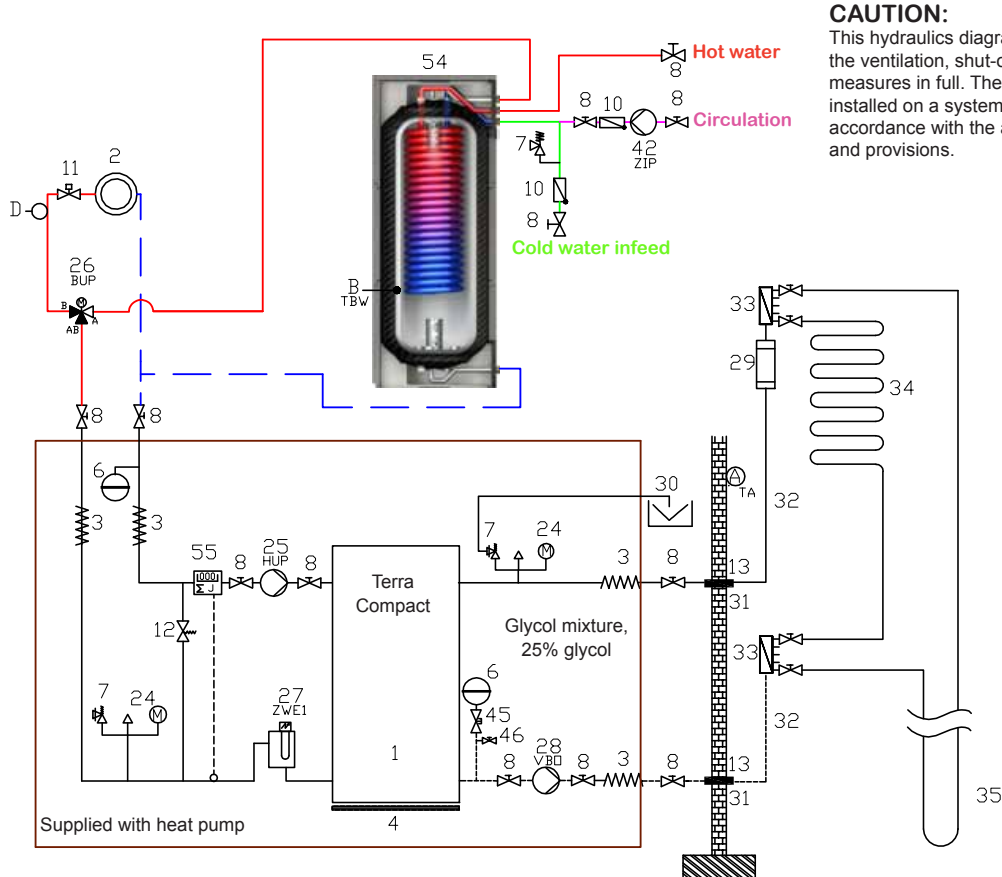
- 21) Mixed circuit, circulation pump FP1
- 23) Feeder, circulation pump (ZUP)
- 24) Manometer
- 26) Domestic hot water cross-over valve BUP
- 27) Heating element for heating + domestic hot water ZW1
- 42) Circulation pump ZIP
- 45) Cap valve
- 46) Filling and drainage valve
- 50) Buffer storage tank
- 51) Separation storage tank TQ-T
- 54) Domestic hot water storage tank TQ-TW
- 56) Heat meter

- A) External sensor TA
- B) Domestic hot water sensor TBW
- C) Inlet sensor mixed circuit 1 TB1
- D) Floor temperature limiter
- G) Sensor for external return TRL

All pipe cross sections must reflect the minimum water flow rate for the heat pump! The heat exchanger surface for the domestic hot water storage tank must be adapted to suit the heat output of the heat pump!

Hydraulic integration of Thermotank Quadroline

TerraCompact E^x brine/water 6 to 17 kW
1 heating circuit, TQ-TW



CAUTION:

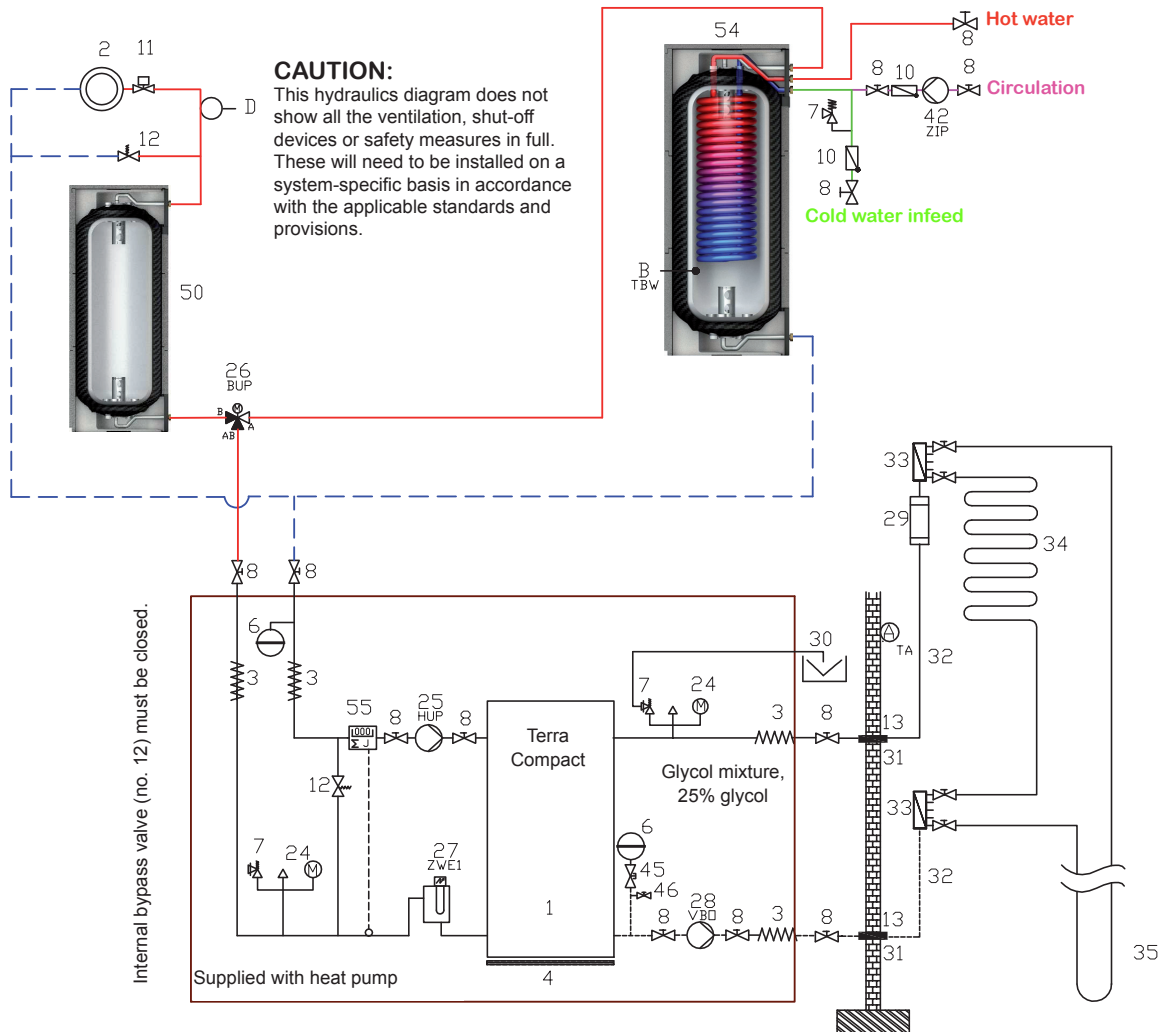
This hydraulics diagram does not show all the ventilation, shut-off devices or safety measures in full. These will need to be installed on a system-specific basis in accordance with the applicable standards and provisions.

- | | | |
|--|--|---|
| <ul style="list-style-type: none"> 1) Heat pump 2) Floor heating/Radiators 3) Vibration decoupling (flexible hoses or compensators) 4) Mat under device (Sylomer strips) 5) Shut-off valve with drainage facility 6) Expansion tank, already provided 7) Safety valve 8) Shut-off device 9) Heating circulation pump HUP 10) Non-return valve 11) Individual room control/Thermostat valve 12) Differential-pressure bypass valve 13) Prevents diffusion of water vapour 14) Domestic hot water circulation pump BUP 15) Mixed circuit, 3-way valve 16) Expansion tank, provided by client 17) Solar circulation pump SLP 18) Heating element for heating 19) Mixed circuit, 4-way valve 20) Heating element for domestic hot water 21) Mixed circuit, circulation pump FP1 22) Swimming pool circulation pump SUP 23) Feeder, circulation pump (ZUP) 24) Manometer 25) Heating + domestic hot water circulation pump HUP | <ul style="list-style-type: none"> 26) Domestic hot water cross-over valve BUP 27) Heating element for heating + domestic hot water 28) Brine circulation pump VBO 29) Dirt trap, mesh size 1 mm 30) Collecting vessel for brine mixture 31) Wall duct 32) Supply pipe 33) Brine distributor 34) Collection pipe 35) Geothermal probe 36) Well pump (corrosion-resistant immersion pump) 37) Thermostat 0 °C-16 °C 38) Flow switch 39) Suction well 40) Production well 41) Flush fitting, heating circuit 42) Circulation pump ZIP 43) Brine/water heat exchanger (passive cooling) 44) 3-way mixer-valve (passive cooling) 45) Cap valve 46) Filling and drainage valve 47) Swimming pool provision cross-over valve SUP 48) Additional second heat source ZWE2 with extension PCB ZWE3 49) Flow direction of ground water | <ul style="list-style-type: none"> 50) Buffer storage tank 51) Separation storage tank 52) Gas-fired or oil-fired boiler 53) Wood boiler 54) Domestic hot water storage tank 55) Heat meter |
|--|--|---|
-
- | |
|---|
| <ul style="list-style-type: none"> A) External sensor TA B) Domestic hot water sensor TBW C) Inlet sensor mixed circuit 1 TB1 D) Inlet sensor mixed circuit 2 TB2 E) Floor temperature limiter F) Sensor for solar system storage tank TSS G) Sensor for solar system collector TSK H) Sensor for external energy source TEE I) Sensor for external return TRL |
|---|
- All pipe cross sections must reflect the minimum water flow rate for the heat pump!
The heat exchanger surface for the domestic hot water storage tank must be adapted to suit the heat output of the heat pump!

Hydraulic integration of Thermotank Quadroline

TerraCompact E^x brine/water 6 to 17 kW

1 heating circuit, TQ-P buffer storage tank, TQ-TW domestic hot water provision



- 1) Heat pump
- 2) Floor heating/Radiators
- 3) Vibration decoupling (flexible hoses or compensators)
- 4) Mat under device (Sylomer strips)
- 5) Shut-off valve with drainage facility
- 6) Expansion tank, already provided
- 7) Safety valve
- 8) Shut-off device
- 10) Non-return valve
- 11) Individual room control/Thermostat valve
- 12) Differential-pressure bypass valve
- 13) Insulation (prevents diffusion of water vapour)
- 15) Mixed circuit, 3-way valve
- 16) Expansion tank, provided by client
- 24) Manometer
- 25) Heating + domestic hot water circulation pump HUP

- 26) Domestic hot water cross-over valve BUP
- 27) Heating element for heating + domestic hot water
- 28) Brine circulation pump VBO
- 29) Dirt trap, mesh size 1 mm
- 30) Collecting vessel for brine mixture
- 31) Wall duct
- 32) Supply pipe
- 33) Brine distributor
- 34) Collection pipe
- 35) Geothermal probe
- 42) Circulation pump ZIP
- 45) Cap valve
- 46) Filling and drainage valve

- 50) Buffer storage tank
- 54) Domestic hot water storage tank
- 55) Heat meter

- A) External sensor TA
- B) Domestic hot water sensor TBW
- D) Floor temperature limiter

All pipe cross sections must reflect the minimum water flow rate for the heat pump! Depending on the size of the external buffer storage tank, it may be necessary to check whether the internal expansion tank is big enough!!! An extra one may need to be installed externally if necessary. The heat exchanger surface for the domestic hot water storage tank must be adapted to suit the heat output of the heat pump!

TQ 13-A-01 / 16.10.2012

Hydraulic integration of Thermotank Quadroline

TerraCompact E^x brine/water 6 to 17 kW

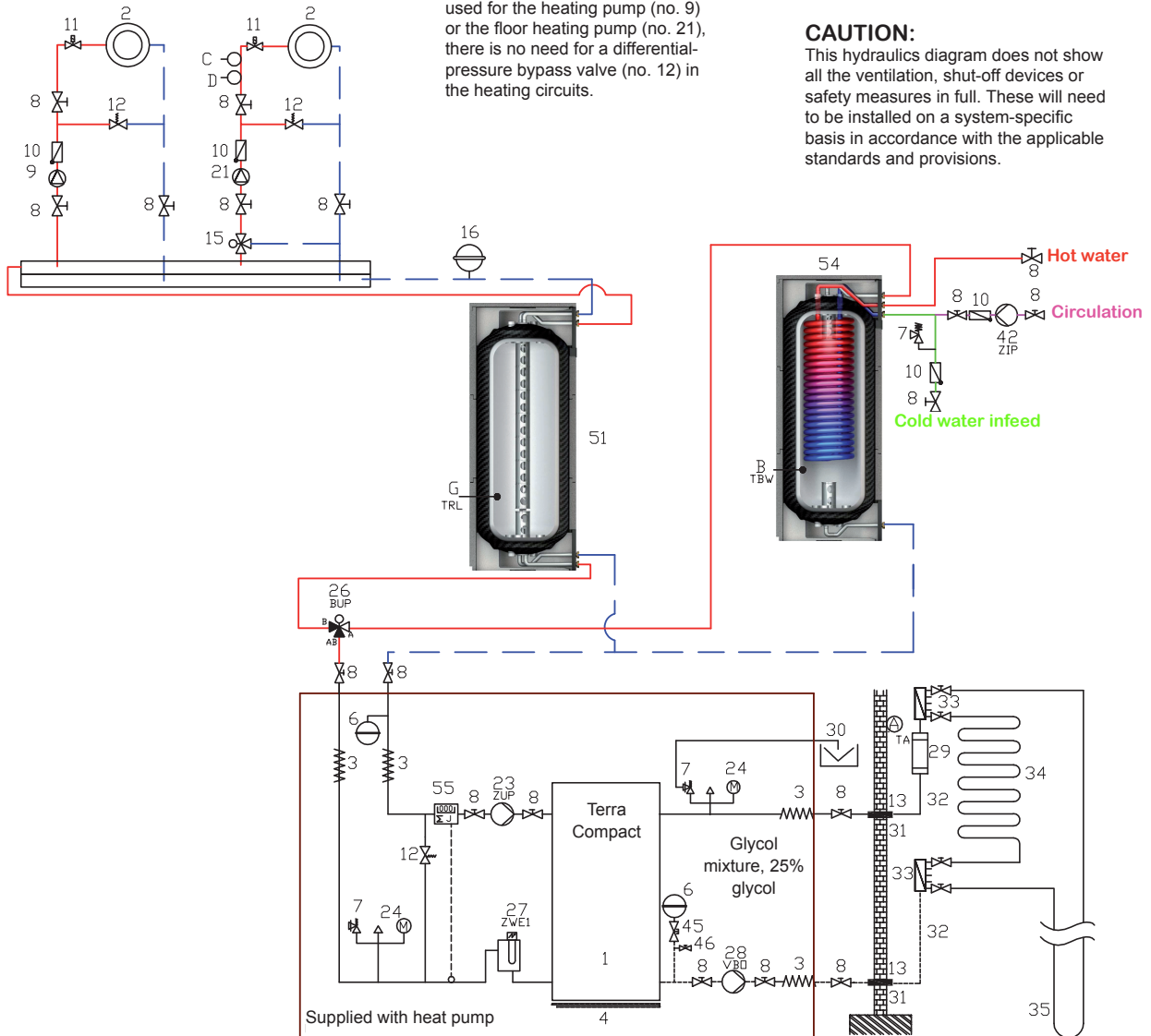
TQ-T separation storage tank, 2 heating circuits, TQ-TW domestic hot water provision

CAUTION:

If an electrically controlled pump is used for the heating pump (no. 9) or the floor heating pump (no. 21), there is no need for a differential-pressure bypass valve (no. 12) in the heating circuits.

CAUTION:

This hydraulics diagram does not show all the ventilation, shut-off devices or safety measures in full. These will need to be installed on a system-specific basis in accordance with the applicable standards and provisions.



- | | | |
|--|--|---|
| 1) Heat pump | 26) Domestic hot water cross-over valve BUP | 51) Separation storage tank TQ-T |
| 2) Floor heating/Radiators | 27) Heating element for heating + domestic hot water | 54) Domestic hot water storage tank TQ-TW |
| 3) Vibration decoupling (flexible hoses or compensators) | 28) Brine circulation pump VBO | 55) Heat meter |
| 4) Mat under device (Sylomer strips) | 29) Dirt trap, mesh size 1 mm | |
| 5) Shut-off valve with drainage facility | 30) Collecting vessel for brine mixture | |
| 6) Expansion tank, already provided | 31) Wall duct | |
| 7) Safety valve | 32) Supply pipe | |
| 8) Shut-off device | 33) Brine distributor | |
| 9) Heating circulation pump HUB | 34) Collection pipe | |
| 10) Non-return valve | 35) Geothermal probe | |
| 11) Individual room control/Thermostat valve | | |
| 12) Differential-pressure bypass valve | | |
| 13) Insulation (prevents diffusion of water vapour) | | |
| 15) Mixed circuit, 3-way valve | | |
| 16) Expansion tank, provided by client | | |
| 21) Mixed circuit, circulation pump FP1 | | |
| 23) Feeder, circulation pump (ZUP) | | |
| 24) Manometer | | |
- A) External sensor TA
 B) Domestic hot water sensor TBW
 C) Inlet sensor mixed circuit 1 TB1
 D) Floor temperature limiter
 G) Sensor for external return TRL

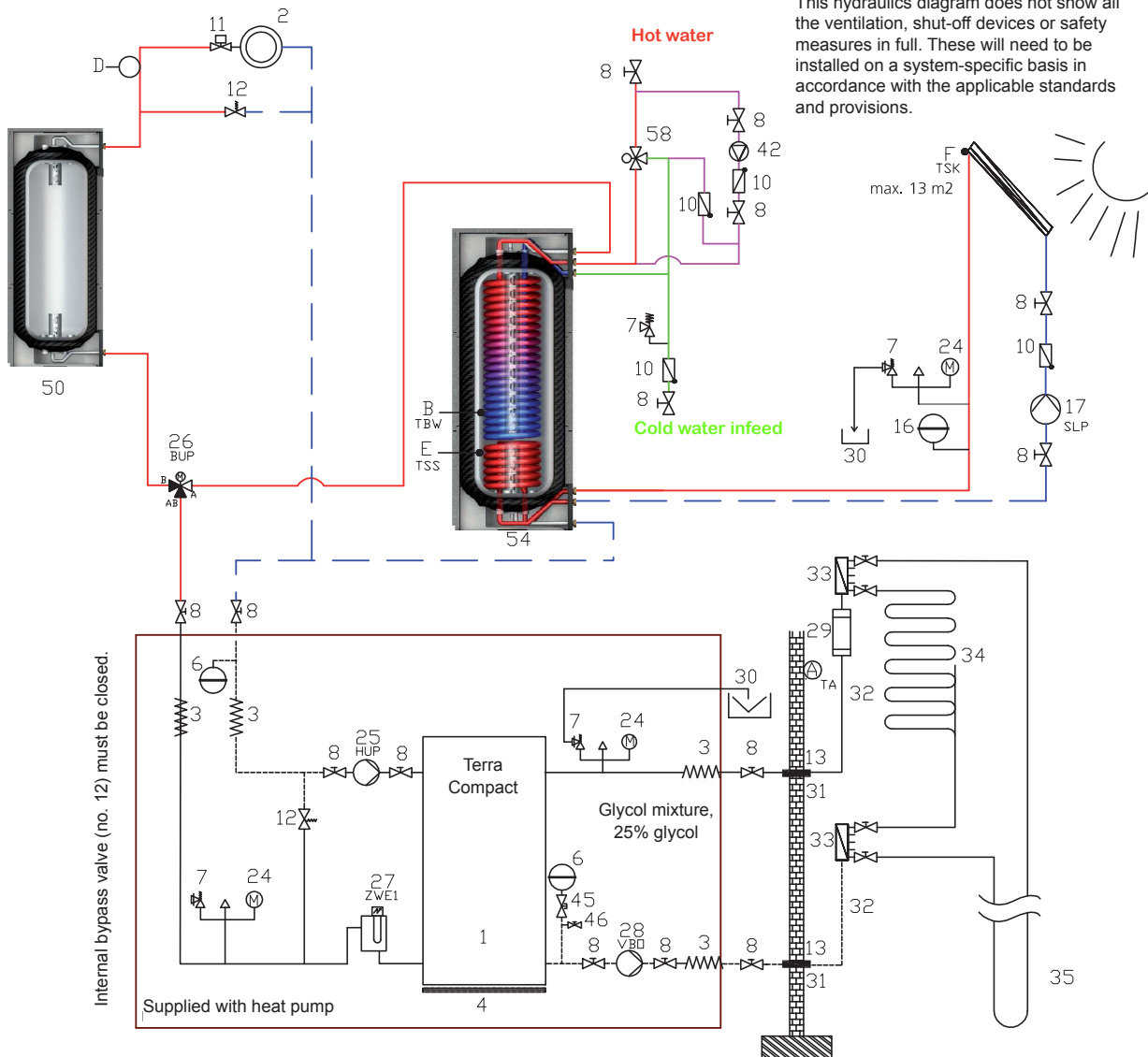
All pipe cross sections must reflect the minimum water flow rate for the heat pump! The heat exchanger surface for the domestic hot water storage tank must be adapted to suit the heat output of the heat pump!

TQ 23-A-01 / 12.09.2012

Hydraulic integration of Thermotank Quadroline

TerraCompact E^x brine/water 6 to 17 kW

1 heating circuit, TQ-P buffer storage tank, TQ-TWS solar for domestic hot water provision only



CAUTION:

This hydraulics diagram does not show all the ventilation, shut-off devices or safety measures in full. These will need to be installed on a system-specific basis in accordance with the applicable standards and provisions.

Internal bypass valve (no. 12) must be closed.

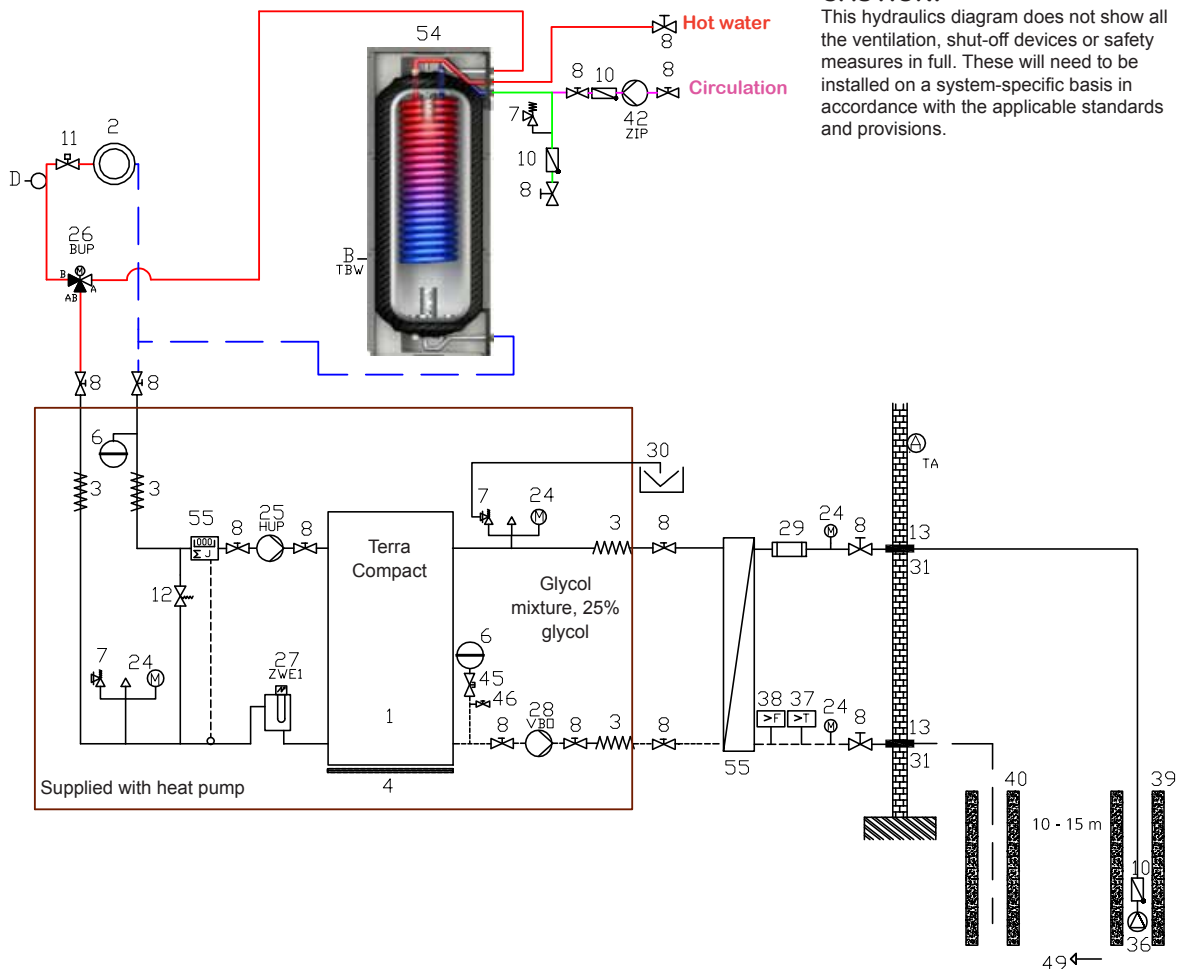
- | | | |
|--|--|---|
| 1) Heat pump | 21) Mixed circuit, circulation pump FP1 | A) External sensor TA |
| 2) Floor heating/Radiators | 24) Manometer | B) Domestic hot water sensor TBW |
| 3) Vibration decoupling (flexible hoses or compensators) | 26) Domestic hot water cross-over valve BUP | C) Inlet sensor mixed circuit 1 TB1 |
| 4) Mat under device (Sylomer strips) | 27) Heating element for heating + domestic hot water | D) Floor temperature limiter |
| 5) Shut-off valve with drainage facility | 28) Brine circulation pump VBO | E) Sensor for solar system storage tank TSS |
| 6) Expansion tank, already provided | 29) Dirt trap, mesh size 1 mm | F) Sensor for solar system collector TSK |
| 7) Safety valve | 30) Collecting vessel for brine mixture | G) Sensor for external return TRL |
| 8) Shut-off device | 31) Wall duct | |
| 9) Heating circulation pump HUP | 32) Supply pipe | |
| 10) Non-return valve | 33) Brine distributor | |
| 11) Individual room control/Thermostat valve | 34) Collector | |
| 12) Differential-pressure bypass valve | 35) Geothermal probe | |
| 13) Insulation (prevents diffusion of water vapour) | 42) Circulation pump ZIP | |
| 15) Mixed circuit, 3-way valve | 45) Cap valve | |
| 16) Expansion tank, provided by client | 46) Filling and drainage valve | |
| 17) Solar circulation pump SLP | 50) Buffer storage tank TQ-P | |
| | 54) Domestic hot water storage tank TQ-K | |

All pipe cross sections must reflect the minimum water flow rate for the heat pump! The heat exchanger surface for the domestic hot water storage tank must be adapted to suit the heat output of the heat pump!

Hydraulic integration of Thermotank Quadroline

TerraCompact E^x brine/water 6 to 17 kW

Intermediate exchanger, 1 heating circuit, TQ-TW



CAUTION:
This hydraulics diagram does not show all the ventilation, shut-off devices or safety measures in full. These will need to be installed on a system-specific basis in accordance with the applicable standards and provisions.

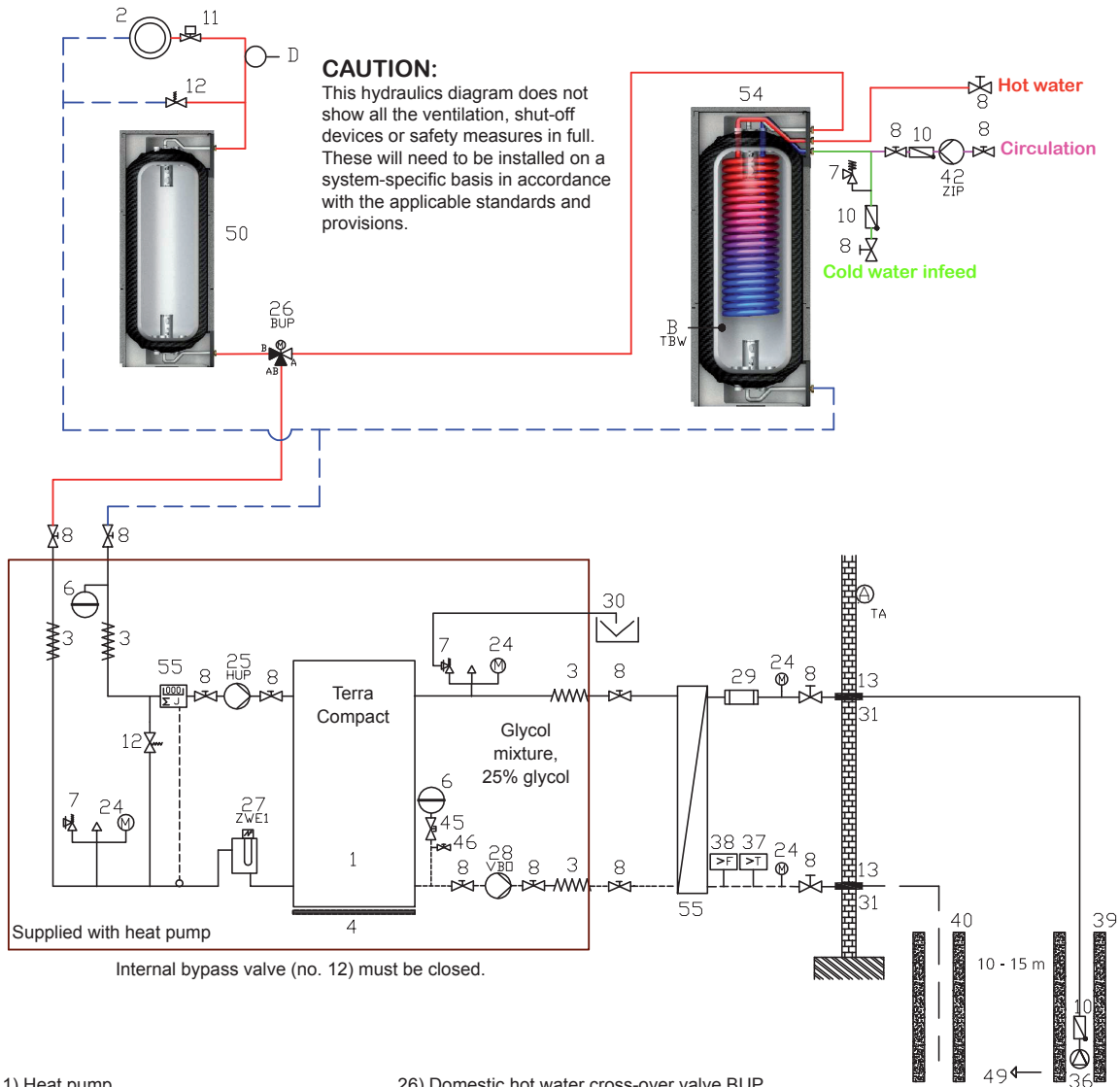
- | | | |
|--|--|--|
| <ul style="list-style-type: none"> 1) Heat pump 2) Floor heating/Radiators 3) Vibration decoupling (flexible hoses or compensators) 4) Mat under device (Sylomer strips) 5) Shut-off valve with drainage facility 6) Expansion tank, already provided 7) Safety valve 8) Shut-off device 9) Heating circulation pump HUP 10) Non-return valve 11) Individual room control/Thermostat valve 12) Differential-pressure bypass valve 13) Insulation (prevents diffusion of water vapour) 15) Mixed circuit, 3-way valve 16) Expansion tank, provided by client 18) Heating element for heating 20) Heating element for domestic hot water 21) Mixed circuit, circulation pump FP1 23) Feeder, circulation pump (ZUP) 24) Manometer 25) Heating + domestic hot water circulation pump HUP | <ul style="list-style-type: none"> 26) Domestic hot water cross-over valve BUP 27) Heating element for heating + domestic hot water 28) Brine circulation pump VBO 29) Dirt trap, mesh size 1 mm 30) Collecting vessel for brine mixture 31) Wall duct 32) Supply pipe 33) Brine distributor 34) Collection pipe 35) Geothermal probe 36) Well pump (corrosion-resistant immersion pump) 37) Thermostat 0 °C-16 °C 38) Flow switch 39) Suction well 40) Production well 42) Circulation pump ZIP 43) Brine/water heat exchanger (passive cooling) 44) 3-way mixer-valve (passive cooling) 45) Cap valve 46) Filling and drainage valve 47) Swimming pool provision cross-over valve SUP 49) Flow direction of ground water | <ul style="list-style-type: none"> 50) Buffer storage tank 51) Separation storage tank 52) Gas-fired or oil-fired boiler 53) Wood boiler 54) Domestic hot water storage tank 55) Heat meter <p>A) External sensor TA
B) Domestic hot water sensor TBW
C) Inlet sensor mixed circuit 1 TB1
D) Floor temperature limiter
G) Sensor for external return TRL</p> <p>All pipe cross sections must reflect the minimum water flow rate for the heat pump! The heat exchanger surface for the domestic hot water storage tank must be adapted to suit the heat output of the heat pump!</p> |
|--|--|--|

TQ 3-D-01 / 12.09.2012

Hydraulic integration of Thermotank Quadroline

TerraCompact E^x brine/water 6 to 17 kW

Intermediate exchanger, 1 heating circuit, TQ-TW domestic water, TQ-P buffer storage tank



- 1) Heat pump
- 2) Floor heating/Radiators
- 3) Vibration decoupling (flexible hoses or compensators)
- 4) Mat under device (Sylomer strips)
- 5) Shut-off valve with drainage facility
- 6) Expansion tank, already provided
- 7) Safety valve
- 8) Shut-off device
- 9) Heating circulation pump HUP
- 10) Non-return valve
- 11) Individual room control/Thermostat valve
- 12) Differential-pressure bypass valve
- 13) Insulation (prevents diffusion of water vapour)
- 15) Mixed circuit, 3-way valve
- 16) Expansion tank, provided by client
- 24) Manometer
- 25) Heating + domestic hot water circulation pump HUP

- 26) Domestic hot water cross-over valve BUP
- 27) Heating element for heating + domestic hot water
- 28) Brine circulation pump VBO
- 29) Dirt trap, mesh size 1 mm
- 30) Collecting vessel for brine mixture
- 31) Wall duct
- 32) Supply pipe
- 36) Well pump (corrosion-resistant immersion pump)
- 37) Thermostat 0 °C-16 °C
- 38) Flow switch
- 39) Suction well
- 40) Production well
- 42) Circulation pump ZIP
- 45) Cap valve
- 46) Filling and drainage valve
- 49) Flow direction of ground water
- 50) Buffer storage tank
- 54) Domestic hot water storage tank
- 55) Heat meter

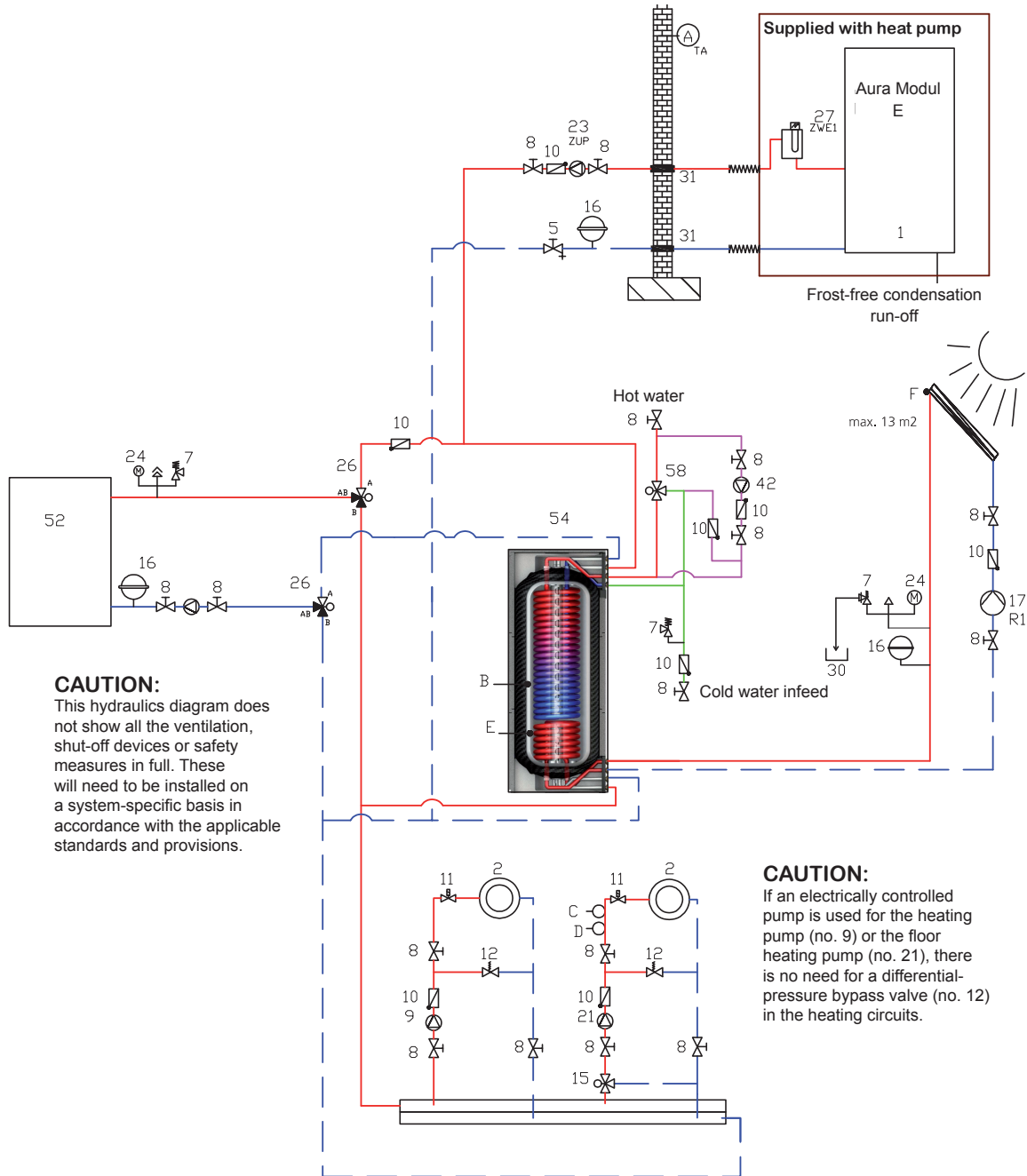
- A) External sensor TA
- B) Domestic hot water sensor TBW
- D) Floor temperature limiter

All pipe cross sections must reflect the minimum water flow rate for the heat pump! Depending on the size of the external buffer storage tank, it may be necessary to check whether the internal expansion tank is big enough!!! An extra one may need to be installed externally if necessary. The heat exchanger surface for the domestic hot water storage tank must be adapted to suit the heat output of the heat pump!

TQ 13-D-01 / 16.10.2012

Hydraulic integration of Thermotank Quadroline

TQ-K, 2 heating circuits, oil-fired boiler, solar, domestic hot water provision, air/water heat pump



CAUTION:
This hydraulics diagram does not show all the ventilation, shut-off devices or safety measures in full. These will need to be installed on a system-specific basis in accordance with the applicable standards and provisions.

CAUTION:
If an electrically controlled pump is used for the heating pump (no. 9) or the floor heating pump (no. 21), there is no need for a differential-pressure bypass valve (no. 12) in the heating circuits.

- 1) Heat pump
- 2) Floor heating/Radiators
- 7) Safety valve
- 8) Shut-off device
- 9) Heating circulation pump
- 10) Non-return valve
- 11) Individual room control/Thermostat valve
- 12) Differential-pressure bypass valve
- 15) Mixed circuit, 3-way valve
- 16) Expansion tank, provided by client
- 17) Solar circulation pump
- 21) Mixed circuit, circulation pump
- 24) Manometer

- 26) Domestic hot water cross-over valve
- 30) Collecting vessel for brine mixture
- 42) Circulation pump
- 45) Cap valve
- 46) Filling and drainage valve
- 54) Combi storage tank TQ-K
- 52) Gas-fired or oil-fired boiler
- 53) Wood boiler
- 58) Domestic hot water mixer

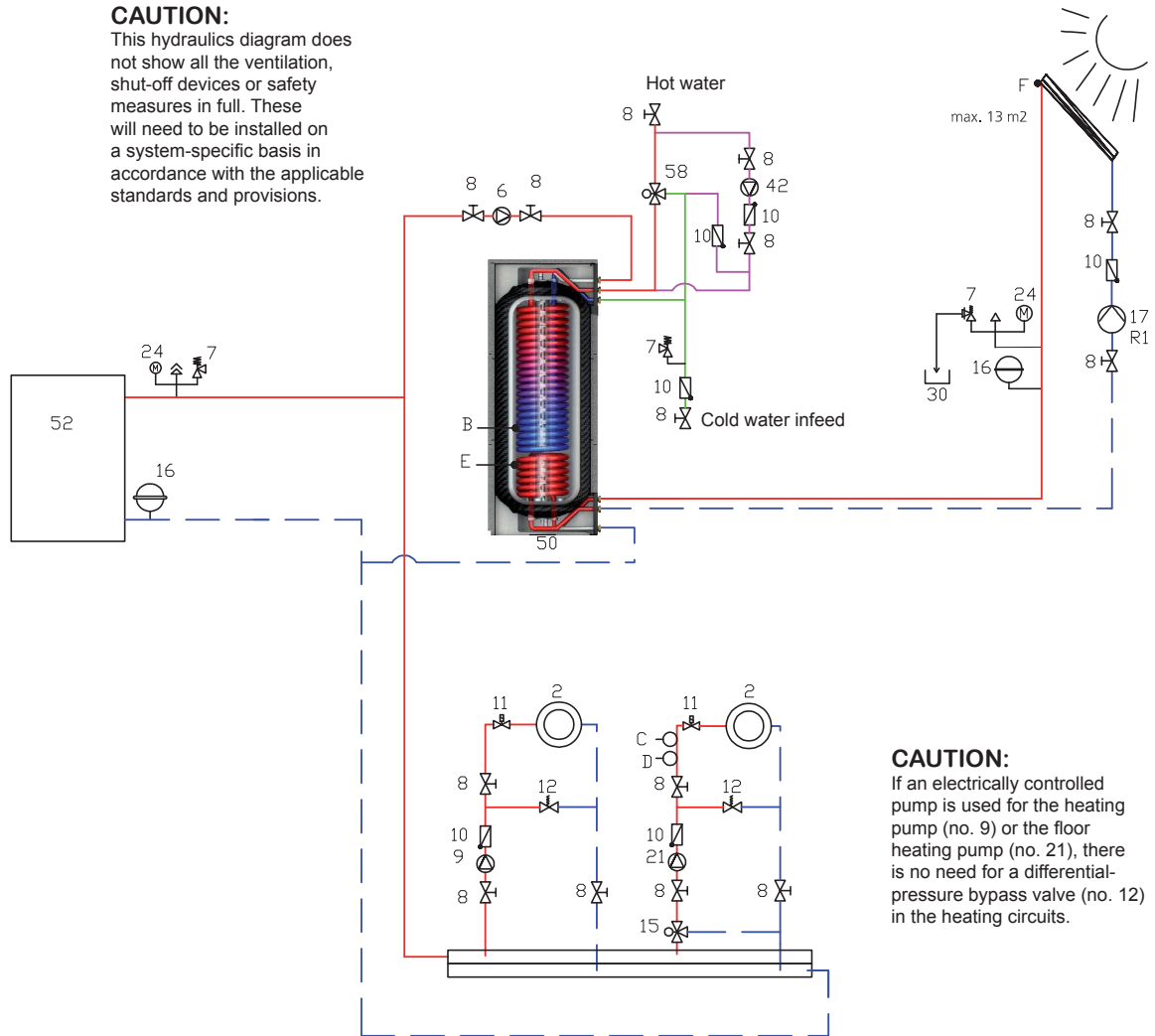
- A) External sensor
- B) Domestic hot water sensor
- C) Inlet sensor mixed circuit
- D) Floor temperature limiter
- E) Sensor for solar system storage tank
- F) Sensor for solar system collector

TQ 5-C-01 / 11.09.2012

Hydraulic integration of Thermotank Quadroline

TQ-TWS as hot water heater with solar, 2 heating circuits, boiler, domestic hot water provision

CAUTION:
This hydraulics diagram does not show all the ventilation, shut-off devices or safety measures in full. These will need to be installed on a system-specific basis in accordance with the applicable standards and provisions.



CAUTION:
If an electrically controlled pump is used for the heating pump (no. 9) or the floor heating pump (no. 21), there is no need for a differential-pressure bypass valve (no. 12) in the heating circuits.

- 1) Heat pump
- 2) Floor heating/Radiators
- 6) Storage tank charging pump
- 7) Safety valve
- 8) Shut-off device
- 9) Heating circulation pump
- 10) Non-return valve
- 11) Individual room control/Thermostat valve
- 12) Differential-pressure bypass valve
- 15) Mixed circuit, 3-way valve
- 16) Expansion tank, provided by client
- 17) Solar circulation pump
- 21) Mixed circuit, circulation pump
- 24) Manometer

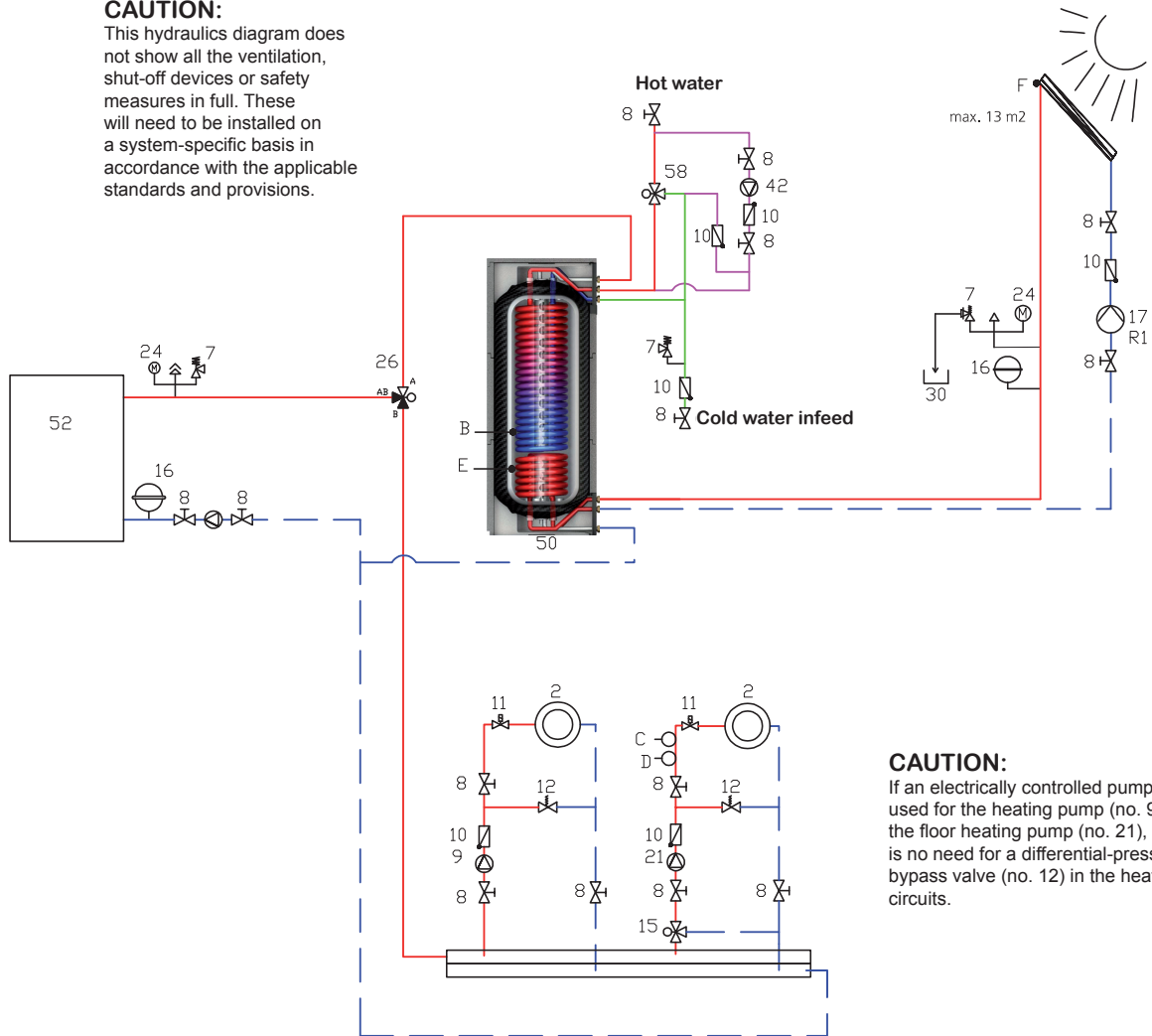
- 26) Domestic hot water cross-over valve
- 30) Collecting vessel for brine mixture
- 42) Circulation pump
- 45) Cap valve
- 46) Filling and drainage valve
- 50) Quadroline
- 52) Gas-fired or oil-fired boiler
- 52) Wood boiler
- 58) Domestic water mixer

- A) External sensor
- B) Domestic hot water sensor
- C) Inlet sensor mixed circuit
- D) Floor temperature limiter
- E) Sensor for solar system storage tank
- F) Sensor for solar system collector

Hydraulic integration of Thermotank Quadroline

TQ-TWS as hot water heater with solar, 2 heating circuits, boiler, domestic hot water provision

CAUTION:
This hydraulics diagram does not show all the ventilation, shut-off devices or safety measures in full. These will need to be installed on a system-specific basis in accordance with the applicable standards and provisions.



CAUTION:
If an electrically controlled pump is used for the heating pump (no. 9) or the floor heating pump (no. 21), there is no need for a differential-pressure bypass valve (no. 12) in the heating circuits.

- 1) Heat pump
- 2) Floor heating/Radiators
- 7) Safety valve
- 8) Shut-off device
- 9) Heating circulation pump
- 10) Non-return valve
- 11) Individual room control/Thermostat valve
- 12) Differential-pressure bypass valve
- 15) Mixed circuit, 3-way valve
- 16) Expansion tank, provided by client
- 17) Solar circulation pump
- 21) Mixed circuit, circulation pump
- 24) Manometer

- 26) Domestic hot water cross-over valve
- 30) Collecting vessel for brine mixture
- 42) Circulation pump
- 45) Cap valve
- 46) Filling and drainage valve
- 50) Quadroline
- 52) Gas-fired or oil-fired boiler
- 53) Wood boiler
- 58) Domestic water mixer

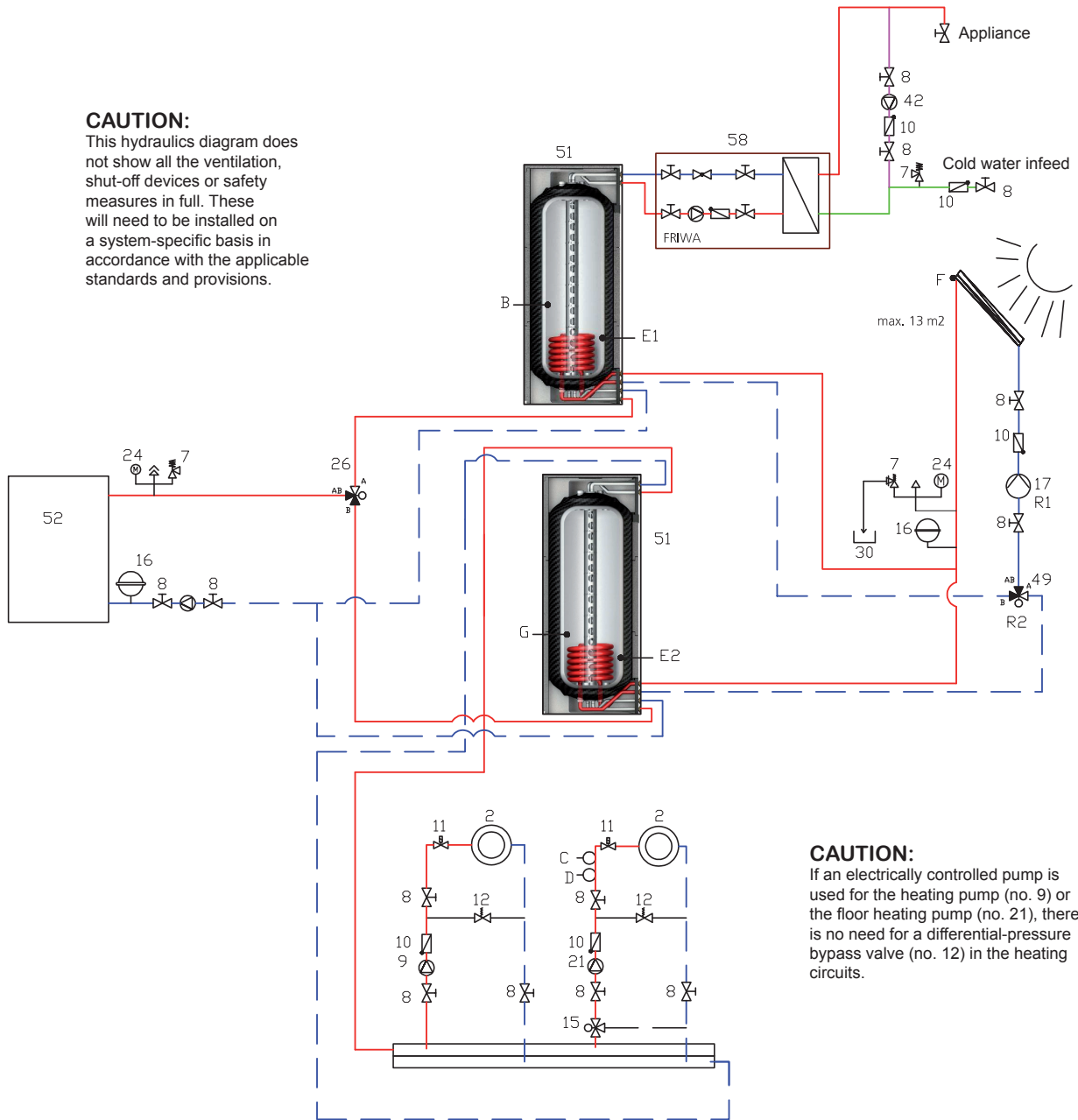
- A) External sensor
- B) Domestic hot water sensor
- C) Inlet sensor mixed circuit
- D) Floor temperature limiter
- E) Sensor for solar system storage tank
- F) Sensor for solar system collector

Hydraulic integration of Thermotank Quadroline

TQ-S as separation storage tank, TQ-S storage tank for fresh water, 2 heating circuits, oil-fired boiler, solar, domestic hot water provision using fresh water

CAUTION:

This hydraulics diagram does not show all the ventilation, shut-off devices or safety measures in full. These will need to be installed on a system-specific basis in accordance with the applicable standards and provisions.



CAUTION:

If an electrically controlled pump is used for the heating pump (no. 9) or the floor heating pump (no. 21), there is no need for a differential-pressure bypass valve (no. 12) in the heating circuits.

- 1) Heat pump
- 2) Floor heating/Radiators
- 7) Safety valve
- 8) Shut-off device
- 9) Heating circulation pump
- 10) Non-return valve
- 11) Individual room control/Thermostat valve
- 12) Differential-pressure bypass valve
- 15) Mixed circuit, 3-way valve
- 16) Expansion tank, provided by client
- 17) Solar circulation pump
- 21) Mixed circuit, circulation pump
- 24) Manometer

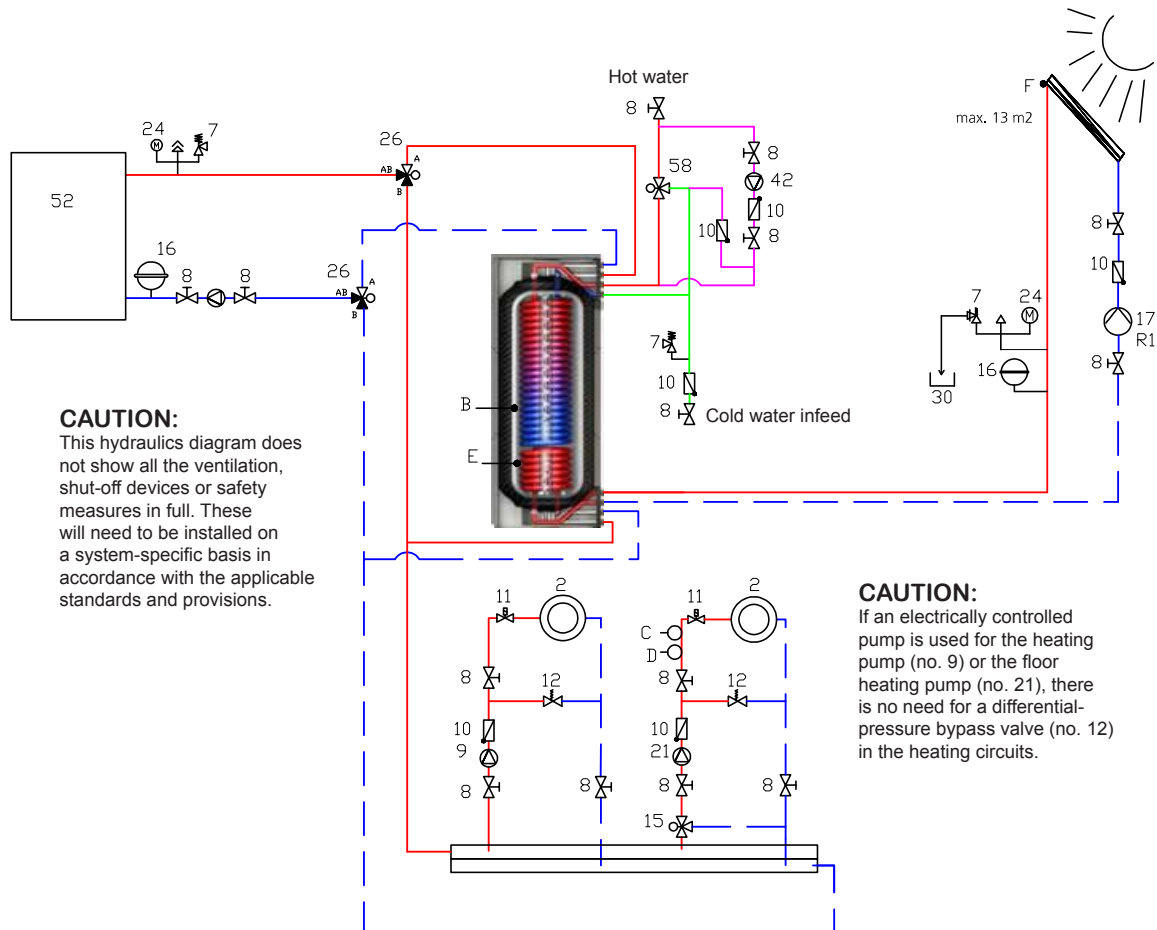
- 26) Domestic hot water cross-over valve
- 30) Collecting vessel for brine mixture
- 42) Circulation pump
- 45) Cap valve
- 46) Filling and drainage valve
- 49) Solar cross-over valve
- 51) Separation storage tank TQ-S
- 52) Gas-fired or oil-fired boiler
- 53) Wood boiler
- 58) Fresh water station

- A) External sensor
- B) Domestic hot water sensor
- C) Inlet sensor mixed circuit
- D) Floor temperature limiter
- E1) Sensor for solar system storage tank 1
- E2) Sensor for solar system storage tank 2
- F) Sensor for solar system collector
- G) Return sensor

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Hydraulic integration of Thermotank Quadroline

TQ-K, 2 heating circuits, boiler, solar, domestic hot water provision



CAUTION:
This hydraulics diagram does not show all the ventilation, shut-off devices or safety measures in full. These will need to be installed on a system-specific basis in accordance with the applicable standards and provisions.

CAUTION:
If an electrically controlled pump is used for the heating pump (no. 9) or the floor heating pump (no. 21), there is no need for a differential-pressure bypass valve (no. 12) in the heating circuits.

- 1) Heat pump
- 2) Floor heating/Radiators
- 7) Safety valve
- 8) Shut-off device
- 9) Heating circulation pump
- 10) Non-return valve
- 11) Individual room control/Thermostat valve
- 12) Differential-pressure bypass valve
- 15) Mixed circuit, 3-way valve
- 16) Expansion tank, provided by client
- 17) Solar circulation pump
- 21) Mixed circuit, circulation pump
- 24) Manometer

- 26) Domestic hot water cross-over valve
- 30) Collecting vessel for brine mixture
- 42) Circulation pump
- 45) Cap valve
- 46) Filling and drainage valve
- 50) Quadroline
- 52) Gas-fired or oil-fired boiler
- 53) Wood boiler
- 58) Domestic water mixer

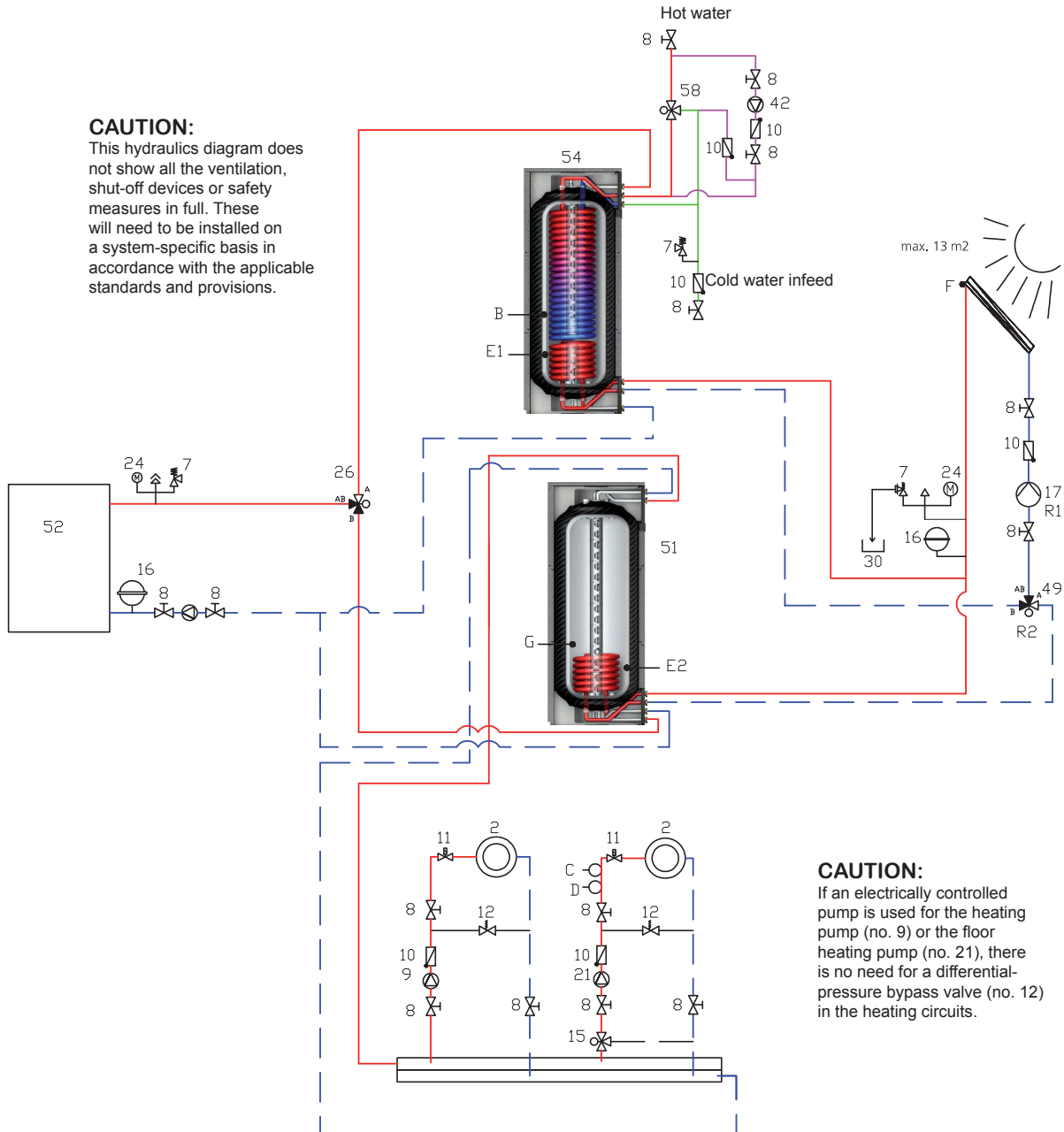
- A) External sensor
- B) Domestic hot water sensor
- C) Inlet sensor mixed circuit
- D) Floor temperature limiter
- E) Sensor for solar system storage tank
- F) Sensor for solar system collector

Hydraulic integration of Thermotank Quadroline

TQ-S as separation storage tank, TQ-TWS as domestic water storage tank with solar, 2 heating circuits, oil-fired boiler, solar, domestic hot water provision

CAUTION:

This hydraulics diagram does not show all the ventilation, shut-off devices or safety measures in full. These will need to be installed on a system-specific basis in accordance with the applicable standards and provisions.



CAUTION:

If an electrically controlled pump is used for the heating pump (no. 9) or the floor heating pump (no. 21), there is no need for a differential-pressure bypass valve (no. 12) in the heating circuits.

- 1) Heat pump
- 2) Floor heating/Radiators
- 7) Safety valve
- 8) Shut-off device
- 9) Heating circulation pump
- 10) Non-return valve
- 11) Individual room control/Thermostat valve
- 12) Differential-pressure bypass valve
- 15) Mixed circuit, 3-way valve
- 16) Expansion tank, provided by client
- 17) Solar circulation pump
- 21) Mixed circuit, circulation pump
- 24) Manometer

- 26) Domestic hot water cross-over valve
- 30) Collecting vessel for brine mixture
- 42) Circulation pump
- 45) Cap valve
- 46) Filling and drainage valve
- 49) Solar cross-over valve
- 51) Separation storage tank TQ-S
- 52) Gas-fired or oil-fired boiler
- 53) Wood boiler
- 54) Domestic water storage tank TQ-K
- 58) Domestic water mixer

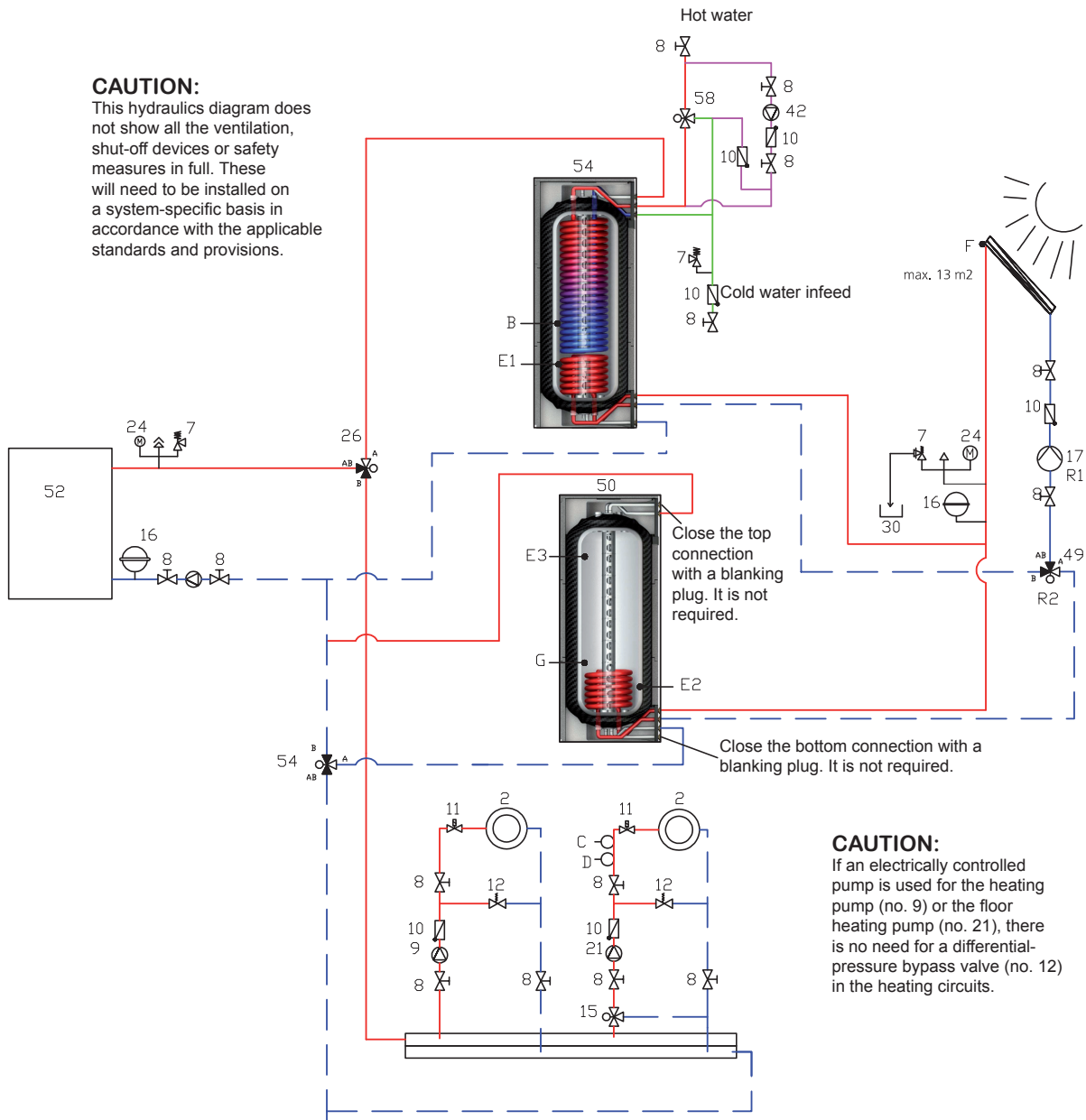
- A) External sensor
- B) Domestic hot water sensor
- C) Inlet sensor mixed circuit
- D) Floor temperature limiter
- E1) Sensor for solar system storage tank 1
- E2) Sensor for solar system storage tank 2
- F) Sensor for solar system collector
- G) Return sensor

Hydraulic integration of Thermotank Quadroline

TQ-S with return riser, TQ-TWS as domestic water storage tank with solar, 2 heating circuits, oil-fired boiler, solar, domestic hot water provision

CAUTION:

This hydraulics diagram does not show all the ventilation, shut-off devices or safety measures in full. These will need to be installed on a system-specific basis in accordance with the applicable standards and provisions.



CAUTION:

If an electrically controlled pump is used for the heating pump (no. 9) or the floor heating pump (no. 21), there is no need for a differential-pressure bypass valve (no. 12) in the heating circuits.

- 1) Heat pump
- 2) Floor heating/Radiators
- 7) Safety valve
- 8) Shut-off device
- 9) Heating circulation pump
- 10) Non-return valve
- 11) Individual room control/Thermostat valve
- 12) Differential-pressure bypass valve
- 15) Mixed circuit, 3-way valve
- 16) Expansion tank, provided by client
- 17) Solar circulation pump
- 21) Mixed circuit, circulation pump
- 24) Manometer

- 26) Domestic hot water cross-over valve
- 30) Collecting vessel for brine mixture
- 42) Circulation pump
- 45) Cap valve
- 46) Filling and drainage valve
- 49) Solar cross-over valve
- 50) Buffer storage tank solar TQ-S
- 51) Domestic water storage tank TQ-K
- 52) Gas-fired or oil-fired boiler
- 53) Wood boiler
- 54) Return riser cross-over valve
- 58) Domestic water mixer

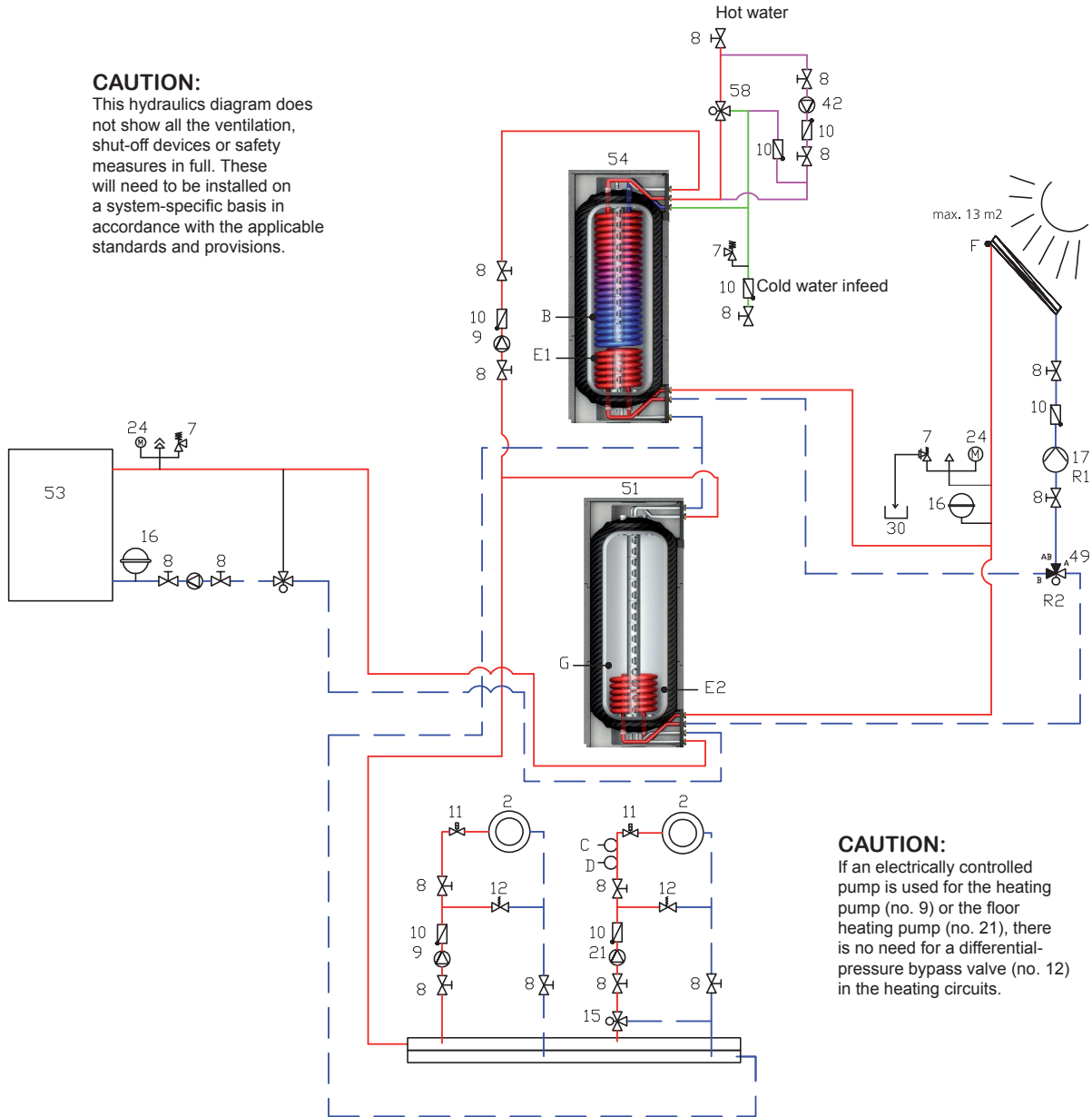
- A) External sensor
- B) Domestic hot water sensor
- C) Inlet sensor mixed circuit
- D) Floor temperature limiter
- E1) Sensor for solar system storage tank 1
- E2) Sensor for solar system storage tank 2
- E3) Sensor for solar return riser
- F) Sensor for solar system collector
- G) Return sensor

Hydraulic integration of Thermotank Quadroline

TQ-S as separation storage tank, TQ-TWS as domestic water storage tank with rebalancing, 2 heating circuits, solid fuel boiler, solar, domestic hot water provision

CAUTION:

This hydraulics diagram does not show all the ventilation, shut-off devices or safety measures in full. These will need to be installed on a system-specific basis in accordance with the applicable standards and provisions.



CAUTION:

If an electrically controlled pump is used for the heating pump (no. 9) or the floor heating pump (no. 21), there is no need for a differential-pressure bypass valve (no. 12) in the heating circuits.

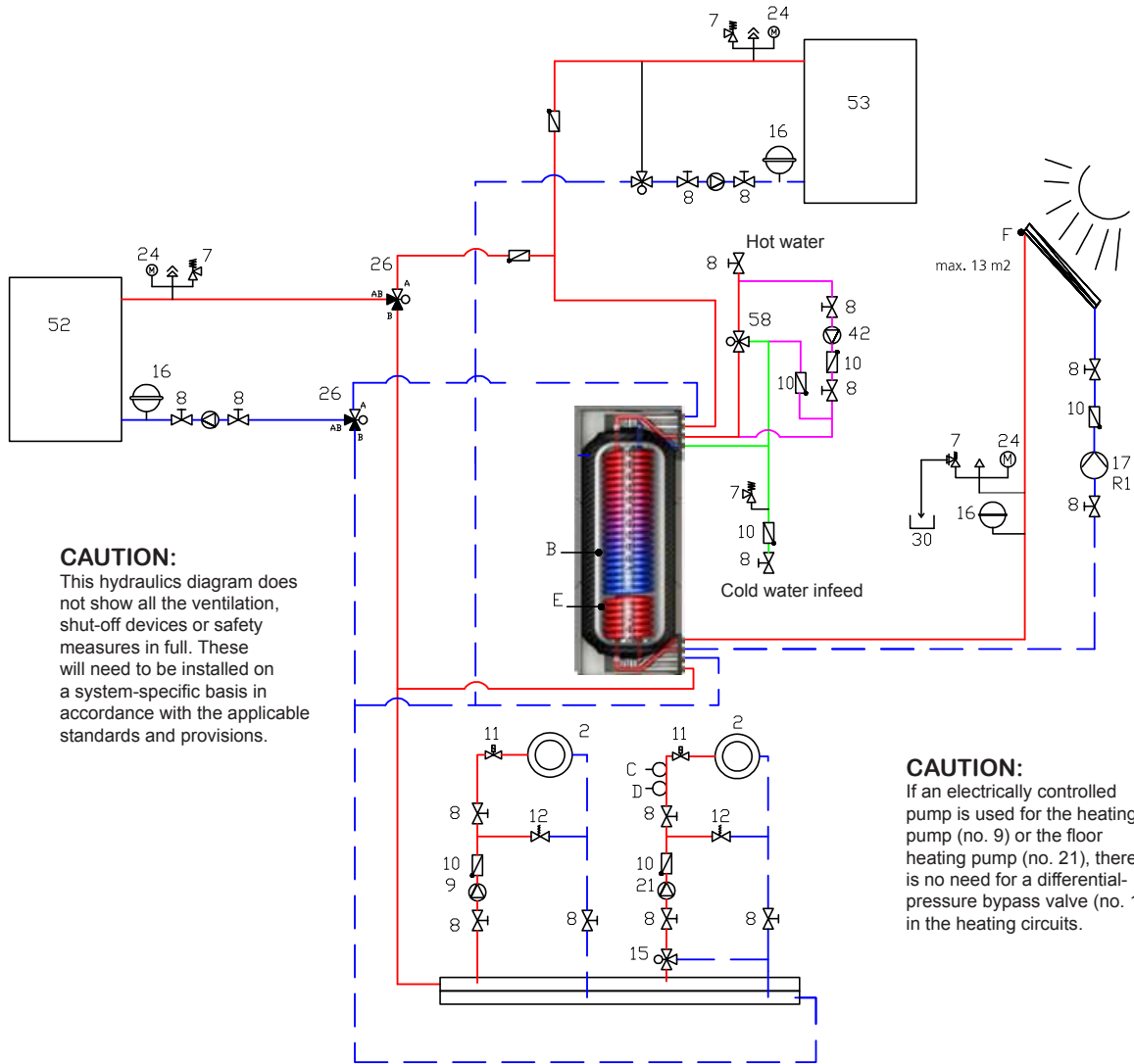
- 1) Heat pump
- 2) Floor heating/Radiators
- 7) Safety valve
- 8) Shut-off device
- 9) Heating circulation pump
- 10) Non-return valve
- 11) Individual room control/Thermostat valve
- 12) Differential-pressure bypass valve
- 15) Mixed circuit, 3-way valve
- 16) Expansion tank, provided by client
- 17) Solar circulation pump
- 21) Mixed circuit, circulation pump
- 24) Manometer

- 26) Domestic hot water cross-over valve
- 30) Collecting vessel for brine mixture
- 42) Circulation pump
- 45) Cap valve
- 46) Filling and drainage valve
- 49) Solar cross-over valve
- 50) Quadroline TQ-K
- 51) Quadroline TQ-S
- 52) Gas-fired or oil-fired boiler
- 53) Wood boiler
- 58) Domestic water mixer

- A) External sensor
- B) Domestic hot water sensor
- C) Inlet sensor mixed circuit
- D) Floor temperature limiter
- E1) Sensor for solar system storage tank 1
- E2) Sensor for solar system storage tank 2
- F) Sensor for solar system collector
- G) Return sensor

Hydraulic integration of Thermotank Quadroline

TQ-K, 2 heating circuits, oil-fired boiler, solar, domestic hot water provision, solid fuel boiler



CAUTION:
This hydraulics diagram does not show all the ventilation, shut-off devices or safety measures in full. These will need to be installed on a system-specific basis in accordance with the applicable standards and provisions.

CAUTION:
If an electrically controlled pump is used for the heating pump (no. 9) or the floor heating pump (no. 21), there is no need for a differential-pressure bypass valve (no. 12) in the heating circuits.

- 1) Heat pump
- 2) Floor heating/Radiators
- 7) Safety valve
- 8) Shut-off device
- 9) Heating circulation pump
- 10) Non-return valve
- 11) Individual room control/Thermostat valve
- 12) Differential-pressure bypass valve
- 15) Mixed circuit, 3-way valve
- 16) Expansion tank, provided by client
- 17) Solar circulation pump
- 21) Mixed circuit, circulation pump
- 24) Manometer

- 26) Domestic hot water cross-over valve
- 30) Collecting vessel for brine mixture
- 42) Circulation pump
- 45) Cap valve
- 46) Filling and drainage valve
- 50) Quadroline
- 52) Gas-fired or oil-fired boiler
- 53) Wood boiler
- 58) Domestic water mixer

- A) External sensor
- B) Domestic hot water sensor
- C) Inlet sensor mixed circuit
- D) Floor temperature limiter
- E) Sensor for solar system storage tank
- F) Sensor for solar system collector



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