

ACCESSORIES

Components designed to be combined with industrial boilers and further improve their performances; products developed to be integrated in high-performance systems.

AUTOMATIC BLOWDOWN FOR BNX BOILERS



Standard equipment

- Rapid opening purge piston valve with pneumatic actuator and return spring
- Compressed air solenoid valve
- Adjustable cycle timer on board of control panel

Technical features

- Blowdown valve diameter in 1"
- Compressed air fitting diameter in 1/4"
- Compressed air pressure - min/max 4/10 bar
- Blowdown interval adjustment range, 0-12h
- Air consumption per cycle 0.62l
- Blowdown duration adjustment range, 0-12s

Accessory included in the standard equipment for:
GSS 72/1



The automatic bottom blowdown unit prevents unnecessary duplication or omission of blowdown that is possible with the manual system. This system allows sludge accumulated at the bottom of the boiler to be regularly and automatically removed through a cyclical opening in the blowdown valve. The system requires compressed air availability.

PRODUCT CODES

Models	Items	Kit code
BNX 100-150	Code as single additional accessory	86900034
	Code with multiple additional accessories	86900037
BNX 350-3000	Code as single additional accessory	86900033
	Code with multiple additional accessories	86900044

AUTOMATIC BLOWDOWN FOR SIXEN - GSX - GX BOILERS



Standard equipment

- Rapid opening purge ball valve, with steel body, pneumatic actuator and return spring
- Compressed air solenoid valve
- Adjustable cycle timer on board of control panel

Technical features

- Blowdown fitting diameter DN 32 *
- * DN 40 for GX boiler models
- Compressed air fitting diameter in 1/4"
- Compressed air pressure - min/max 4/10 bar
- Air consumption per cycle 0.62l
- Blowdown interval adjustment range, 0-12h
- Blowdown duration adjustment range, 0-12s

Accessory included in the standard equipment for:
GSS 72/1 and GSS 72/2X



The automatic bottom blowdown unit prevents unnecessary duplication or omission of blowdown that is possible with the manual system. This system allows sludge accumulated at the bottom of the boiler to be regularly and automatically removed through a cyclical opening in the blowdown valve. The blowdown intervals and duration must be set by the user based on the features of the boiler water as indicated in the boiler technical manual. The system requires compressed air availability.

PRODUCT CODES

Ranges	Items	Kit code
SIXEN	Code as single additional accessory	86900040
	Code with multiple additional accessories	86900039
GSX / GSX P	Code as single additional accessory	86900040
	Code with multiple additional accessories	86900039
GX	Code as single additional accessory	86900036
	Code with multiple additional accessories	86900042

ELECTRIC OR PNEUMATIC TDS SALINITY CONTROL



Standard equipment:

- Conductivity probe with integrated temperature probe
- Steel blowdown valve
- Pneumatic actuator with compressed air solenoid valve, closed in the absence electrical power , or alternatively electric actuator
- Shut-off globe valve
- Non-return valve
- Electric regulator on board of control panel

Accessory included in the standard equipment for:
GSS 72/2X



PRODUCT CODES

Pneumatic TDS	17090037
Electric TDS	17090035

ELECTRIC LIGHT TDS SALINITY CONTROL



Standard equipment:

- Conductivity probe with measurement chamber
- Drain solenoid valve
- Filter
- Shut-off valve
- Electric regulator on board of control panel

Accessory code:

17090051

Accessory included in the standard equipment for:
GSS 72/1



For boilers \leq BNX 1000 \leq SIXEN 2000 and \leq GSX 2000 THE TDS Controls are already electrically and hydraulically connected to the boiler. The TDS control system limits the level of salts and minerals dissolved in the boiler water to the value allowed by the manufacturer thus avoiding any risks of carry over due to excessive levels of salinity and minimising the required blowdown volume and costs. The system consists of an in-line kit connected to a suitable boiler fitting just below the water level. It works by opening the drain valve at regular intervals so that a very precise water quantity reaches the conductivity probe located inside the measurement chamber connected in line with the drain valve. The probe measures the boiler water electrical conductivity value which is proportional to the concentration of dissolved salts. The measured value is compared with the one set at the controller. If the measured value is lower, at the end of the discharge time, the valve closes. If the measured value is higher, the system continues to repeat the discharge cycle until the measured value returns within the limits.

Attention:

This kit can be applied only to boilers with design pressure lower than or equal to 12 bar

SAMPLE COOLER



To make sure that the boiler is working within the desired conductivity parameters, it is necessary to take water samples and analyse them. To take precise samples in a safe way it is essential to perform a proper cooling cycle in order to make any steam formed before the take-off point condense. The cooler reduces the water temperature up to 25°C, ready for immediate sampling.

Standard equipment:

- AISI 304 cylinder with an internal water-cooling coil
- Cooling water injection ball valve
- Handwheel valve for sampling

Accessory code:

38040100

Accessory included in the standard equipment for:
GSS 72/1 and GSS 72/2X



HIGH LEVEL ALARM KIT



Kit designed to prevent an excessive increase of water level inside the boiler. Once the set level is reached, the system stops the supply pump and triggers an acoustic alarm. Alarm resetting and pump restart automatically occur once normal level in the boiler is restored.

Standard equipment:

- Conductivity probe mounted directly on the boiler body for high safety level
- High-level relay in boiler control panel

PRODUCT CODES

General:	90060010
For boilers of the FX or FX DUAL series:	96140110

BACKUP SUPPLY PUMP



The backup pump is supplied to ensure the constant operation of the boiler, avoiding downtime in case of a main pump failure.

The pump is installed in parallel to the service pump and it is controlled in the same way as the service pump.

Both pumps, hydraulically connected to the same feed pipe, are equipped with a non-return valve and a shut-off valve dedicated to each pump to avoid the water flow towards the pump in stand-by conditions.

Standard equipment

- Backup feed pump with characteristics similar to service pump
- Pump suction side filter
- 1 non-return valve on pump downstream
- 2 shut-off valves on pump downstream
- Non-return valve
- General control panel electrical control comprising:
 - Pump 1-pump 2 switch
 - Pump 2 electrical power branch
 - Pump 2 operation indicator
 - Pump 2 alarm indicator

PRODUCT CODES

Kit code	Steam capacity	BNX	SIXEN	GSX	GSX P	GX
87050001	100 ÷ 350	100 ÷ 350				
87050004	500 ÷ 1700	500 ÷ 1700				
87050006	2000 ÷ 3000	2000 ÷ 3000				
87050010	350 ÷ 1500		350 ÷ 1350	350 ÷ 1500	500 ÷ 1500	
87050040	1700		1700			1000
87050050	2000 ÷ 2050		2000	2000	2000	1200
87050715	2500 ÷ 2650		2500	2500	2500	1500
87050720	3000 ÷ 3500		3000 ÷ 3500	3000 ÷ 3500	3000 ÷ 3500	1750 ÷ 2000
87050060	4000		4000	4000	4000	
87050062	4260					2500
87050070	5000 ÷ 5100		5000	5000	5000	3000
87050082	6000				6000	3500
87050092	6800					4000
87050102	8520					5000
87050755	10240 ÷ 12000					6000 ÷ 7000
87050112	13600 ÷ 15300					8000 ÷ 9000
87050122	17000					10000
87050132	20000 ÷ 22000					12000 ÷ 13000
87050142	25000					15000

MODULATING FEED WATER SYSTEM 2-WAY ELECTRIC VALVE



Thanks to this system, the level in the boiler is constantly adjusted by a PID controller that controls the opening of a modulating valve downstream of the supply pump which is always active. The water flow rate is constantly adjusted to meet the steam demand thus avoiding cycles of steam production as can occur with on/off level controls. By ensuring a constant feed water flow to the boiler, it is necessary to use a modulating feed valve when an economiser is installed, in order to ensure correct operation.

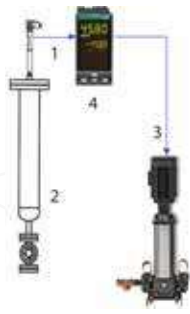
Standard equipment

- Capacitive probe with pre-amplifier
- Two-way steel modulating valve with positioner and electric actuator
- Electronic level regulator on board of control panel

PRODUCT CODES

Code	DN	Steam capacity	SIXEN	GSX	GSX P	GX
39060010	15	500 ÷ 1000	500 ÷ 1000	500 ÷ 850	500 ÷ 850	
39060015	15	1100 ÷ 2500	1300 ÷ 2500	1100 ÷ 2500	1100 ÷ 2500	1000 ÷ 1200
39060020	20	2560 ÷ 5100	3000 ÷ 5000	3000 ÷ 5000	3000 ÷ 5000	1500 ÷ 3000
39060025	25	6000 ÷ 8520			6000	3500 ÷ 5000
39060030	40	10240 ÷ 13600				6000 ÷ 8000

MODULATING FEED WATER SYSTEM 1 FEED PUMP WITH INVERTER INTEGRATED



Standard equipment

- 1) Capacitive probe
- 2) Settling chamber
- 3) Inverter on the supply pump
- 4) Electronic level regulator at control panel

BOILER COMPATIBILITY

MODELS	ITEMS
SIXEN 12 bar - single pump	All items
GSX 12 bar - single pump	All items
GSX P 12 bar - single pump	All items
GX 12 bar - single pump	All items

Accessory code:

39050001

MODULATING FEED WATER SYSTEM 2 FEED PUMPS WITH INVERTER INTEGRATED



Standard equipment

- 1) Capacitive probe
- 2) Settling chamber
- 3) Inverter on the supply pump
- 4) Electronic level regulator at control panel
- 5) Inverter on the backup pump

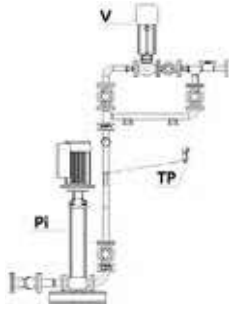
BOILER COMPATIBILITY

MODELS	ITEMS
SIXEN 12 bar - double pump	All items
GSX 12 bar - double pump	All items
GSX P 12 bar - double pump	All items
GX 12 bar - double pump	All items

Accessory code:

39050000

MODULATING FEED WATER SYSTEM 2-WAY ELECTRIC VALVE AND 1 FEED PUMP WITH INVERTER INTEGRATED



Standard equipment

- Capacitive probe with pre-amplifier
- Two-way steel modulating valve with positioner and electric actuator (V)
- Inverter on the supply pump (Pi)
- Pressure transducer (TP) installed downstream of the pump
- Electronic level regulator on board of control panel

Accessory code:

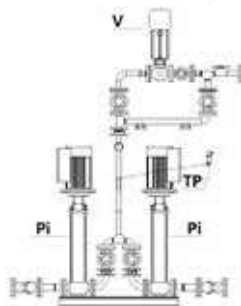
39050100

With this system, the level in the boiler is constantly adjusted by a PID controller that monitors the opening of a modulating valve downstream the feed pump; the latter adjusts its speed by maintaining a constant pressure downstream the pump itself and then at the modulating valve inlet. Water flow rate is then constantly adjusted to the steam request, thereby preventing a cyclic steam production that may occur with on/off level controls. Furthermore, the number of start-ups and stops of the feed pump are also minimised to the advantage of the pump duration and a lower electrical consumption. By ensuring a continuous water delivery towards the boiler, it is compulsory to use the modulating feed in the presence of the economiser in order to ensure a proper operation.

BOILER COMPATIBILITY

MODELS	ITEMS
SIXEN 12 bar - single pump	All items
GSX 12 bar - single pump	All items
GSX P 12 bar - single pump	All items
GX 12 bar - single pump	All items

MODULATING FEED WATER SYSTEM 2-WAY ELECTRIC VALVE AND 2 FEED PUMPS WITH INVERTER INTEGRATED



Standard equipment

- Capacitive probe with pre-amplifier
- Two-way steel modulating valve with positioner and electric actuator (V)
- Inverter on the supply pumps (Pi)
- Pressure transducer (TP) installed downstream of the pump
- Electronic level regulator on board of control panel

Accessory code:

39050110

With this system, the level in the boiler is constantly adjusted by a PID controller that monitors the opening of a modulating valve downstream the feed pump; the latter adjusts its speed by maintaining a constant pressure downstream the pump itself and then at the modulating valve inlet. Water flow rate is then constantly adjusted to the steam request, thereby preventing a cyclic steam production that may occur with on/off level controls. Furthermore, the number of start-ups and stops of the feed pump are also minimised to the advantage of the pump duration and a lower electrical consumption. By ensuring a continuous water delivery towards the boiler, it is compulsory to use the modulating feed in the presence of the economiser in order to ensure a proper operation.

BOILER COMPATIBILITY

MODELS	ITEMS
SIXEN 12 bar - double pump	All items
GSX 12 bar - double pump	All items
GSX P 12 bar - double pump	All items
GX 12 bar - double pump	All items

SELF MONITORING HIGH LEVEL ALARM KIT



Standard equipment:

- "Fail Safe" level probe
- Level electronic relay with self-diagnosis feature

This system ensures that the level in the boiler does not exceed the allowed value thus avoiding flood problems. It consists of a "fail safe" probe connected to an electronic level relay with self-diagnosis feature, capable of indicating:

- the presence of water above the set level;
- the lack of insulation inside the probe;
- faults inside the device (self-diagnosis);
- interruption of the connection between the probe and the device in compliance with EN 12953-9 point 5.4.8.

When it trips, the system triggers a visual and an acoustic alarm and stops the supply pump temporarily. The alarm is reset automatically once the level is again below the allowed maximum value.

The system is supplied completely assembled to the boiler and tested. It complies with the main European Directives:

- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- PED Directive 2014/68/EU

Accessory code:

90060040

SELF MONITORING LOW LEVEL ALARM KIT



Standard equipment:

- 2 "Fail Safe" independent level probes
- 2 level electronic independent relays with self-diagnosis feature

This system, supplied as an alternative to the standard low level probes, is designed to ensure that the level in the boiler does not go below the allowed value. It consists of two independent "fail safe" probes connected to two separated electronic level relays with self-diagnosis feature, capable of indicating:

- the lack of water below the set level;
- the lack of insulation inside the probe;
- faults inside the device (self-diagnosis);
- interruption of the connection between the probe and the device in compliance with EN 12953-9 point 5.4.8.

When it trips, the system triggers a visual and an acoustic alarm and stops the boiler permanently. The boiler operation is resumed only after the manual reset and the elimination of the error by the operator.

The system is supplied completely assembled to the boiler and tested. It complies with the main European Directives:

- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- PED Directive 2014/68/EU

Accessory code:

90060050

Accessory included in the standard equipment for:
GSS 72/1 and 72/2X



ACCESSORIZED SUPPORT FOR FX - FX DUAL STEAM BOILERS



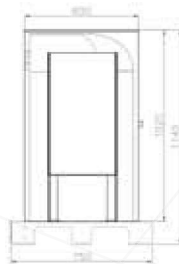
Standard equipment

- 1/2" level regulation float valve
- Regulation thermostat
- Thermometer
- Heating steam fitting complete with steam ejector
- Drain valve
- Minimum level switch
- Overflow/bleed fitting
- Condensate return fitting

Accessory base to be positioned and fastened on the right-hand side of the steam boiler, and to house, in addition to the boiler control panel, a water softener and a condensate collection tank/supply tank having the features listed below.

The softener is of the cabinet type with automatic regeneration control. The cylinder containing resin and brine tank are contained in a single appliance that also includes the mixing valve for residual hardness adjustment.

The softener is complete with latest design electronic programmer, flow sensor and turbine flow meter that allow regeneration programming in time/volume mode (after reaching of set volume at fixed time), volume (immediately after achieving set volume), or time (with the possibility of programming the frequency of regeneration or fixed days of the week at predetermined time). Also, a programmed spontaneous regeneration regardless of the actual consumption of water is possible. You can still manually start the regeneration at any time regardless of the programming operations performed.



Height	1140
Width	750
Depth	800

Accessory code: 96140100

CONDENSATE SEPARATOR FOR FX - FX DUAL STEAM BOILERS



Standard equipment:

- Steam trap
- Pressure gauge with three-way test valve

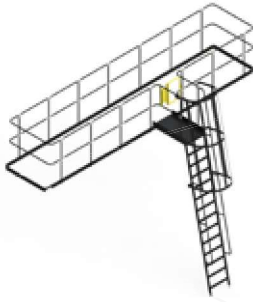
Water drops in the steam output of the boiler are a waste of energy for the plant and often cause damage to the production system that is using the steam.

The Condensate Separator is specially designed, according to the PED European Directive 2014/68/EU, separate and remove entrained water droplets from the steam: this results in the availability of dry saturated steam and herefore in the increase of the efficiency of all systems.

A steam trap is installed on the separator to discharge the condensate from the steam system.

Accessory code: 96140200

LADDER AND HANDRAIL



Accessory code:

90060060

Compatible with the following product ranges:

- SIXEN
- GX
- ASGX EN
- TNX
- TNOX

The structure consists of carbon steel profiles connected by special joints that ensure their correct coupling.

The upper handrail parapet is suitably made and fixed by housings welded to the boiler structure to ensure perfect stability and solidity.

The access ladder to the boiler platform is manufactured in compliance with the prevailing safety standards and is provided with:

- handrail welded to the structure
- skirting
- structure to prevent falling from platforms higher than 3 metres
- anti-slip inserts on the rungs
- fall-prevention gate

The gate is provided with spring-type hinges that keep it normally closed thus preventing any accidental fall towards the access ladder.

SIDE PLATFORM



Accessory code:

90060090

Ideal for heating plant rooms at a limited height that do not allow the use of ladders and handrail on the top side of the boilers.

The structure, manufactured in compliance with standard EN1090 consists of carbon steel welded sections.

The upper handrail parapet is suitably made and fixed by housings welded to the boiler structure to ensure perfect stability and solidity.

Once installed and positioned next to the boiler, it must be fixed to the floor in compliance with the prevailing regional standards.

The access ladder to the boiler platform is manufactured in compliance with the prevailing safety standards and is provided with:

- handrail welded to the structure
- skirting
- structure to prevent falling from platforms higher than 3 metres
- anti-slip inserts on the rungs
- fall-prevention gate

The gate is provided with spring-type hinges that keep it normally closed thus preventing any accidental fall towards the access ladder.

LADDER AND HANDRAIL FOR GSX BOILERS



The structure consists of carbon steel profiles connected by special joints that ensure their correct coupling.

The upper handrail parapet is suitably made and fixed by housings welded to the boiler structure to ensure perfect stability and solidity.

The access ladder to the GSX boiler platform is manufactured in compliance with the prevailing safety standards and is provided with:

- skirting
- anti-slip inserts on the rungs
- fall-prevention gate

The gate is provided with spring-type hinges that keep it normally closed thus preventing any accidental fall towards the access ladder.

The standard position of the ladder is on the boiler left side (opposite to the side accessories).

Accessory code:

90060100

The choice of using the accessory "ladder and handrail" requires to add the accessory "GSX platform" (code 90060110)

WALK-ON PLATFORM FOR GSX BOILERS



Embossed platform for the accessories located in the upper part of the GSX-series boilers.

The structure is fixed to suitable brackets on the boiler body.

The standard position is on the boiler left side (opposite to the side accessories).

Accessory code:

90060110

ETERM EASY MANAGER PANEL



Control panel with 15" touch screen for a personalised view of the heating plant room (synoptic diagram).

The panel must be connected via bus to the boiler Eterm control panels and to Nereix devices (plant and/flat metering devices)

From the graphic panel it is possible to:

- view the instantaneous values of temperature, operating status, modulation percentage values, alarms, etc.

- send starting, stopping, forcing, setpoint and other types of commands
- view graphs of the saved variables
- export images of the graphs and Excel tables of the log data
- view the alarm log

Control panel with 15" touch screen for a personalised view of the heating plant room (synoptic diagram).

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- export images of the graphs and Excel tables of the log data
- view the alarm log

The ModBus RS485 port (2 wires) is available for only one of the following options:

1- ModBus Master

ModBus slave device management, i.e. the ability to manage other devices featuring the same interface from the graphic page.

(ICI Caldaie reserves the right to check the compatibility of the devices)

2-ModBus Slave

Conversion of all eterm parameters, both in reading and in writing mode, in ModBus protocol for external supervision systems provided with such interface.

The maximum number of parameters that can be provided is 500 and they can be chosen by the customer based on the system.

The control panel is provided with a device for Internet connection:

the type of preferred connection determines the type of device installed inside the panel.

The versions/connections are divided in:

QCTETERM01	MODEM 2G/3G
QCTETERM02	LAN use
QCTETERM03	Wi-Fi

When placing your order, please confirm the type of configuration chosen and the type of connectivity available in the plant room

These connections allow to:

View and manage, from any device provided with browser, the same synoptic diagram available on the touch screen.

(Considering the constant evolution of the browser, ICI Caldaie reserves the right to indicate the fully compatible synoptic diagrams for a correct display)

Receive remote assistance for the configuration of all connected devices with considerable time and cost saving:

in case of electronic board replacement

in case of changes to the configuration required for optimisation after a test

(example of threshold setting PID regulation, etc.)

CASCADE CONTROL PANEL FOR STEAM BOILERS

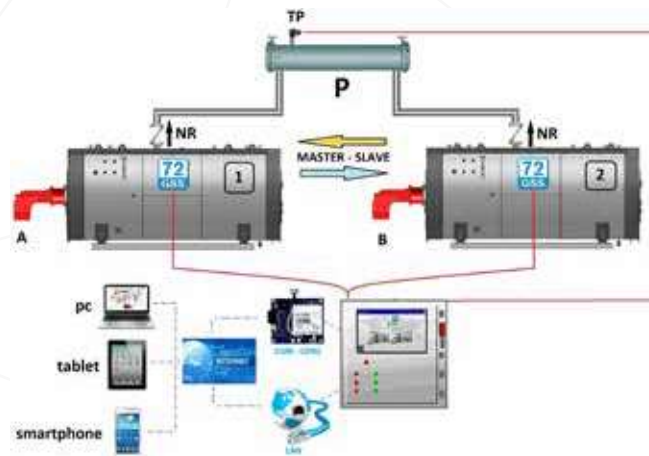
Separate control panel for managing the sequence of two or more steam boilers
It is available in three different configurations:

- EASY
- PLUS
- LOAD SHARING

running the sequence operation of steam boilers with different logics (and software).

Accessory code: 90060078

When placing your order, please confirm the type of configuration chosen and the type of connectivity available in the plant room.



EASY configuration

Boiler priority is given by setting the working pressures on each boiler, higher set pressure for the MASTER boiler and slightly lower pressure for the SLAVE, thus obtaining the boiler sequence.

PLUS configuration

The PLUS configuration manages and limits the output of the burners.

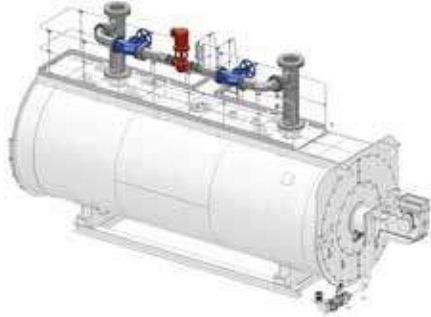
By setting a set limit and a set point for boiler operation, the sequencing panel sends the settings to all boilers in parallel. If the MASTER burner output falls below a set percentage for a certain time, the SLAVE boiler reaches a stand-by set point. Vice versa, when the MASTER burner exceeds the set percentage for a certain time, the SLAVE goes back to the normal operation set point.

LOAD SHARING configuration

By setting a P pressure set point on the manifold, and its control PID, A POWER REQUEST IS GENERATED for the steam boilers, ranging from 0 to 200% (e.g. in case of 2 boilers).

Boiler requirements.	CONFIGURATION		
	EASY	PLUS	LOAD SHARING
GSS 72/2X	■	■	■
Non-return valve	■	■	■
Pressure transducer	■	■	■
NO Feedback from the burner	■		
Feedback from the burner		■	■
Electric steam valve			■
Connectivity in heating plant room (eterm)	■	■	■

RETURN WATER TEMPERATURE CONTROL SYSTEM



To maintain the minimum return temperature and the maximum flow/return ΔT within the allowed limits, a recirculation system is installed between the flow and return connections which recirculates a suitable water flow rate in order to raise the return temperature before it goes into the boiler.

The system is supplied hydraulically and electrically mounted on top of the boiler as an integral part of it. Connecting pipework with suitable supports and electrical wiring are included.

Boilers that can be matched

ASX - ASGX EN - TNX / EN - TNOX / EN - TNOX.e / EN

Standard equipment

- Fixed speed pump suitably sized (variable speed control upon request)
- 2 shut-off valves
- Non-return valve
- Temperature probe fitted on the return pipework
- Control by PLC (if supplied) or Eterm board (if supplied) or dedicated controller inside the boiler control panel

Accessory code:

CTR-001

STEAM

SUPERHEATED WATER

THERMAL OIL

HOT WATER

ACCESSORIES

SYSTEM LAYOUTS

PMX

STANDBY THERMAL OIL PUMPING



To ensure a continuous operation of the boiler by avoiding any production downtime in case of a supply pump failure, a second backup pump is supplied and installed in parallel with the service one.

Standard equipment:

- electric pump coupled directly to an electric motor with joint, cast iron body, steel shaft with self-cooled mechanical seal, positioned on support
- 2 nodular cast iron globe valves with sealing metal bellows, mounted on suction and flow
- Steel filter mounted on pump suction
- Pump suction manometer complete with steel interception valve
- Drain valve
- General control panel electrical control comprising:
 - pump 1-pump 2 switch
 - pump 2 electrical power branch
 - pump 2 operation indicator
 - pump 2 alarm indicator

PRODUCT CODES

	Boilers	Matching models	Code
	OPX 100	PMX 100	87050100
	OPX 200	PMX 200	87050200
	OPX 300	PMX 300	87050300
	OPX 400	PMX 400	87050400
	OPX 500	PMX 500	87050500
	OPX 600	PMX 600	87050600
	OPX 800	PMX 800	87050800
	OPX 1000	PMX 1000	87051000
	OPX 1200	PMX 1200	87051200
	OPX 1500	PMX 1500	87051500
	OPX 2000	PMX 2000	87052000
	OPX 2500	PMX 2500	87052500
	OPX 3000	PMX 3000	87053000
	OPX 4000	PMX 4000	87054000
	OPX 5000	PMX 5000	87055000
	OPX 6000	PMX 6000	87056000
OPX 8000	PMX 8000	87058000	
	OPX REC 1000	PMX 1000	87051000
	OPX REC 1200	PMX 1200	87051200
	OPX REC 1500	PMX 1500	87051500
	OPX REC 2000	PMX 2000	87052000
	OPX REC 2500	PMX 2500	87052500
	OPX REC 3000	PMX 3000	87053000
	OPX REC 4000	PMX 4000	87054000
	OPX REC 5000	PMX 5000	87055000
	OPX REC 6000	PMX 6000	87056000
OPX REC 8000	PMX 8000	87058000	

GLOBAL SAFETY SYSTEM GSS 72 FOR STEAM BOILERS



Global safety system designed and manufactured to ensure a total operating safety for **steam boilers**, in accordance with applicable regulations in terms of exemption from continuous supervision up to 72 hours. The boiler equipped with this system is certified as "Assembly" in compliance with the Directive PED 2014/68/EU according to the following modules:

- **module B+F** for boilers intended for Italian market which implies testing the assembly, during its construction or use, in the presence of a Notified Body in charge. A test report is officially completed and stamped at start-up, allowing the immediate commissioning of the unit without having to wait for competent Bodies to certify, according to scheduled times, the system safety. The user is responsible for the observation of the provisions by the Ministerial Decree 329/2004 on commissioning (DECLARATION OF COMMISSIONING).

- **module B+D** for boilers intended for the foreign market.

The system consists of a series of equipment assembled and electrically and hydraulically tested at our facility, and specifically:

GSS 72/1	86900067 *
GSS 72/2X	86900073

*** ATTENTION: The GSS 72/1 system can be applied only on boilers with rated pressure equal to or lower than 12 bar**

Compatible products:

- BNX 100 - 1000
- SIXEN 350 - 2000
- GSX 350 - 2000
- GSX P 500 - 2000

Salinity control unit (TDS) containing:

- conductivity probe
- salinity regulation and control unit
- electric or pneumatic blowdown system, complete with shut-off valves.
- electrical controls in general control panel of the boiler

Automatic sludge removal unit, able to prevent the accumulation of sludge in the boiler body, composed of:

- 2-way pneumatic valve made of steel, with lever for manual operation
- PLC for adjusting opening frequency and duration
- compressed air solenoid valve
- connections and electrical controls in general control panel of the boiler

High level safety probe mounted directly in the boiler body

Boiler control panel certified for safety chain management, complete with PLC and operator panel able to monitor and display status signals and alarms, and specifically:

- boiler ON
- control panel power supply
- boiler pressure view
- hot water level view (optional)
- modulating supply management presetting (optional)
- burner control
- feed water pump status view
- steam high pressure safety shut-off
- water low level safety shut-down
- salinity alarm
- burner in operation
- burner shut-off
- cumulative alarm signal system

Sample cooler mounted directly in the boiler body

All the supplied material, with particular attention to the control panel and the electric system, is produced in compliance with the prevailing European Standards and precisely:

- Directive 2014/68/EU
- Directive 2014/35/EU
- Directive 2014/30/EU
- Standards EN 50156-1: 2006
- The entire system will be provided with the CE mark as a whole in compliance with the European Directive 2014/68/EU and tested at Your Facility with the setting of the functional parameters.

System main components and functions:

Auto controlled safety level unit containing:

- 2 low level safety probes, mechanically and electrically independent, mounted directly in the boiler body, with manual reset and self-test, complete with burner shut off relay
- connections and electrical controls in general control panel of the boiler

Safety pressure unit containing:

- "Fail Safe", manual reset safety pressure switch, complete with burner shut off relay
- connections and electrical controls in general control panel of the boiler

GLOBAL SAFETY SYSTEM GSS 72 FOR SUPERHEATED WATER BOILERS



Global safety system, designed and manufactured to ensure the total operation safety of the **superheated water boilers**, in line with the new EC Directive on the operation without supervision for 72 consecutive hours. The delivery of the global security systems for making them unmanned up to 72 hrs by ICI CALDAIE is provided with the **B+F certification module** that implies the test of the entire assembly at the manufacturing or use facility, in presence of an appointed Notified Body.

Upon commissioning, an inspection report is officially filled in and stamped to allow **the immediate start-up** of the assembly without waiting for competent Authorities to test the system safety, with the relevant required waiting time. It is the responsibility of the user to respect the Italian Ministerial Decree No. 329/2004 on commissioning (DECLARATION OF COMMISSIONING).

The system consists of a series of equipment assembled and electrically and hydraulically tested at our facility, and specifically:

Accessory code:

86900074

System main components and functions:

Safety pressure unit suitable to avoid exceeding the allowed pressure, consisting of:

- 1 safety high pressure switch of the "Fail Safe" type
- 1 safety low pressure switch of the "Fail Safe" type
- 1 burner shut-off relay for high pressure with manual reset
- 1 burner shut-off relay for low pressure with manual reset

Temperature control unit suitable to avoid exceeding the allowed pressure, consisting of:

- 1 safety high temperature thermostat of the "Fail Safe" type
- 1 burner shut-off relay for high temperature with manual reset
- 1 thermal resistance on the delivery pipe
- 1 PLC for the direct control of the burner (two-stage)
- 1 thermal resistance on the return pipe
- 1 PLC for the control of the return temperature

Water circulation control unit suitable to avoid exceeding the delta T allowed by the manufacturer, consisting of:

- 1 flow switch (set specifically according to the customer's needs)
- 1 burner shut-off relay for low circulation with manual reset

Level safety unit used to prevent a level decrease in the boiler, consisting of:

- 1 "Fail Safe" low level probe
- 1 burner shut-off relay for low level with manual reset

Management system certified to manage the safety chains, capable of monitoring, displaying and transmitting to a remote unit the status and alarm signals; it consists of:

- boiler ON
- control panel power supply
- boiler temperature view
- high pressure safety shut-down
- high temperature safety shut-down
- low level safety shut-down
- low circulation safety shut-down
- burner in operation
- burner shut-off

GLOBAL SAFETY SYSTEM GSS 72 WHB



GSS 72 global safety system designed and manufactured to ensure the total safety of **steam boilers with a thermal source other than fire**.

The delivery of the global security systems for making them unmanned up to 72 hrs by ICI CALDAIE is provided with the **B+F certification module** that implies the test of the entire assembly at the manufacturing or use facility, in presence of an appointed Notified Body.

Upon commissioning, an inspection report is officially filled in and stamped to allow **the immediate start-up** of the assembly without waiting for competent Authorities to test the system safety, with the relevant required waiting time. It is the responsibility of the user to respect the Italian Ministerial Decree No. 329/2004 on commissioning (DECLARATION OF COMMISSIONING).

Accessory code:

86900071

System main components and functions:

Level safety unit auto controlled, consisting of:

- 2 low level safety probes, mechanically and electrically independent, mounted directly in the boiler body, with manual reset and self-test, complete with burner shut off relay
- connections and electrical controls in general control panel of the boiler
- mechanical and electric parts

Safety pressure unit consisting of:

- "Fail Safe", manual reset safety pressure switch, complete with burner shut-off relay
- connections and electrical controls in general control panel of the boiler
- mechanical and electric parts

Salinity control unit (TDS) consisting of:

- conductivity probe
- salinity regulation and control unit
- electric or pneumatic blowdown system complete with shut-off valves
- electrical controls in general control panel of the boiler
- mechanical and electric parts

Automatic sludge removal unit, able to prevent the accumulation of sludge in the boiler body, composed of:

- 2-way pneumatic valve made of steel, with lever for manual operation
- PLC for adjusting opening frequency and duration
- compressed air solenoid valve
- connections and electrical controls in general control panel of the boiler
- mechanical and electric parts

High level safety probe

- mounted directly in the boiler body

Sample cooler

- mounted directly in the boiler body

BOILER MANAGEMENT MASTER PANEL



Control panel for traditional and condensing boilers, with microprocessor board and updatable firmware.

- Main switch
- Burner operation switch (0-1)
- Boiler delivery PT1000 probe
- Boiler return PT1000 probe
- Header PT1000 probe
- External probe
- Boiler remote management modem (data SIM card and antenna not included)

Accessory code

QATRXETERM01

Available for hot water boilers of the industrial line:

- TNX
- TNX EN
- TNOX
- TNOX EN
- TNOX.e
- TNOX.e EN
- TNOX BT COND
- REX - REX F (400 ÷ 600)

Electronic board main functions:

- Management of one-stage, two-stage, three-stage, modulating burners with three-point control 0-10 Volt or 4-20 mA
- Delivery temperature climate control with optional external probe
- 2 programmable outputs (230 Vac. / 2 A) that can be configured for:
 - boiler circulation pump (with optional probe or thermostat)
 - boiler circulation pump
 - anti-condensation circulation pump
 - direct zone system circulation pump
 - mixed zone circulation pump
 - cascade header circulation pump
- Boiler PT1000 probe input
- 2 programmable inputs that can be configured for:
 - PT1000 probes (water heater, mixed zone, flue gases, etc.)
 - digital enabling
 - Programmable input that can be configured for:
 - NTC probe
 - digital enabling
 - Management of the mixing valve with 0-10 V control (if not already used for a modulating burner with 0-10 Volt control)
 - Management of three-point mixing valve (if not already used for a single-stage or modulating burner with three-point control)
- 0-10 Volt input that can be programmed for:
 - digital enabling
 - remote control of the boiler temperature
 - display of 0-10 Volt transducers
 - Cascade management (with master function)
 - Pump anti-seize protection
 - Thermal inertia discharge
 - Flue gas probe control
 - Anti-freeze protection
 - Replenishing litre meter

Communication:

- Modem connector
- USB socket
- RS485 to connect the board to the Eterm Master unit (if any) (img)
- RS485 connection to connect the board to any QATRXETERM02 and QETERM02 slave units
- 230 Vac supply

BOILER MANAGEMENT SLAVE PANEL



Control panel for traditional and condensing boilers, with microprocessor board and updatable firmware.

- Main switch
- Burner operation switch (0-1)
- Boiler delivery PT1000 probe
- Boiler return PT1000 probe

Accessory code **QATRXETERM02**

Available for hot water boilers of the industrial line:

- TNX
- TNX EN
- TNOX
- TNOX EN
- TNOX.e
- TNOX.e EN
- TNOX BT COND
- REX - REX F (400 ÷ 600)

Electronic board main functions:

- Management of one-stage, two-stage, three-stage, modulating burners with three-point control 0-10 Volt or 4-20 mA
- Delivery temperature climate control with optional external probe
- 2 programmable outputs (230 Vac. / 2 A) that can be configured for:
 - boiler circulation pump (with optional probe or thermostat)
 - boiler circulation pump
 - anti-condensation circulation pump
 - direct zone system circulation pump
 - mixed zone circulation pump
 - cascade header circulation pump
- Boiler PT1000 probe input
- 2 programmable inputs that can be configured for:
 - PT1000 probes (water heater, mixed zone, flue gases, etc.)
 - digital enabling
 - Programmable input that can be configured for:
 - NTC probe
 - digital enabling
 - Management of the mixing valve with 0-10 V control (if not already used for a modulating burner with 0-10 Volt control)
 - Management of three-point mixing valve (if not already used for a single-stage or modulating burner with three-point control)
- 0-10 Volt input that can be programmed for:
 - digital enabling
 - remote control of the boiler temperature
 - display of 0-10 Volt transducers
 - Pump anti-seize protection
 - Thermal inertia discharge
 - Flue gas probe control
 - Anti-freeze protection
 - Replenishing litre meter

Communication:

- Modem connector
- USB socket
- RS485 to connect the board to the QATRXETERM01 Master unit (if any)
- 230 Vac supply

STEAM

SUPERHEATED WATER

THERMAL OIL

HOT WATER

ACCESSORIES

SYSTEM LAYOUTS

SUPERHEATED WATER BOILER MANAGEMENT MASTER PANEL



Control panel for superheated water boilers, with microprocessor board and updatable firmware.

Main switch
Boiler delivery PT1000 probe
Boiler return PT1000 probe
Header PT1000 probe
External probe
Boiler remote management modem
(data SIM card and antenna not included)

Accessory code

QASXENETERM01

Compatible with superheated water boilers of the industrial line:

- ASX
- ASGX EN

Electronic board main functions:

- Management of one-stage, two-stage, three-stage, modulating burners with three-point control 0-10 Volt or 4-20 mA
- Delivery temperature climate control with optional external probe
- 2 programmable outputs (230 Vac. / 2 A) that can be configured for:
 - boiler circulation pump
 - anti-condensation circulation pump
- Boiler PT1000 probe input
- 2 programmable inputs that can be configured for:
 - PT1000 probes
 - digital enabling
- Programmable input that can be configured for:
 - NTC probe
 - digital enabling
- Management of the mixing valve with 0-10 V control (if not already used for a modulating burner with 0-10 Volt control)
- Management of three-point mixing valve (if not already used for a single-stage or modulating burner with three-point control)
- 0-10 Volt input that can be programmed for:
 - digital enabling
 - display of 0-10 Volt transducers
- Cascade management (to be specified in relation to the accessories matched to the boiler)
- Flue gas probe control
- Anti-freeze protection

Communication:

- Modem connector
- USB socket
- RS485 to connect the board to the Master (QASXENETERM01/Nereix)
- RS485 connection to connect the board to any slaves units (QASXENETERM01/QASXENETERM02)
- 230 Vac supply

SUPERHEATED WATER BOILER MANAGEMENT SLAVE PANEL



Control panel for superheated water boilers with microprocessor board and updatable firmware

- Main switch
- Burner operation switch (0-1)
- Boiler delivery PT1000 probe
- Boiler return PT1000 probe

Accessory code

QASXENETERM02

Compatible with superheated water boilers of the industrial line:

- ASX
- ASGX EN

Electronic board main functions:

- Management of one-stage, two-stage, three-stage, modulating burners with three-point control 0-10 Volt or 4-20 mA
- Delivery temperature climate control with optional external probe
- 2 programmable outputs (230 Vac. / 2 A) that can be configured for:
 - boiler circulation pump
 - anti-condensation circulation pump
 - cascade header circulation pump
- Boiler PT1000 probe input
- 2 programmable inputs that can be configured for:
 - PT1000 probes (water heater, mixed zone, flue gases, etc.)
 - digital enabling
- Programmable input that can be configured for:
 - NTC probe
 - digital enabling
- Management of the mixing valve with 0-10 V control (if not already used for a modulating burner with 0-10 Volt control)
- Management of three-point mixing valve (if not already used for a single-stage or modulating burner with three-point control)
- 0-10 Volt input that can be programmed for:
 - digital enabling
 - display of 0-10 Volt transducers
- Cascade management (with slave function)
- Flue gas probe control
- Anti-freeze protection

Communication:

- Modem connector
- USB socket
- RS485 to connect the board to the Master (QASXENETERM01/Nereix)
- RS485 connection to connect the board to any slaves units (QASXENETERM01/QASXENETERM02)
- 230 Vac supply

STEAM

SUPERHEATED WATER

THERMAL OIL

HOT WATER

ACCESSORIES

SYSTEM LAYOUTS