

Climate
Control

IMI Pneumatex

Transfero TI Connect



Pressure maintenance systems with pumps

Pressure maintenance systems up to 40 MW with pumps

Transfero TI Connect

Transfero TI Connect is a precision pressure maintenance device up to 40 MW with pumps for heating, solar and chilled water systems. Its use is particularly recommended where high performance, compact design and precision are required.

Key features

BrainCube control

Self-optimising with memory function.
Easy commissioning, remote access and remote support during troubleshooting.
Built-in interfaces for communication with the IMI web server and ModBus TCP and RTU for building control applications.

Pressurization

2 pumps, 2 spill connections each with 2 in series connected spill valves. Switching is time and load dependent.

PowerCube switch cabinet with halogen-free wiring

main switch with emergency stop function; 2 motor circuit breakers; Automatic soft start and soft stop for each pump.

Fillsafe water make-up monitoring

With the possibility to control water make-up through a Pleno PX.



Technical description – Control unit TecBox

Applications:

Closed heating, solar and chilled water systems.

For systems to EN 12828 and optional >110 °C to EN 12952, EN 12953 with additional pressure limiters Paz PMIN and water level limiter ComCube DML Connect, solar systems according to EN 12976, ENV 12977 with on-site overtemperature protection in the event of power failure.

Media:

According to VDI 2035 for non-aggressive and non-toxic system media. Ethylene or propylene glycol-based antifreeze up to 50%.

Pressure:

Min. admissible pressure, PS_{min} : 0 bar
Max. admissible pressure, PS: see Articles

Temperature:

Max. admissible temperature,
 t_{Smax} : 90°C
Min. admissible temperature,
 t_{Smin} : 0°C
Max. admissible ambient temperature,
 t_{Amax} : 40°C
Min. admissible ambient temperature,
 t_{Amin} : 5°C

Accuracy:

Precision pressure maintenance $\pm 0,2$ bar.

Supply voltage:

Main current: 3x 400V / 50Hz (3P + PE)
Control voltage: 230V / 50Hz (P + N + PE)

Electrical connections:

Onsite fuses according to power demand and local norms,
4 potential free outputs ((individual parameterizable) for external message display (230V max. 2A),
2 potential-free outputs for status messages, Motor circuit breakers of pump P1 and P2,
1 potential-free output for controlling an external water make-up device,
3 Grinding terminals for e.B. for optional pressure-, level-, temperature limiter.
1 RS 485 In/Output,
1 Ethernet RJ45 plug socket,
Terminal strip in PowerCube for direct wiring of the above-mentioned connectors,
1 USB Hub plug socket,
Software upgrade and LOG File Download

Fire protection:

complete electrical cabling in halogen-free version according to EN 50575 and EN 13501-6.

Classification Cca s1-d1-a1 for external cables. Classification Dca s2-d2-a2 for single wires within the PowerCube control cabinet.

Enclosure class:

IP 54

Material:

In essence: steel, brass and bronze

Connections:

Water make-up (Swm): Rp3/4
Connection vessel (Sv): 80/6 DN/PN

Standard:

Constructed according to MD 2006/42/EC, Annex II 1.A
EMC-D. 2014/30/EU

Technical description – Expansion vessels

Applications:

Only together with Control unit TecBox.
See Applications under Technical description - Control unit TecBox.

Transero TGIH:

with additional electronic measuring foot LT and connection possibility of a ComCube DML for individual content measurement, content display and alarm circuit for Min/Max water level. Recommended for applications according to EN 12952 and EN 12953.

Media:

According to VDI 2035 for non-aggressive and non-toxic system media.
Ethylene or propylene glycol-based antifreeze up to 50%.

Pressure:

Min. admissible pressure, PSmin: 0 bar
Max. admissible pressure, PS: 2 bar

Temperature:

Max. admissible temperature, t_{Smax} : 120 °C
Min. admissible temperature, t_{Smin} : -10 °C
Max. admissible bag temperature, t_{Bmax} : 70 °C
Min. admissible bag temperature, t_{Bmin} : 5 °C

Material:

Steel, welded. Color beryllium.

Standard:

Constructed according to PED 2014/68/EU.

Warranty:

5-year warranty for the vessel.
5-year warranty for the airproof butyl bag.

Function, Equipment, Features

TecBox - Control unit

- BrainCube Connect control for an intelligent, fully automatic, safe system operation. Self-optimising with memory function.
- Resistive 3.5" TFT illuminated colour touch display. Web-based interface with remote control and live view. User-friendly, operation-orientated menu layout with slide and tap operation, step-by-step start up procedure guide and direct help in pop-up windows. Representation of all relevant parameters and operation status in plain text and/or graphical, multilingual.
- Standardised integrated connections (Ethernet, RS 485) to the IMI webserver and BMS (Modbus and IMI Pneumatex protocol).
- Software updates and data logging possible via USB connection
- Data logging and system analysis, chronological message memory with prioritisation, remotely controllable with live view, periodical automatic self-test.
- 2 pumps. 2 spill connections each with 2 in series connected spill valves. Switching is time and load dependent.
- PowerCube switch cabinet PC1. Main switch with emergency stop function; 2 motor circuit breakers; Gentle start and soft stop automatic for each pump.
- Secured barriers in overflow and pump lines.
- High-quality stable galvanized base plate.
- Variable installation next to the primary vessel.
- Including DSV... DGH safety valve for vessel protection.

Water make-up

- Fillsafe: water-make up monitoring and control.
- Connection for optional Pleno PX (water make-up module with contact water flow meter and solenoid valve).
- Softsafe monitoring and control for an optional refill water treatment device.

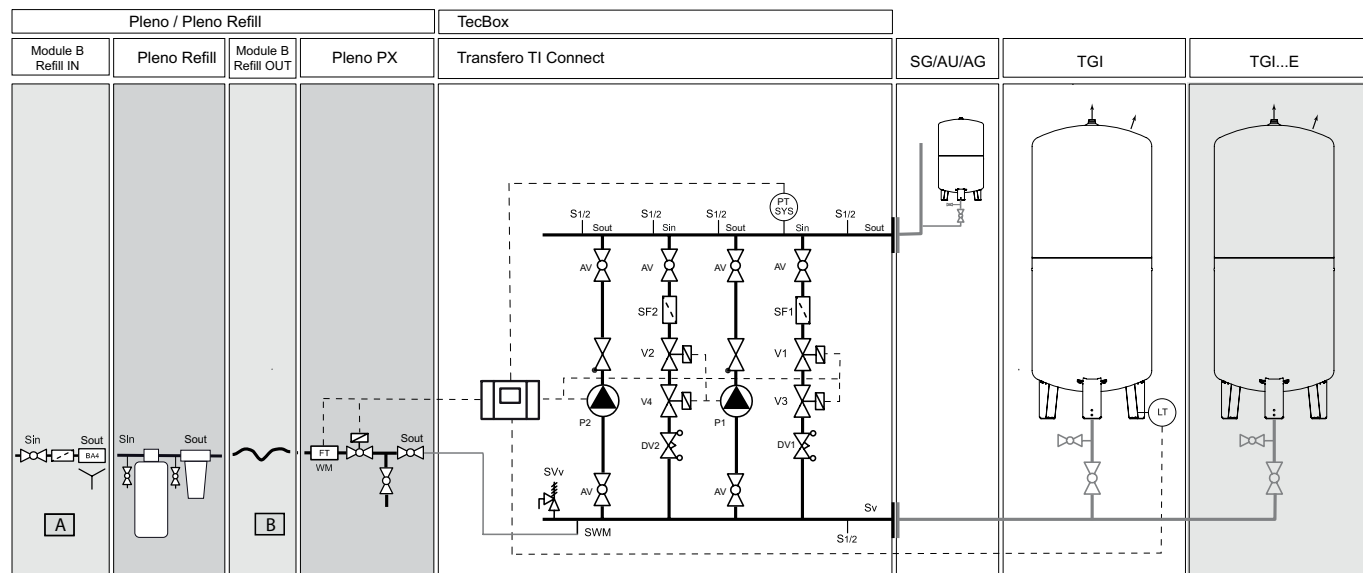
Expansion vessels

- Bag can be vented at the top, condensate drain at the bottom.
- Feet for upright assembly.
- Includes flex tube for water-side connection and cap shut-off ball valve for quick emptying.
- Corrosion-protected internal coating for minimum bag wear.
- Airproof butyl bag, exchangeable.
- Two flange openings for internal inspections.

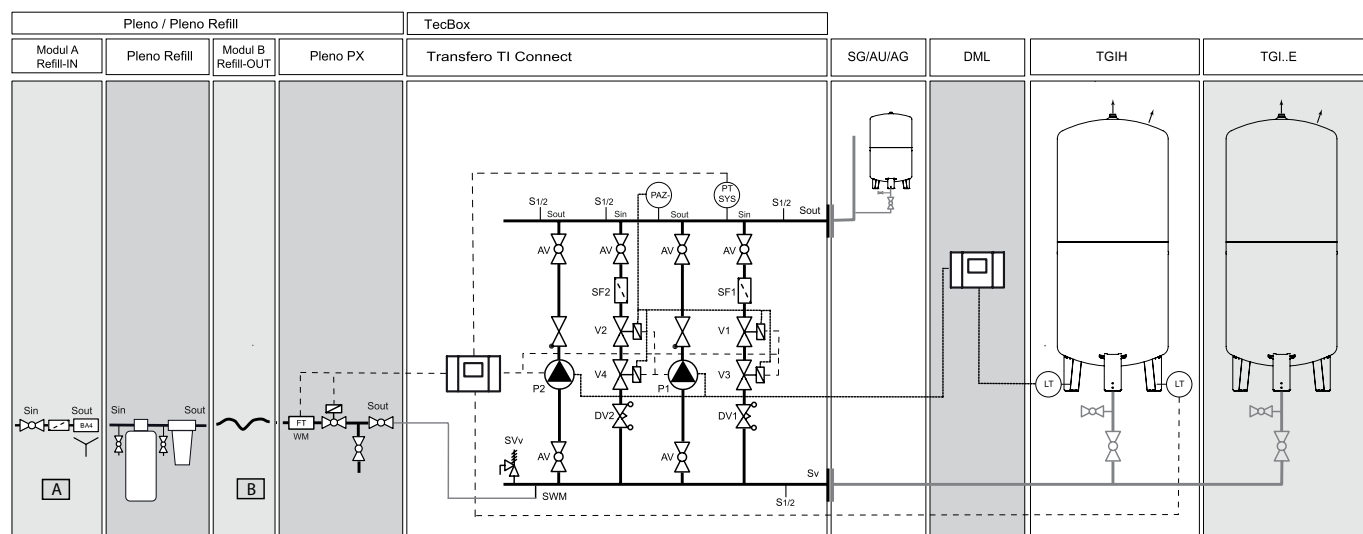
Principle scheme

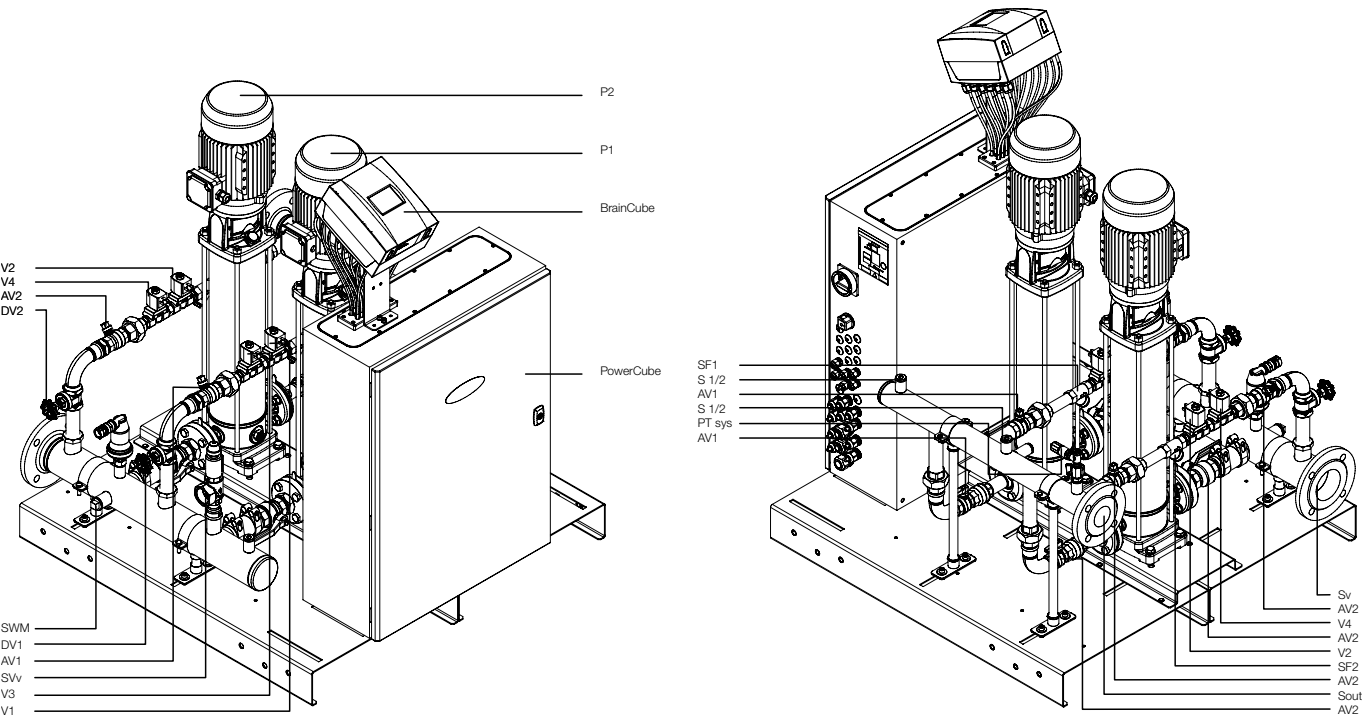
Transfero TI Connect

Grey area is optional



Recommended for TAZ > 110 °C

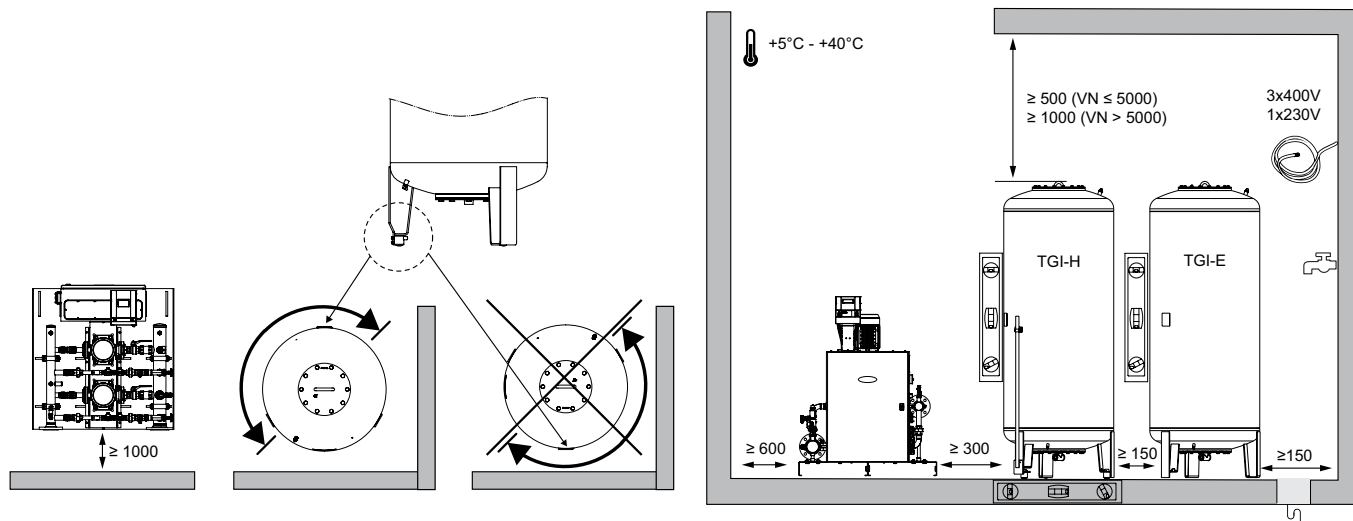




P1/P2	Pump 1/2
V1/V2/V3/V4	Solenoid valve
AV1/AV2	Shut off valve
SF1/SF2	Strainer 1/2"
S1/2	Connection 1/2"
DV1/DV2	Balancing valve
SWM	Connection Water Make up
Sout	Connection System
Sv	Connection Expansion Vessels

[illegible]

1	Transfero TI TecBox	
2	TGI/TGIH	
3	TGIE	
4	Statico/Aquapresso	See TAB Statico/Aquapresso
5	ComCube DML Connect	
6	DU/DG Intermediate vessel	



TAB Statico / Aquapresso

Transfero	qN | l/h	psvs | bar	Statico / Aquapresso	Article No	S
TI ..0.2	≤ 3.500	≤ 10	Aquapresso AU 140.10	711 1007	R 1 1/4
	> 3.500	≤ 10	Aquapresso AU 200.10	711 1008	R 1 1/4
	≤ 3.500	≤ 16	Aquapresso AG 300.16	711 3000	DN 50
	> 3.500	≤ 16	Aquapresso AG 300.16	711 3000	DN 50
	≤ 3.500	≤ 25	Statico SG 300.25	on request	DN 50
	> 3.500	≤ 25	Statico SG 500.25	on request	DN 50

TI ..1.2	≤ 6.000	≤ 10	Aquapresso AU 200.10	711 1008	R 1 1/4
	> 6.000	≤ 10	Aquapresso AU 300.10	711 1009	R 1 1/4
	≤ 6.000	≤ 16	Aquapresso AG 300.16	711 3000	DN 50
	> 6.000	≤ 16	Aquapresso AG 500.16	711 3001	DN 50
	≤ 6.000	≤ 25	Statico SG 500.25	on request	DN 50
	> 6.000	≤ 25	Statico SG 700.25	on request	DN 50

TI ..2.2	≤ 12.500	≤ 10	Aquapresso AG 500.16	711 3001	DN 50
	> 12.500	≤ 10	Aquapresso AG 700.10	711 3013	DN 50
	≤ 12.500	≤ 16	Aquapresso AG 500.16	711 3001	DN 50
	> 12.500	≤ 16	Aquapresso AG 1000.16	711 3003	DN 65
	≤ 12.500	≤ 25	Statico SG 700.25	on request	DN 50
	> 12.500	≤ 25	Statico SG 1500.25	on request	DN 65

TI ..3.2	≤ 20.000	≤ 10	Aquapresso AG 700.10	711 1013	DN 50
	> 20.000	≤ 10	Aquapresso AG 1500.10	711 1015	DN 65
	≤ 20.000	≤ 16	Aquapresso AG 1000.16	711 3003	DN 65
	> 20.000	≤ 16	Aquapresso AG 1500.16	711 3004	DN 65
	≤ 20.000	≤ 25	Statico SG 1500.25	on request	DN 65
	> 20.000	≤ 25	Statico SG 2200.25	on request	DN 80

Ls	DNs
≤ 2 m	DNS ≥ S
≤ 10 m	DNS ≥ 2 x S
> 10 m	DNS ≥ Calculation

Le		TI ..0.2	TI ..1.2	TI ..2.2	TI ..3.2
≤ 10 m	DNe / DNv ≥	50	65	80	100
≤ 30 m	DNe / DNv ≥	65	80	100	125

TAB DN selection Master-Slave

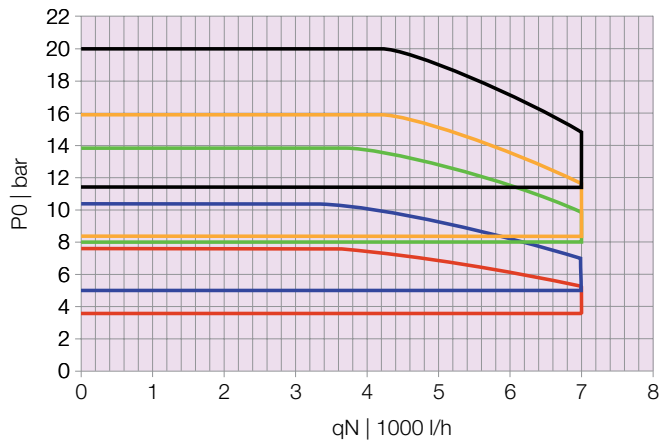
DN	50	65	80	100	125	150	200
DN_(+0)	50	65	80	100	125	150	200
DN_(+1)	65	80	100	125	150	200	250
DN_(+2)	80	100	125	150	200	250	300
DN_(+3)	100	125	150	200	250	300	350
DN_(+4)	125	150	200	250	300	350	400
DN_(+5)	150	200	250	300	350	400	450
DN_(+6)	200	250	300	350	400	450	500
...
DN_(+n-1)	...	...	...	...	...	...	...
DN_(+n)	...	...	...	...	...	...	...

Selection table

TAB ts

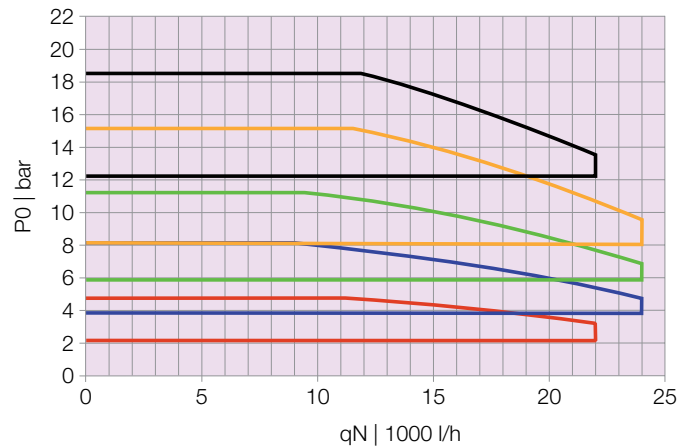
$100\text{ °C} \leq t_s \leq 150\text{ °C}$:	$qN\text{ [l/h]} = 0,9 \cdot Q\text{ [kW]}$
$50\text{ °C} \leq t_s \leq 100\text{ °C}$:	$qN\text{ [l/h]} = 0,6 \cdot Q\text{ [kW]}$
$t_s \leq 50\text{ °C}$:	$qN\text{ [l/h]} = 0,384 \cdot Q\text{ [kW]}$

Transfero TI ..0.2



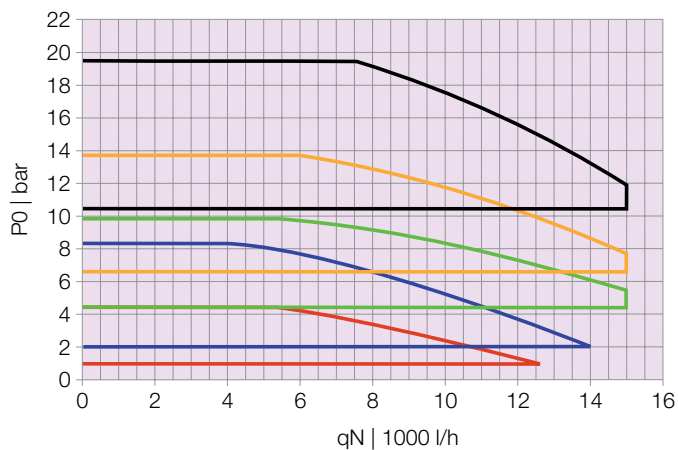
- Transfero TI 90.2
- Transfero TI 120.2
- Transfero TI 150.2
- Transfero TI 190.2
- Transfero TI 230.2

Transfero TI ..2.2



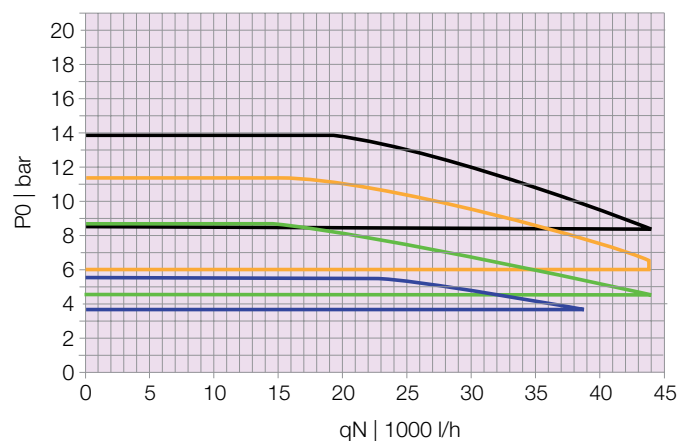
- Transfero TI 62.2
- Transfero TI 102.2
- Transfero TI 132.2
- Transfero TI 182.2
- Transfero TI 212.2

Transfero TI ..1.2



- Transfero TI 61.2
- Transfero TI 91.2
- Transfero TI 111.2
- Transfero TI 161.2
- Transfero TI 231.2

Transfero TI ..3.2



- Transfero TI 73.2
- Transfero TI 103.2
- Transfero TI 133.2
- Transfero TI 163.2

Transfero TI Connect in size 3 on request. Please contact IMI.
For detailed calculations please contact IMI.

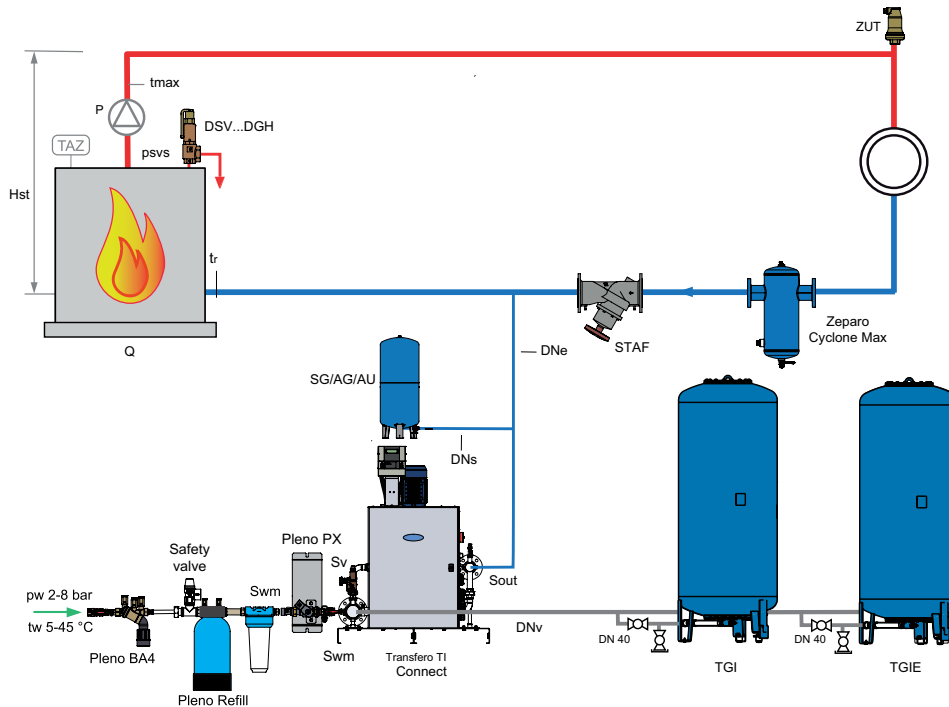
Application examples

Transero TI Connect

TecBox with 2 pumps, precision pressure maintenance $\pm 0,2$ bar, Pleno P BA4R for water make-up.

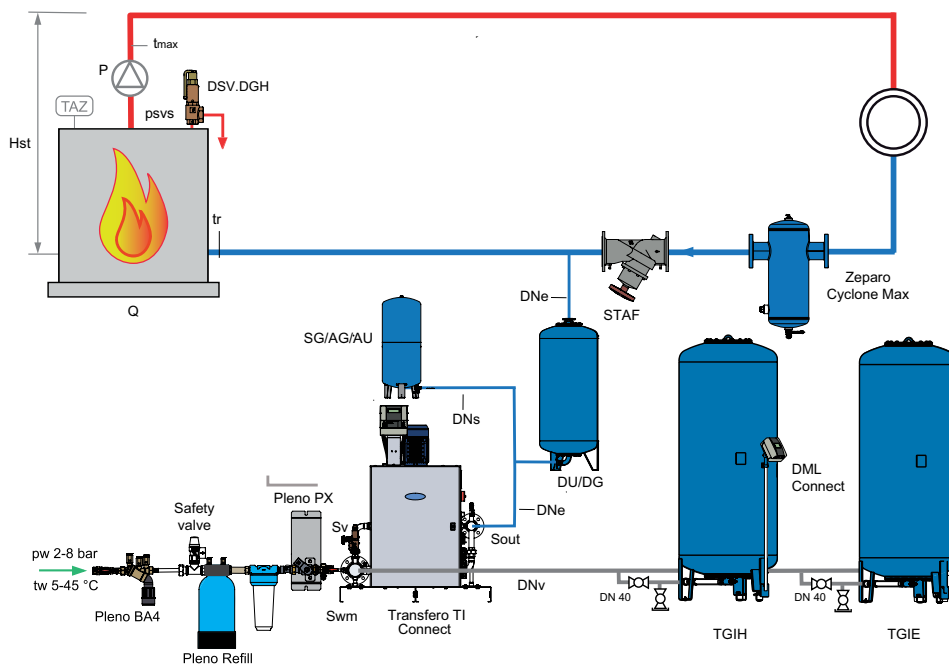
Example for heating systems, return temperature $5 \leq tr \leq 70^\circ\text{C}$

(May require changes to meet local legislation)



Example for heating systems, return temperature $tr > 70^\circ\text{C}$

(May require changes to meet local legislation)



Zeparo Cyclone Max for the central separation of sludge.

Zeparo ZUT for automatic venting during filling and during draining.

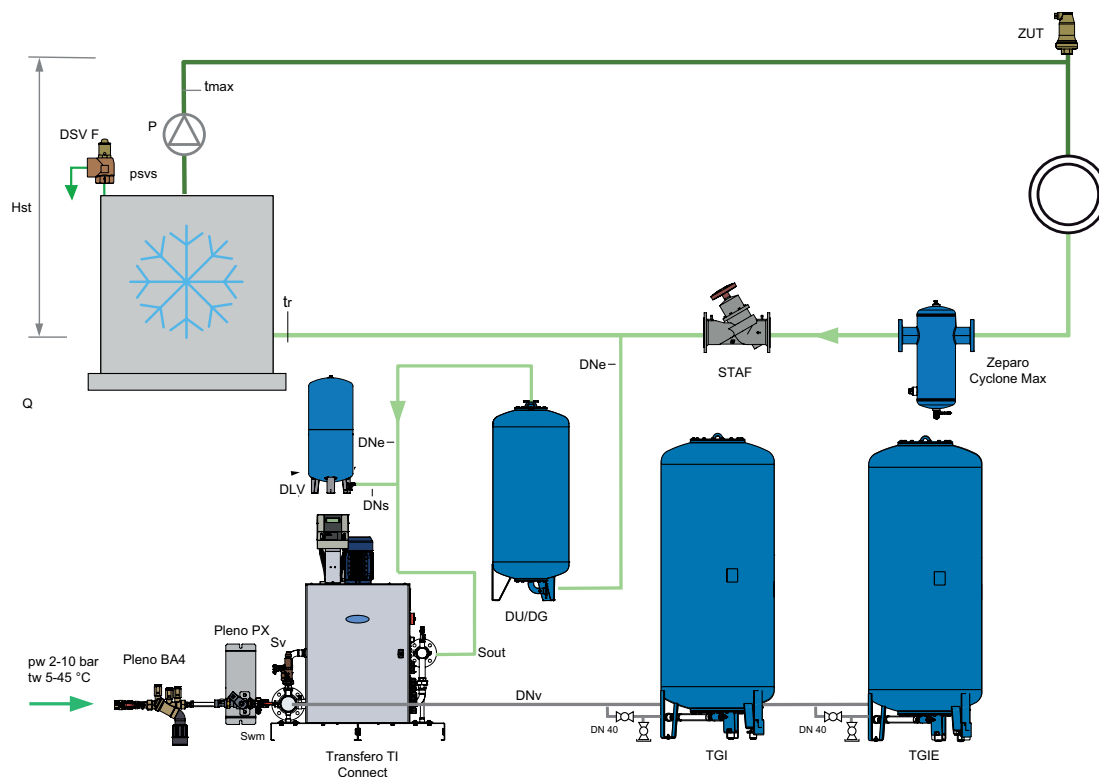
Further accessories, product and selection details, see: Datasheet Pleno Connect, Zeparo and Accessories.

Transero TI Connect

TecBox with 2 pumps, precision pressure maintenance $\pm 0,2$ bar, Pleno P BA4R for water make-up.

Example for cooling systems, return temperature $t_r \leq 5^\circ\text{C}$

(May require changes to meet local legislation)



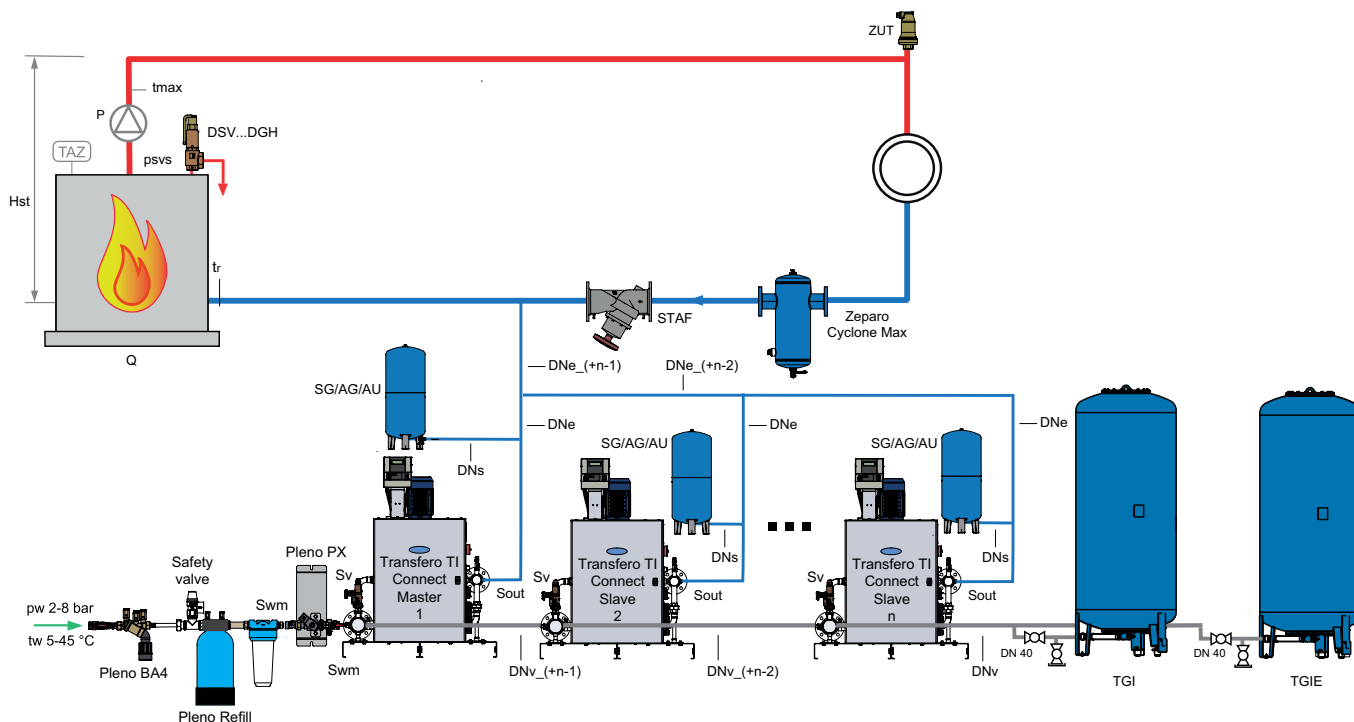
Master-Slave Pressure Control (PC/PCR) combined operation with Transero TI Connect

TecBoxes for parallel (Master-Slave Pressure Control (PC/PCR) combined operation, TecBox with 2 pumps, precision pressure maintenance ± 0.2 bar, Pleno P BA4R for water make-up.

Example for Master-Slave Pressure Control (PC/PCR) combined operation with a single primary vessel and multiple TecBoxes in heating systems, return temperature $5 \leq t_r \leq 70^\circ\text{C}$

(May require changes to meet local legislation)

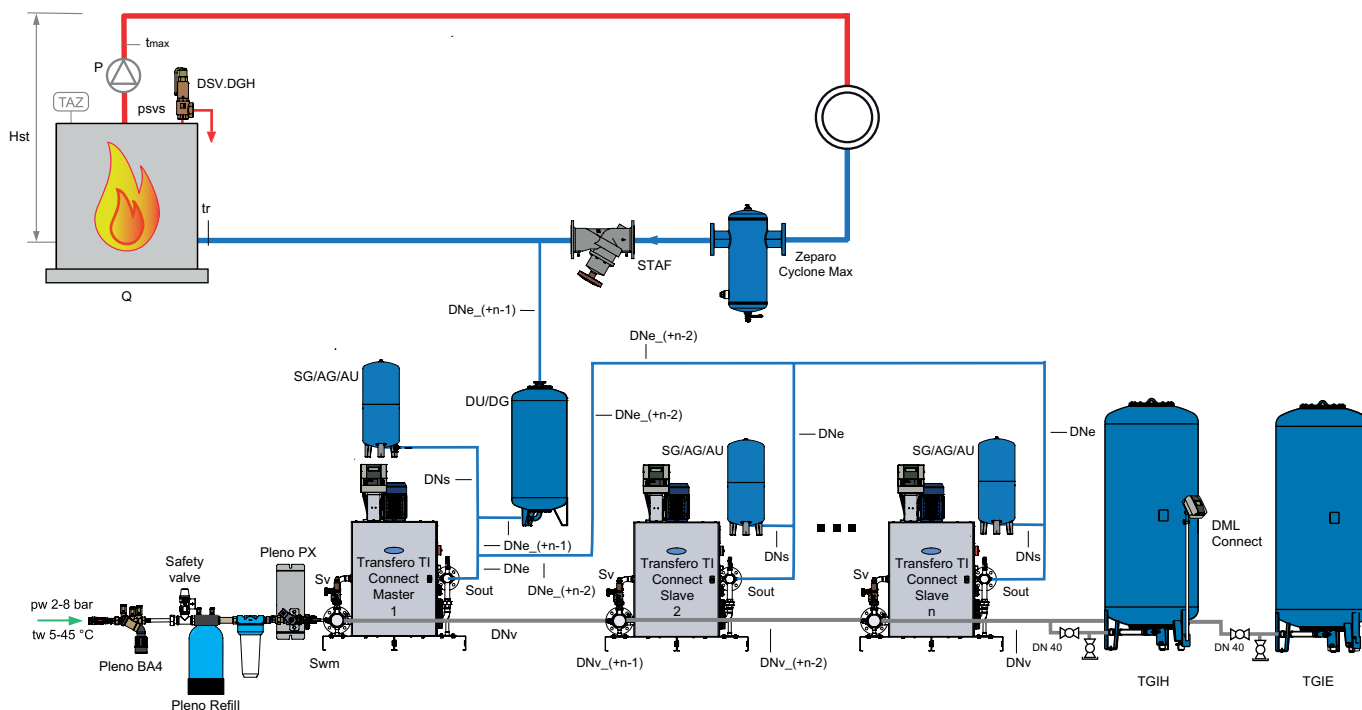
Scheme is valid for all Transero TI models.



Example for Master-Slave Pressure Control (PC/PCR) combined operation with two primary vessels and multiple TecBoxes in heating systems, return temperature $t_r > 70^\circ\text{C}$

(May require changes to meet local legislation)

Scheme is valid for all Transero TI models.

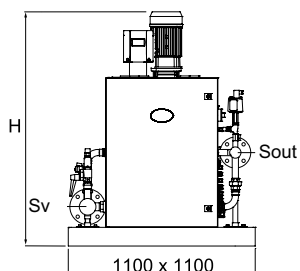


Zeparo Cyclone Max for the central separation of sludge.

Zeparo ZUT for automatic venting during filling and during draining.

Further accessories, product and selection details, see: Datasheet Pleno Connect, Zeparo and Accessories.

Control unit TecBox



Transfero TI Connect

Connection vessel (Sv): DN 80 / PN 6

Connection water make-up (SWM): Rp 3/4

Type*	PS [bar]	H	m [kg]	Sout [DN/PN]	Pel [kW]	SPL [dB(A)]	EAN	Article No
TI 90.2 PC1	16	1200	135	50/40	3,0	<70	7640161643017	301030 80912
TI 120.2 PC1	16	1200	145	50/40	3,8	<70	7640161643024	301030 80913
TI 150.2 PC1	16	1200	170	50/40	5,4	<70	7640161643031	301030 80914
TI 190.2 PC1	25	1200	195	50/40	5,4	<70	7640161643038	301030 80915
TI 230.2 PC1	25	1300	215	50/40	7,2	<70	7640161643055	301030 80916
TI 61.2 PC1	16	1200	135	80/16	3,0	<70	7640161643062	301030 81111
TI 91.2 PC1	16	1200	150	80/16	4,2	<70	7640161643079	301030 81112
TI 111.2 PC1	16	1200	175	80/16	5,4	<70	7640161643086	301030 81113
TI 161.2 PC1	16	1300	190	80/16	7,2	<70	7640161643093	301030 81114
TI 231.2 PC1	25	1600	250	80/40	12,4	<70	7640161643116	301030 81116
TI 62.2 PC1	16	1200	185	80/16	5,4	<70	7640161643123	301030 81117
TI 102.2 PC1	16	1200	205	80/16	7,2	<70	7640161643130	301030 81118
TI 132.2 PC1	16	1200	215	80/16	9,4	<70	7640161643147	301030 81119
TI 182.2 PC1	25	1400	280	80/40	12,4	<70	7640161643154	301030 81120

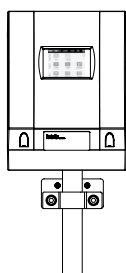
*) Constructions \geq TI ..3.2 and special installations upon request.

Accessories for control modules: Communication module.

Additional equipment: Pressure limiter Paz PMIN and water level indicator ComCube DML.

Master-Slave.

Accessories for control modules



ComCube DML Connect

Display of the content of the connected expansion vessel. 4 potential-free, individually parametric digital outputs (NO). Each digital output is individually electronically invertible (NC).

3.5" TFT color touchscreen with lighting.

Integrated standard connections (Ethernet, RS 485) to the IMI web server and the design control technology (Modbus).

Type	B	H	T	m [kg]	Pel [kW]	EAN	Article No
DML Connect	180	220	140	1,0	0,1	7640161643168	301032 30018

ComCube DCA TI

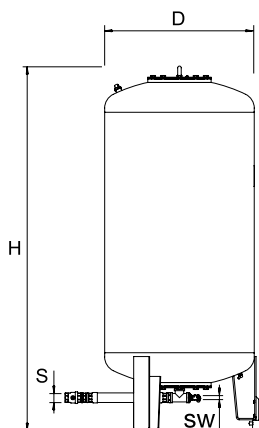
Communicator. Factory assembly in Transfero TI.

2 galvanically isolated analogue outputs 4-20 mA for connection to BMS, isolation voltage 2.5 kVAC. Completely wired to mounting rail in the PowerCube control cabinet.

Type	B	H	T	m [kg]	Pel [kW]	EAN	Article No
DCA TI	17,5	120	146	0,2	0,1	7640148638746	814 1015

T = Depth of the device

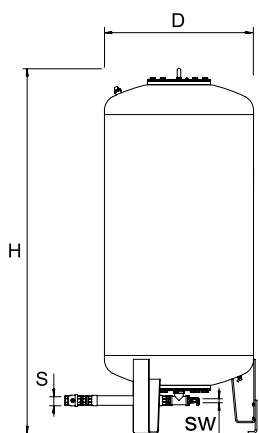
Expansion vessels



Transfero TGI

Primary vessel. Measuring foot for content measurement.

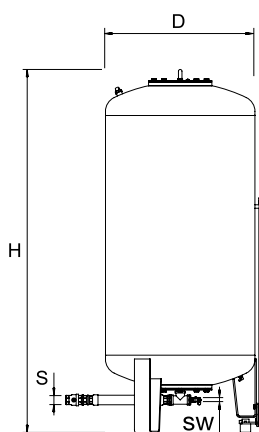
Type*	VN [l]	D	H	H***	m [kg]	S	Sw	EAN	Article No
2 bar (PS)									
TGI 1000	1000	850	2199	2210	280	G1 1/2	G3/4	7640148631983	713 3100
TGI 1500	1500	1016	2351	2381	360	G1 1/2	G3/4	7640148631990	713 3101
TGI 2000	2000	1016	2848	2876	640	G1 1/2	G3/4	7640148632003	713 3106
TGI 3000	3000	1300	2951	3016	800	G1 1/2	G3/4	7640148632010	713 3103
TGI 4000	4000	1300	3592	3633	910	G1 1/2	G3/4	7640148632027	713 3104
TGI 5000	5000	1300	4216	4275	1010	G1 1/2	G3/4	7640148632034	713 3105



Transfero TGI...E

Secondary vessel.

Type*	VN [l]	D	H	H***	m [kg]	S	Sw	EAN	Article No
2 bar (PS)									
TGI 1000E	1000	850	2199	2210	280	G1 1/2	G3/4	7640148632041	713 3300
TGI 1500E	1500	1016	2351	2381	360	G1 1/2	G3/4	7640148632058	713 3301
TGI 2000E	2000	1016	2848	2876	640	G1 1/2	G3/4	7640148632065	713 3306
TGI 3000E	3000	1300	2951	3016	800	G1 1/2	G3/4	7640148632072	713 3303
TGI 4000E	4000	1300	3592	3633	910	G1 1/2	G3/4	7640148632089	713 3304
TGI 5000E	5000	1300	4216	4275	1010	G1 1/2	G3/4	7640148632096	713 3305



Transfero TGI...H

Primary vessel. 1 electr. measuring foot for content measurement, 1 electr. measuring foot for additional water level indication and min/max alarms.

Type*	VN [l]	D	H	H***	m [kg]	S	Sw	EAN	Article No
2 bar (PS)									
TGI 1000H	1000	850	2199	2210	285	G1 1/2	G3/4	7640148632102	713 3200
TGI 1500H	1500	1016	2351	2381	365	G1 1/2	G3/4	7640148632119	713 3201
TGI 2000H	2000	1016	2848	2876	645	G1 1/2	G3/4	7640148632126	713 3206
TGI 3000H	3000	1300	2951	3016	805	G1 1/2	G3/4	7640148632133	713 3203
TGI 4000H	4000	1300	3592	3633	915	G1 1/2	G3/4	7640148632140	713 3204
TGI 5000H	5000	1300	4216	4275	1015	G1 1/2	G3/4	7640148632157	713 3205

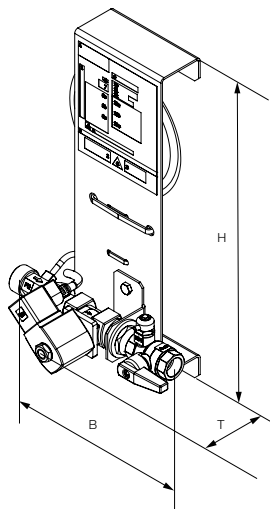
VN = Nominal volume

*) Special vessel upon request.

***) Max. height when vessel is tilted, tolerance 0 / -100

Additional equipment: Pressure limiter Paz PMIN and water level limiter DML Connect.

Control unit TecBox, Pleno PX



Pleno PX

Hydraulic unit. Water make-up without pumps. 1 solenoid valve, 1 electronic water meter, connection for Pleno P BA4 R.

Connection in (S_{wm}): G3/4.

Connection out (S_{out}): G1/2.

Type	PS [bar]	B	H	T	m [kg]	Pel [kW]	Kvs	EAN	Article No
PX	10	198	356	150	1,5	0,02	1,4	7640161641792	30106010011

T = Depth of the device

Pel = Electric load

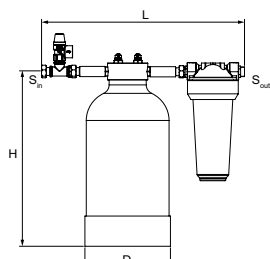
Water make-up unit Pleno PX - 25 with 1" connection on request.

Pleno Refill 16000, 36000, 48000 / Pleno Refill Demin 13500, 18000

Pleno Refill

Hydraulic unit for water softening together with Vento/Transfero Connect Tec Boxes. Filter with 25 µm mesh size to protect the hydronic system. Softening bottle filled with high grade resin.

For mounting on wall bracket or floor-to-ceiling.



Softening unit

3/4" swivelling nut, 3/4" external thread suitable for flat gasket.

Nominal pressure: PS 8

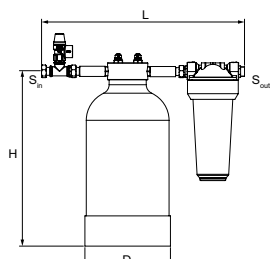
Max. working temperature: 45°C

Min. working temperature: > 4°C

Type	Capacity l x °dH	S _{in}	S _{out}	D	H	L	m [kg]	EAN	Article No
Refill 16000	16000	G3/4	G3/4	195	383	455	9,1	7640161630475	813 3210
Refill 36000	36000	G3/4	G3/4	220	466	455	13	7640161630482	813 3220
Refill 48000	48000	G3/4	G3/4	270	458	455	16,2	7640161630499	813 3230

Pleno Refill Demin

Hydraulic unit for water demineralisation together with Vento/Transfero Connect Tec Boxes. Filter with 25 µm mesh size to protect the hydronic system. Desalination bottle filled with high grade resin.



Demineralisation unit

3/4" swivelling nut, 3/4" external thread suitable for flat gasket.

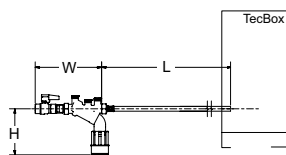
Nominal pressure: PS 8

Max. working temperature: 45°C

Min. working temperature: > 4°C

Type	Capacity l x °dH	S _{in}	S _{out}	D	H	L	m [kg]	EAN	Article No
Refill Demin 13500	13500	G3/4	G3/4	220	466	455	13	7640161630505	813 3260
Refill Demin 18000	18000	G3/4	G3/4	270	458	455	16,2	7640161630512	813 3270

Water make-up protection module



Pleno P BA4 R

Hydraulic unit for water make-up operation with Vento/Transero Connect, as well as Simply Compresso C 2.1-80 SWM. Features a shut off valve, check valve, filter and a type BA backflow preventer (protection class 4) according to EN 1717.

With connection for Pleno Refill modules.

Connection (Swm): G1/2

Type	PS [bar]	B	L	H	m [kg]	qwm [l/h]	EAN	Article No
BA4 R	10	210	1300	135	1,1	350	7640161630147	813 3310

qwm = maximum water make-up volume

T = Depth of the device

Additional equipment according to EN 12952, EN 12953

Additional equipment for systems >110 °C according to EN 12952, EN 12953.

Max. admissible ambient temperature, TA: 40°C

Supply voltage: 230 V/50 Hz

Max. admissible temperature, TS: 70 °C

Min. admissible temperature, TSmin: 0 °C

Min. admissible pressure, PSmin: 0 bar

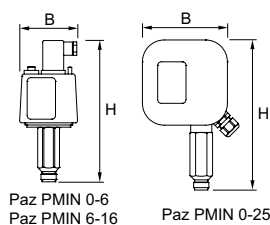
Enclosure class: IP 54

Paz PMIN

Minimum pressure switch. For retrofitting to Transero TI.

Fitting on site into TecBox and connection to control module.

TÜV-tested in accordance with VdTÜV Druck 100/1 for specialised equipment and according to PED 2014/68/EU.



Type	VN [l]	B	H	T	m [kg]	S	dpu [bar]	EAN	Article No
PMIN 0-6	16	82	180	40	0,5	G1/2	0-6	7640148638821	825 1521
PMIN 6-16	30	82	194	30	0,5	G1/2	6-16	7640148638845	825 1523

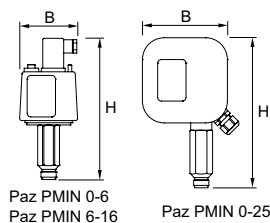
T = Depth of the device

Paz PMIN TI

Minimum pressure switch. Factory fitted to Transero TI.

Pre connected to control module.

TÜV-tested in accordance with VdTÜV Druck 100/1 for specialised equipment and according to PED 2014/68/EU.



Type	VN [l]	B	H	T	m [kg]	S	dpu [bar]	EAN	Article No
PMIN 0-6 TI	16	82	180	40	0,5	G1/2	0-6	7640148638814	825 1520
PMIN 6-16 TI	30	82	194	30	0,5	G1/2	6-16	7640148638838	825 1522
PMIN 0-25 TI	30	133	208	61	0,5	G1/2	0-25	7640148638852	825 1524

T = Depth of the device

Additional information:

Calculation: Software HySelect



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