2 priedas prie pirkimo dokumentų

UAB „Termolink“
(Tiekėjo pavadinimas)
Uždaroji akcinė bendrovė, adresas: B. Brazdžionio g. 2, LT-47239 Kaunas, Tel.: 8-37 295206; registro tvarkytojas: VĮ Registrų centras; įm. kodas: 301740693, PVM kodas: LT100004141917
(Juridinio asmens teisinė forma, buveinė, kontaktinė informacija, registro, kuriame kaupiami ir saugomi duomenys apie tiekėją, pavadinimas, juridinio asmens kodas, pridėtinės vertės mokesčio mokėtojo kodas, jei juridinis asmuo yra pridėtinės vertės mokesčio mokėtojas)

AB „Panevėžio energija“_____
Adresatas (perkantysis subjektas)

**PASIŪLYMAS**
**DĖL MIKOLIŠKIO KATILINĖS VANDENS ŠILDYMO KATILO SU DEGIKLIU PIRKIMO**

2024-05-20 Nr. 20240308.7-B
(Data)

| | |
|---|---|
| Tiekėjo pavadinimas | UAB „Termolink“ |
| Tiekėjo adresas | B. Brazdžionio g. 2, LT-47239 Kaunas |
| Už pasiūlymą atsakingo asmens vardas, pavardė | |
| Telefono numeris | |
| El. pašto adresas | |

Šiuo pasiūlymu pažymime, kad sutinkame su visomis pirkimo sąlygomis, nustatytomis:
1) mažos vertės skelbime;
2) kituose pirkimo dokumentuose (jų paaiškinimuose, papildymuose).

Atsižvelgdami į pirkimo dokumentuose išdėstytas sąlygas, teikiame savo pasiūlymą bei duomenis apie mūsų pasirengimą įvykdyti numatomą sudaryti pirkimo sutartį.

**Mes siūlome šią prekę:**

1 lentelė

| Eil. Nr. | Pavadinimas | Kiekis, kompl. | Kaina, Eur (be PVM) |
|---|---|---|---|
| 1. | **Mikoliškio katilinės vandens šildymo katilas su degikliu** | 1 | 21 030,00 |
| | | **PVM 21 proc.** | 4 416,30 |
| | | **VISO SU PVM** | 25 446,30 |

Pasiūlymo kaina yra dvidešimt vienas tūkstantis trisdešimt Eur 00 ct ir PVM yra keturi tūkstančiai keturi šimtai šešiolika Eur 30 ct, kaina iš viso yra dvidešimt penki tūkstančiai keturi šimtai keturiasdešimt šeši Eur 30 ct.

Prekė pristatoma ir priduodama per 70 dienų po Sutarties pasirašymo.

Vykdant sutartį pasitelksime šiuos subtiekėjus*:

2 lentelė

| **Eil. Nr.** | **Subtiekėjo pavadinimas** | **Tiekimo apimtis, (EUR be PVM/proc.)** |
|---|---|---|
| 1 | 2 | 3 |
| | | |

* dalyvis savo pasiūlyme privalo nurodyti, kokiai pirkimo sutarties daliai (apimtis eurais ar dalis procentais) ketinama pasitelkti subtiekėjus ir kokius subtiekėjus, jeigu jie yra žinomi;
Jei subtiekėjas nėra žinomas pildomi šios lentelės 3 stulpelis

Teikdami šį pasiūlymą, mes patvirtiname, kad į mūsų siūlomą kainą įskaičiuotos visos išlaidos ir visi mokesčiai, ir kad mes prisiimame riziką už visas išlaidas, kurias, teikdami pasiūlymą ir laikydamiesi pirkimo dokumentuose nustatytų reikalavimų, privalėjome įskaičiuoti į pasiūlymo kainą.

Taip pat mes patvirtiname, kad visa pasiūlyme pateikta informacija yra teisinga, atitinka tikrovę ir apimą viską, ko reikia visiškam ir tinkamam sutarties įvykdymui.

Siūloma prekė visiškai atitinka pirkimo dokumentuose nurodytus reikalavimus.

**Kartu su pasiūlymu pateikiami šie dokumentai:**

| **Eil. Nr.** | **Pateikto dokumento pavadinimas** | **Ar dokumentas konfidencialus (Taip/Ne)** | **Konfidencialios informacijos pagrindimas (paaiškinama, kuo remiantis nurodytas dokumentas ar jo dalis yra konfidencialūs)*** |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |

*Pildyti tuomet, jei bus pateikta konfidenciali informacija, kaip ji apibrėžta **Įstatymo 32 straipsnio 2 dalyje**. Tiekėjas negali nurodyti, kad visas pasiūlymas yra konfidencialus.

Pasiūlymas galioja iki termino, nustatyto pirkimo dokumentuose.

| Direktorius | | |
|---|---|---|
| (Tiekėjo arba jo įgalioto asmens pareigų pavadinimas) | (Parašas) | (Vardas ir pavardė) |

2b priedas prie pirkimo dokumentų

Nacionalinio saugumo reikalavimų atitikties
deklaracijos tipinė forma,
patvirtinta Viešųjų pirkimų tarnybos
direktoriaus 2022 m. gruodžio 29 d.
įsakymu Nr. 1S-233

UAB „Termolink“
(*tiekėjo pavadinimas*)
AB „Panevėžio energija“
(*adresatas (perkančiojo subjekto pavadinimas)*)

**NACIONALINIO SAUGUMO REIKALAVIMŲ ATITIKTIES DEKLARACIJA**

2024 m. gegužės 6 d. Nr. KTD-018273
Kaunas
*(Sudarymo vieta)*

Aš, direktorius _____ ,
*(tiekėjo vadovo ar jo įgalioto asmens pareigų pavadinimas, vardas ir pavardė)*
patvirtinu, kad mano vadovaujamas (-a) (atstovaujamas (-a)) UAB „Termolink“ _____ ,
*(tiekėjo pavadinimas)*
dalyvaujantis (-i) AB „Panevėžio energija“ _____
*(perkančiojo subjekto pavadinimas)*
vykdomame pirkime „Mikoliškio katilinės vandens šildymo katilo su degikliu pirkimas”, pirkimo Nr. 720099, paskelbtame 2024-04-30 _____, atitinka toliau nurodomus reikalavimus:
*(pirkimo objekto pavadinimas, pirkimo numeris, pirkimo paskelbimo CVP IS data*)

[×] tiekėjas neturi interesų, galinčių kelti grėsmę nacionaliniam saugumui – vadovaujantis VPĮ 47 straipsnio 9 dalimi, jis pats, jo subtiekėjai ar ūkio subjektai, kurių pajėgumais remiamasi ar juos kontroliuojantys asmenys nėra registruoti (jeigu tiekėjas, jo subtiekėjas, ūkio subjektas, kurio pajėgumais remiamasi, ar kontroliuojantis asmuo yra fizinis asmuo – nuolat gyvenantis ar turintis pilietybę) VPĮ 92 straipsnio 14 dalyje numatytame sąraše nurodytose valstybėse ar teritorijose.
(*pirkimo dokumentų 1.8. punktas*)
*(pirkimo dokumentų punktai)*

[×] tiekėjo siūlomos prekės nekelia grėsmės nacionaliniam saugumui – vadovaujantis Lietuvos Respublikos pirkimų, atliekamų vandentvarkos, energetikos, transporto, ar pašto paslaugų srities perkančiųjų subjektų, įstatymo (toliau – PĮ) 50 straipsnio 9 dalies 1 punktu, prekių gamintojas ar jį kontroliuojantis asmuo nėra registruoti (jeigu gamintojas ar jį kontroliuojantis asmuo yra fizinis asmuo – nuolat gyvenantis ar turintis pilietybę) VPĮ 92 straipsnio 14 dalyje numatytame sąraše nurodytose valstybėse ar teritorijose. (*pirkimo dokumentų 2.2. punktas*)
*(pirkimo dokumentų punktai)*

[×] tiekėjo siūlomos teikti paslaugos nekelia grėsmės nacionaliniam saugumui – vadovaujantis PĮ 50 straipsnio 9 dalies 2 punktu, paslaugų teikimas nebus vykdomas iš VPĮ 92 straipsnio 14 dalyje numatytame sąraše nurodytų valstybių ar teritorijų. (*pirkimo dokumentų 2.2. punktas*)
*pirkimo dokumentų punktai)*

Patvirtinu, kad šie duomenys yra teisingi ir aktualūs pasiūlymo pateikimo dieną.

Suprantu, kad, vadovaudamasis PĮ 52 straipsnio 4 dalimi perkantysis subjektas, bet kuriuo pirkimo procedūros metu gali paprašyti kandidatų ar dalyvių pateikti visus ar dalį dokumentų, patvirtinančių atitiktį PĮ 50 straipsnio 9 dalies reikalavimams, jeigu tai būtina siekiant užtikrinti tinkamą pirkimo procedūros atlikimą.

Suprantu, kad jeigu pagal vertinimo rezultatus pasiūlymas bus pripažintas laimėjusiu, turės būti pateikti perkančiojo subjekto nurodyti atitiktį nacionalinio saugumo reikalavimams patvirtinantys dokumentai.

| Direktorius | | |
|---|---|---|
| (Tiekėjo arba jo įgalioto asmens pareigų pavadinimas) | (Parašas) | (Vardas ir pavardė) |

2a priedas prie pirkimo dokumentų

# SIŪLOMOS PREKĖS ATITIKIMO TECHNINĖS SPECIFIKACIJOS REIKALAVIMAMS DEKLARACIJA

| **Eil. Nr.** | **Parametrai** | **Matavimo vnt.** | **Parametrai** | **Tiekėjo siūlomi prekės parametrai*** | **Tiekėjo pateiktų siūlomos prekės parametrų pagrindimas** (*pateikiama nuoroda į gamintojo techninę dokumentaciją ir/ar techninės dokumentacijos psl. ir pastraipa dėl kiekvieno reikalaujamo parametro** atitikimo)* |
|---|---|---|---|---|---|
| **I.** | **Techniniai reikalavimai vandens šildymo katilui:** | | | | |
| 1. | ***Vandens šildymo katilas*** | kompl. | 1 | *Nurodoma tiksli markė, žymėjimas* | ICI MONOLITE 555 GT |
| 1.1. | Katilo nominali šiluminė galia (kartu su kondensaciniu ekonomaizeriu) | kW | 500 ÷ 550 | 507,1 kW | Katilo ICI MONOLITE 555 GT aprašymas |
| 1.2. | Katilo vandens nominalus slėgis | bar. | ne mažiau kaip 6,0 | 6 bar | Katilo ICI MONOLITE 555 GT aprašymas |
| 1.3. | Maksimali vandens temperatūra už katilo | ºC | ne mažiau kaip 85 | 100 ºC | Katilo ICI MONOLITE 555 GT aprašymas |
| 1.4. | Naudingo veiksmo koeficientas (*skaičiuojant nuo žemutinės kuro šiluminės vertės*) visame darbo diapazone bet kuria kuro rūšimi | % | ne mažiau kaip 98 | 98,5 % | Katilo ICI MONOLITE 555 GT aprašymas |
| 1.5. | Našumo reguliavimo diapazonas | % | 30÷100 | 30-100 % | Degiklio Riello RX700 aprašymas |
| 1.6. | Papildoma katilo komplektacija | | Katilo apsauginiai vožtuvai, manometrai, termometrai | Katilo apsauginiai vožtuvai, manometrai, termometrai | Papildomos įrangos aprašymas |
| **II.** | **Techniniai reikalavimai degikliui:** | | | | |
| 2. | ***Degiklis*** | vnt. | 1 | *Nurodoma tiksli markė, žymėjimas* | Riello RX700 |
| 2.1. | Degiklio darbas | - | Automatizuotas | Automatizuotas | Degiklio Riello RX700 aprašymas |
| 2.2. | Degiklio našumo reguliavimo diapazonas | % | 30÷100 | 30÷100 | Degiklio Riello RX700 aprašymas |

| Eil. Nr. | Parametrai | Matavimo vnt. | Parametrai | Tiekėjo siūlomi prekės parametrai* | Tiekėjo pateiktų siūlomos prekės parametrų pagrindimas (*pateikiama nuoroda į gamintojo techninę dokumentaciją ir/ar techninės dokumentacijos psl. ir pastraipa dėl kiekvieno reikalaujamo parametro** atitikimo)* |
|---|---|---|---|---|---|
| 2.3. | Automatinis našumo reguliavimas: Moduliacinis galios valdymas | - | Kuro padavimo didinimas ar mažinimas proporcingai šiluminiam apkrovimui, katilo našumo reguliavimas, priklausomai nuo užsiduotos vandens temperatūros už katilo. | Kuro padavimo didinimas ar mažinimas proporcingai šiluminiam apkrovimui, katilo našumo reguliavimas, priklausomai nuo užsiduotos vandens temperatūros už katilo. | Katilo ICI MONOLITE 555 GT aprašymas |
| 2.4. | Turi būti galimybė katilo darbo būsenos nustatymui nuskaityti signalus iš katilo ir degiklio valdiklių. | Diskretiniai signalai (reliniai) | dirba/nedirba/avarija (išsijungus, paveikus technologinei apsaugai). | dirba/nedirba/avarija (išsijungus, paveikus technologinei apsaugai). | Katilo ICI MONOLITE 555 GT aprašymas |
| 2.5. | Degiklis turi tikti kompleksiniam darbui su katilu visame našumo diapazone. | | | Taip | Katilo ICI MONOLITE 555 GT aprašymas |
| 2.6. | Degiklis komplekte su katilu dirbdami visame našumo diapazone turi tenkinti išmetamų teršalų reikalavimus. | | | Tenkina | Katilo ICI MONOLITE 555 GT aprašymas |
| 2.7. | Degiklis turi turėti išeinamos iš katilo temperatūros palaikymo pagal lauko oro temperatūrą, valdymo sistemą | | | Turi | Katilo ICI MONOLITE 555 GT aprašymas |
| **III.** | ***PAPILDOMOS SĄLYGOS DEGIKLIO IR KATILO PIRKIMUI*** | | | | |
| 3.1. | Turi būti galimybė nuotoliniu būdu stebėti degiklio ir katilo darbo parametrus realiame laike | | | Yra | Katilo ICI MONOLITE 555 GT aprašymas |
| 3.2. | Įranga turi turėti CE ženklinimą. Elektros varikliai turi atitikti Europos sąjungos direktyvų nurodytus efektyvumo reikalavimus | | | Turi | - |
| 3.3. | Esamas dujų slėgis prieš katilo degiklį 9 kPa, prieš reguliatorių 300 kPa, esant netinkamam slėgiui prieš naujo katilo degiklį sukomplektuoti dujų slėgio reguliavimo įrangą | | | Sukomplektuotas dujų stabilizatorius | Papildomos įrangos aprašymas |
| 3.4. | Degiklio automatikos skydų sandarumo apsaugos klasė ne mažiau kaip IP54 | | | Yra | - |
| 3.5. | Pateikta įranga turi atitikti EĮĮT ir TET reikalavimus | | | Atitinka | - |

* pildoma tik lietuvių kalba

** jei neaktualu, nepildoma

Direktorius _____ _____ _____

(Deklaraciją sudariusio asmens pareigų pavadinimas) (Parašas) (Vardas ir pavardė)

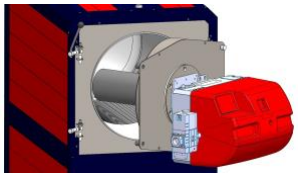
# PRODUCT LIST

**Monolite 555 GT**

AISI 316 Ti stainless steel, single pass horizontal combustion chamber, vertical heat exchanger, condensation MONOLITE GT Boiler is able to produce hot water with a maximum temperature of 100°C. Equipped with pre-mix gas fuel burner with a cylindrical heat radiating body and low NOx emissions.
**- Efficienty ★★★★ -**

Some of the product's main features are related below:

- **frame manufactured** out of steel vertical profile structure, complete with floor support.
- **large cylindrical combustion chamber** manufactured from AISI 316 Ti stainless steell,TIG pulse welded, able to withstand acid condensate attack.
- **AISI 316 Ti anti acid stainless steel**, vertical heat exchange surfaces,TIG welded, attached perpendicularly to the combustion chamber, consisting of stainless steel plates printed with special conformity specifications in order to increase heat exchange surface, and facilitate condensate droplet formation , allowing adequate drainage. The heat exchange surface vertical arrangement also facilitates condensate drainage, ensuring an effective plate self-cleaning function.
- **welding carried** out with TIG method, a method which does not require weld material, and therefore guarantees stainless steel main mechanical characteristics, without sacrificing corrosion resistance to acid condensation.
- **flanged** flow connection and two system return connections for boiler differential temperature input and ensure minimum possible temperature in lowest point of the condensation curve and then take maximum advantage from the condensing process even in the presence of medium-high temperature returns.
- **exhaust gas chamber** able to collect resulted condensate and discharge it through a water trap connected to a neutralizer (where provided) to the waste water drainage system.
- **high water content** and low thermal load.
- **heat dispersion surface insulation** with thick glass wool mattress, protected with steel varnished panels that can be easily removed
- **front door** with reversible steel sheet opening thermally insulated with ceramic fiber.

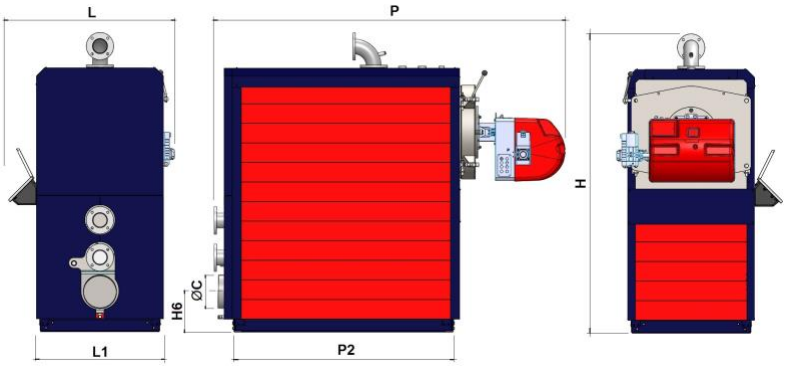


- **pre-mix, modulating, radiating burner**, power modulation between minimum and maximum power depending on instantaneous heat load requirement; allows maximum acoustic comfort and low pollutant emissions.
The burner **does not include the control device** for system leakage test, available on request as an option.
The verification of the obligatoriness of this accessory for the country of installation is is the **customer's responsibility.**

**ATTENTION**: The control panel is sold separately. When ordering, indicate the code among those proposed in the catalogue

**Standard equipment:**
- Complete insulating casing
- Pre-mix burner

**OVERALL DIMENSIONS**

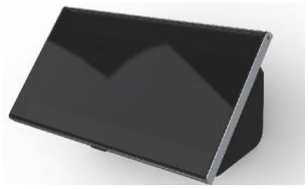



## PRODUCT TECHNICAL DATA TABLE

| Feature | U.M. | Value |
|---|---|---|
| Maximum heat output | kW | 507,1 |
| Maximum heat input | kW | 514,8 |
| Efficiency at 100% load (ref.C.O.P) | % | 98,5 |
| Maximum heat output at 50/30°C | kW | 555 |
| Efficiency at 100% load (NCV) (50/30°C) | % | 107,8 |
| Efficiency at 30% load (NCV) | % | 98,5 |
| Efficiency at 30% load (NCV) (50/30°C) | % | 109 |
| Flue gas resistance | mbar | 3,6 |
| NOx – at max capacity / G20 (PCI - Hi). 9.45 kW/m3 (15°C, 1013 mbar) | mg/kWh | 50 |
| G20 gas pressure (min-max) input to the burner | mbar | 17-60 |
| Design pressure | bar | 6 |
| Hydraulic test pressure | bar | 7,5 |
| Max heating temperature | °C | 100 |
| Total water volume | l | 469 |
| Heating surface | mq | 17,20 |
| L1 - Width Body Boiler | mm | 974 |
| Max design temperature | °C | 110 |
| Total weight (empty) | kg | 1201 |
| DIMENSIONS: | | |
| H - Height | mm | 2294 |
| H6 | mm | 310 |
| L - Total Width | mm | 1188 |
| P - Length | mm | 2452 |
| P2 | mm | 1436 |
| Øc - Flue connection diameter | mm | 250 |
| Inside diameter combustion chamber | mm | 688 |
| Length combustion chamber – reversing chamber | mm | 1410 |

NOTE = The weights indicated in this offer may vary depending on the accessories chosen upon ordering and any required customisations. Request the equipment weight to the sales office after the order.

**Boiler control panel with eterm ® electronic board**

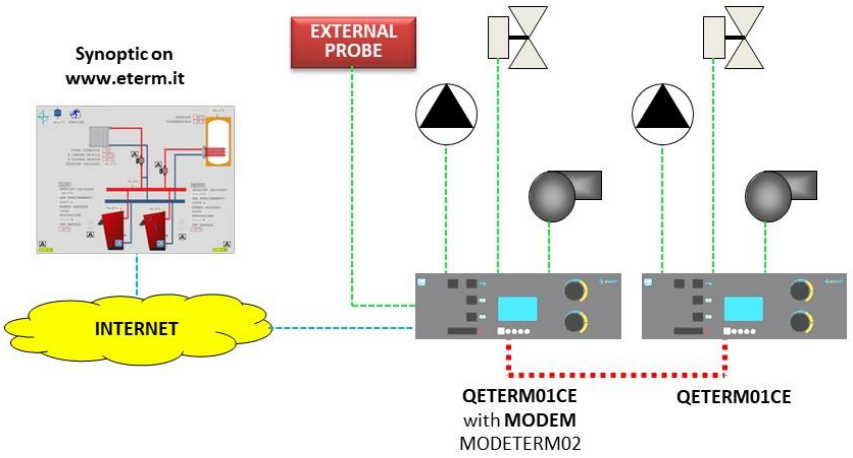


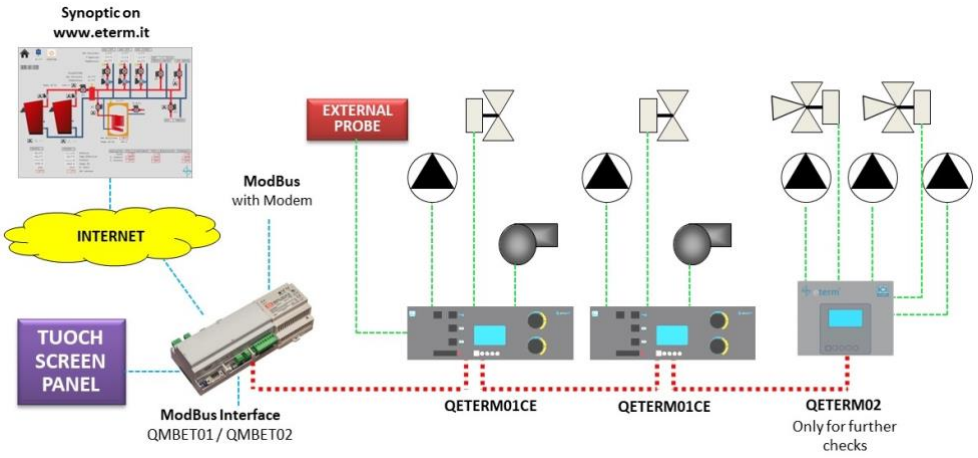
**Description :**

The panel is able to manage a stage or modulating burner and can control, within the limits of the available outputs, pumps and plant room valves.
It is complete with regulation and safety thermostats that also allow “manual” operation through the activation of proper electro-mechanical switches.
Thanks to the updatable software, eterm ® controller features a number of functions that ICI Caldaie may implement for continuous product improvement.

**Main functions:**

- Possibility of remote control (with optional modem or connection to other master devices with modem);
- Possibility of cascade operation with other panels of the same series;
- Possibility of managing QETERM02 expansions for control of other pumps or valves;
- Possibility of ModBus connection with optional interface;
- Delivery temperature climate control (with optional external probe);
- Management of 2 configurable outputs for pumps and valves
- Mixing valve management



**Power source**
230 Vac

**Dimensions**
- 170 x 170 x 500 mm.

**Standard equipment:**
- Main switch
- Burner operation switch (Manual / Off / Automatic)
- Operation switch of the 2 programmable outputs (Manual / Off / Automatic)
- 2 Regulation thermostats
- Safety thermostat
- Thermometer
- Microprocessor electronic board
- Boiler probe

**Interface ModBus eterm with 4G GSM/GPRS modem**

**Interface for eterm devices:**

QMBET05: Interface ModBus eterm with 4G modem GSM/GPRS

By means of a Bus system (proprietary protocol) it is possible to connect

- Boiler management control panels
- System management control panels

With eterm Bus it is possible to manage from PC all devices.
In local mode by RS232 or USB.
In remote mode by the communication device present.

Data can be managed through:
- etermPCmanager, software to be installed on a connectable PC
- Via USB or RS232
- Via internet
- etermEASYmanager, WEB software available on **www.eterm.it** for a synoptic view of the plant

**QMBET05 are equipped with** n 4 inputs for meters with pulse output, and one NTC input for external probe (this information will be available to all slave devices in the system)

**ModBus master function**
After appropriate configuration QMBET05 can control ModBus slave devices.
This in order to transmit, to etermEASYmanager web software, data from ModBus devices.
Connection RS485 – RTU 2 Two wires

**ModBus slave function**
After appropriate configuration QMBET05 can be used as a slave of a ModBus device
This in order to manage all connected eterm devices via ModBus (both in read and write mode).
Connection RS485 – RTU 2 Two wires

**Accessories:**

| | |
|---|---|
| Power adapter 24 Vdc: | Code ALQMASTER |
| External temperature probe: | Code 17120012 |
| 4G waterproof antenna for QMBET05: | Code ANTETERM03 |
| 4G antenna with magnetic base for QMBET05: | Code ANTETERM04 |

**Important note: one of the two above mentioned antennas is essential for the QMBET05 (Interface ModBus eterm with 4G modem GSM/GPRS).**

**Interface for eterm devices**

**Technical data:**

| | |
|---|---|
| Tension: | 24 Vcc +/- 10% |
| Power consumption: | 120 mA |
| Working temperature: | 0 ÷ 50 °C |
| Storage temperature: | -20 ÷ 60 °C |
| Relative humidity (not condensing): | 90 % |
| Dimensions: | 160 x 90 x 60 mm |

**QMBET05**

**ANTETERM03**

**ANTETERM04**

**17120012**

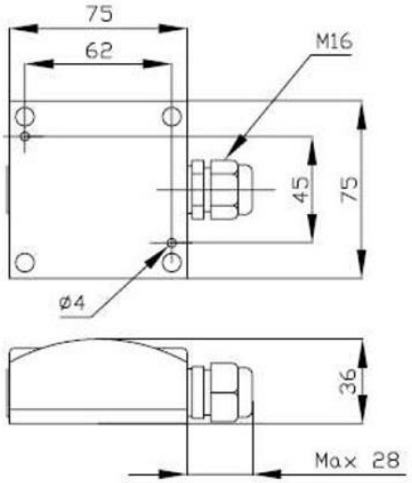
**External probe**

Information regarding outside temperature transferred from the probe to the master device allows:

• Render available information to possible ambient command units (ICI KRONOS) e to possible connected **eterm** ® equipment
• Set climatic curve for automatic adjustment of the delivery temperature (to “CLIMA” metering units)
• Interact with central pumps and heat generators.

Range value -50°C / +110°C
Precision +/- 0,3 K
Dimension 75x75x36 mm.

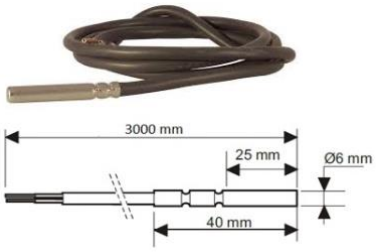
IP65




| Temp.°C | kΩ |
|---|---|
| -50 | 329,5 |
| -40 | 188,5 |
| -30 | 111,3 |
| -20 | 67,77 |
| -10 | 42,47 |
| 0 | 27,28 |
| 1 | 26,13 |
| 2 | 25,03 |
| 3 | 23,99 |
| 4 | 23,00 |
| 5 | 22,05 |
| 6 | 21,16 |
| 7 | 20,30 |
| 8 | 19,49 |
| 9 | 18,70 |
| 10 | 17,96 |
| 11 | 17,24 |
| 12 | 16,56 |
| 13 | 15,80 |
| 14 | 15,28 |
| 15 | 14,69 |
| 16 | 14,12 |
| 17 | 13,58 |
| 18 | 13,06 |
| 19 | 12,56 |

| Temp.°C | kΩ |
|---|---|
| 20 | 12,08 |
| 21 | 11,63 |
| 22 | 11,20 |
| 23 | 10,78 |
| 24 | 10,38 |
| 25 | 10,00 |
| 26 | 9,63 |
| 27 | 9,28 |
| 28 | 8,94 |
| 29 | 8,62 |
| 30 | 8,31 |
| 35 | 6,94 |
| 40 | 5,82 |
| 45 | 4,91 |
| 50 | 4,16 |
| 60 | 3,02 |
| 70 | 2,22 |
| 80 | 1,66 |
| 90 | 1,26 |
| 100 | 0,97 |
| 110 | 0,75 |

**Temperature probe PT1000 (immersion probe for water heaters, mixed zone, solar panels, etc.)**




Temperature probe PT1000 for thermal probe pocket

Range value -50°C / +200°C
Precision +/- 0,3 K
Can be used, in eterm system, as:
- Cascade sensor
- Tank sensor
- Mixed circuit sensor
- Return sensor
- Solar Panel sensor

- etc.

| Temp. °C | Ω |
|---|---|
| -50 | 803,07 |
| -40 | 842,71 |
| -30 | 882,22 |
| -20 | 921,60 |
| -10 | 960,86 |
| -5 | 980,45 |
| -4 | 984,36 |
| -3 | 988,27 |
| -2 | 992,18 |
| -1 | 996,09 |
| 0 | 1000,00 |
| 1 | 1003,91 |
| 2 | 1007,81 |
| 3 | 1011,72 |
| 4 | 1015,62 |
| 5 | 1019,53 |

| Temp. °C | Ω |
|---|---|
| 10 | 1039,02 |
| 20 | 1077,93 |
| 30 | 1116,72 |
| 40 | 1155,39 |
| 50 | 1193,95 |
| 60 | 1232,39 |
| 70 | 1270,72 |
| 80 | 1308,93 |
| 90 | 1347,02 |
| 100 | 1385,00 |
| 110 | 1422,86 |
| 120 | 1460,61 |
| 130 | 1498,24 |
| 140 | 1535,75 |
| 150 | 1573,15 |
| 160 | 1610,43 |
| 170 | 1647,60 |
| 180 | 1684,65 |
| 190 | 1721,58 |
| 200 | 1758,40 |

**Neutralizer**

The condensate neutralization system is a completion accessory to condensing heat generators.
Acid condensate must be neutralized with calcium carbonate, returning pH values above 7 and thus making possible condensate discharge along with domestic water wate as required by current laws. Is available in two container complete versions and 25 kg of calcium carbonate grains.

# RX 180÷1000 S/PV ULN SERIES

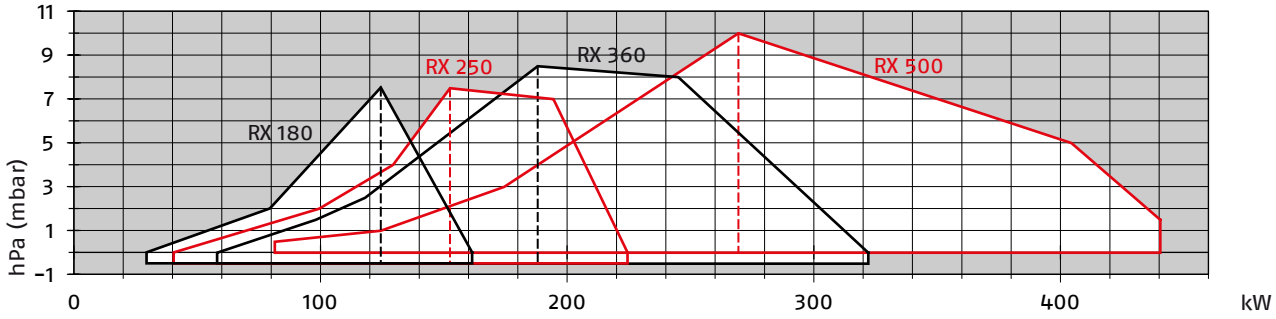
In order to comply the increasing demand of very low NOx emissions, Riello has developed a new product range for medium and high power combustion, based on PREMIX low emission technology, suitable to achieve the most restrictive emission limits.
Riello RX S/PV ULN Premix Range from 30 to 970 is based on a platform with Brushless Motors, which provides high modulation ratios and low pollution emissions, representing the ideal solution for condensing boilers and industrial processes.
In the RX S/PV ULN range, the gas and air are delivered into the fan simultaneously and the mixing occurs inside the aspiration circuit; the ventilation structures are airtight in order to avoid air-gas leaks.
The Ultra Low NOx emission performance is achieved while maintaining high reliability of operation; a high ignition reliability is assured by a Pilot Ignition system.
All burner's components are integrated in order to facilitate and make extremely easy the installation and maintenance.


| | | | | |
|---|---|---|---|---|
| RX 180 S/PV ULN | 30 | ÷ | 160 | kW |
| RX 250 S/PV ULN | 40 | ÷ | 225 | kW |
| RX 360 S/PV ULN | 60 | ÷ | 325 | kW |
| RX 500 S/PV ULN | 80 | ÷ | 440 | kW |
| RX 700 S/PV ULN | 140 | ÷ | 630 | kW |
| RX 850 S/PV ULN | 170 | ÷ | 790 | kW |
| RX 1000 S/PV ULN | 180 | ÷ | 970 | kW |

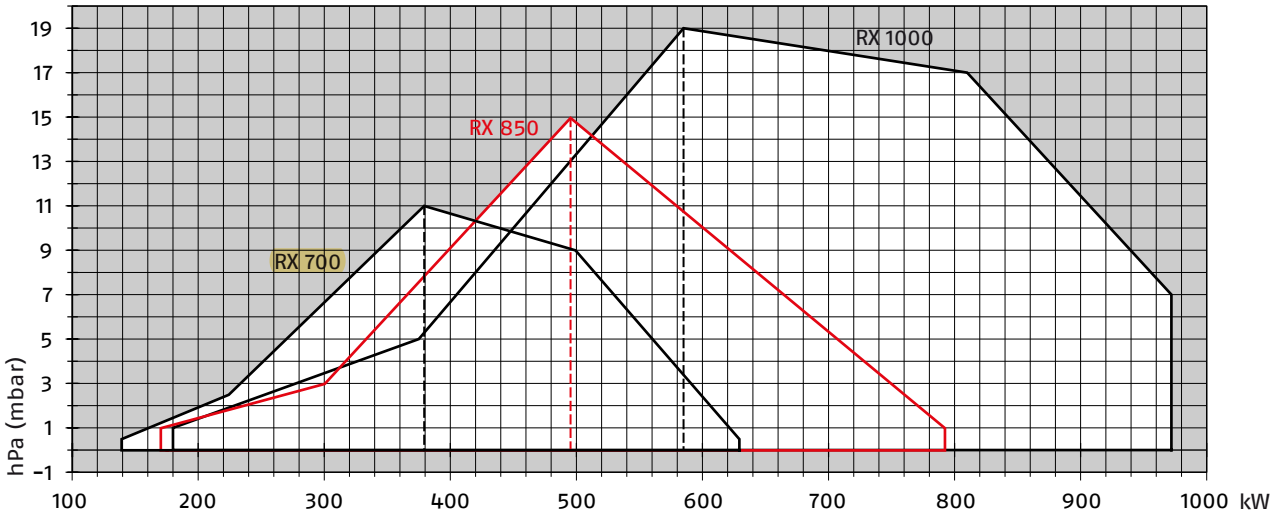
# RX 180÷1000 S/PV ULN SERIES

## FIRING RATES

RX 180-250-360-500 S/PV ULN




RX 700-850-1000 S/PV ULN




Useful working field for choosing the burner

Test conditions conforming to EN676
Temperature: 20°C
Pressure: 1013,5 mbar
Altitude: 0 m a.s.l.

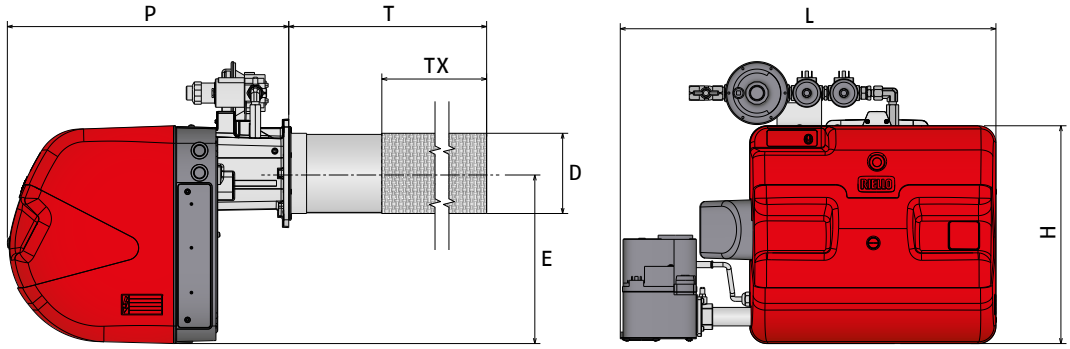
**Please note: it is important to be aware that in order to achieve an ULTRA Low NOx emission performance, it is required to work with a high excess air; as consequence the combustion chamber back pressure could increase up to roughly 30% more.**

# RX 180÷1000 S/PV ULN SERIES

# Overall dimensions (mm)

## BURNER

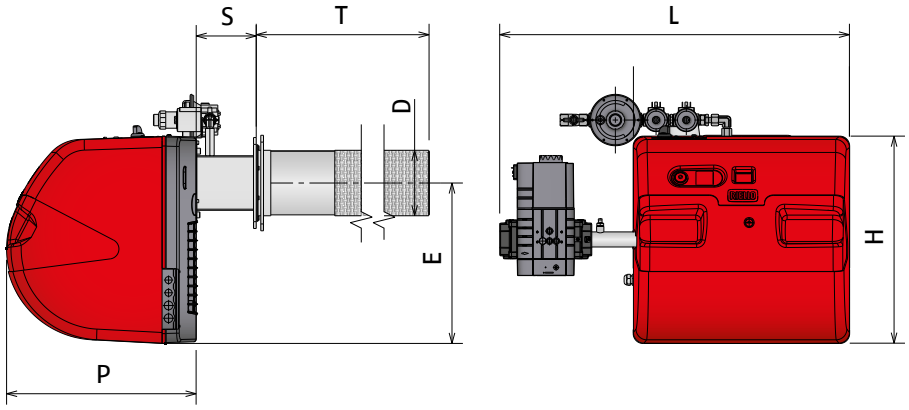
RX 180-250 S/PV ULN
RX 360 S/PV ULN



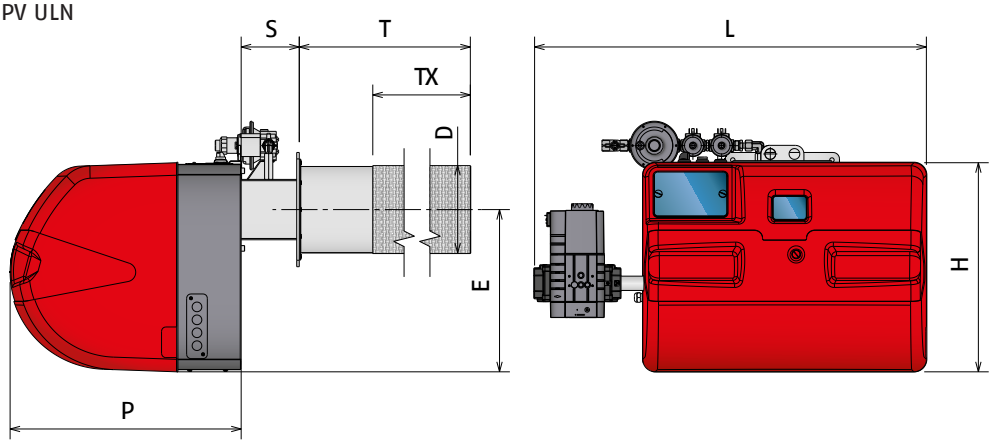

| MODEL | H | L | P | T | TX | D | E |
|---|---|---|---|---|---|---|---|
| ▶ RX 180 S/PV ULN | 390 | 640 | 503 | 465 | 320 | 119 | 306 |
| ▶ RX 250 S/PV ULN | 390 | 640 | 503 | 465 | 320 | 119 | 306 |
| ▶ RX 360 S/PV ULN | 390 | 675 | 503 | 635 | 442 | 144 | 306 |

TX: flame zone length; the non combustion area (T-TX) must be greater than the thickness of the boiler door complete with refractory.

RX 500 S/PV ULN




RX 700-850-1000 S/PV ULN

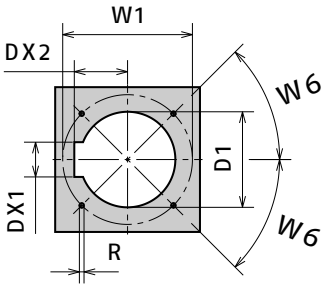



| MODEL | H | L | P | T | TX | D | E | S |
|---|---|---|---|---|---|---|---|---|
| ▶ RX 500 S/PV ULN | 456 | 770 | 550 | 635 | 442 | 144 | 353 | - |
| ▶ RX 700 S/PV ULN | 490 | 910 | 520 | 540 | 367 | 200 | 370 | 135 |
| ▶ RX 850 S/PV ULN | 490 | 910 | 520 | 660 | 460 | 200 | 370 | 135 |
| ▶ RX 1000 S/PV ULN | 490 | 910 | 520 | 660 | 460 | 200 | 370 | 135 |

# RX 180÷1000 S/PV ULN SERIES

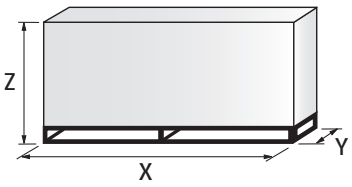
# Overall dimensions (mm)

## BURNER - BOILER MOUNTING FLANGE




| MODEL | D1 | W1 | R | DX2 | DX1 | W6 |
|---|---|---|---|---|---|---|
| ▶ RX 180 S/PV ULN | 163 | 224 | M8 | 94 | 68 | 45° |
| ▶ RX 250 S/PV ULN | 163 | 224 | M8 | 94 | 68 | 45° |
| ▶ RX 360 S/PV ULN | 163 | 224 | M8 | 94 | 68 | 45° |
| ▶ RX 500 S/PV ULN | 163 | 224 | M8 | 100 | 68 | 45° |
| ▶ RX 700 S/PV ULN | 240 | 75 - 325 | M10 | 135 | 75 | 45° |
| ▶ RX 850 S/PV ULN | 240 | 75 - 325 | M10 | 135 | 75 | 45° |
| ▶ RX 1000 S/PV ULN | 240 | 75 - 325 | M10 | 135 | 75 | 45° |

## PACKAGING




| MODEL | X | Y | Z | kg |
|---|---|---|---|---|
| ▶ RX 180 S/PV ULN | 730 | 530 | 550 | 33 |
| ▶ RX 250 S/PV ULN | 730 | 530 | 550 | 33 |
| ▶ RX 360 S/PV ULN | 1190 | 530 | 550 | 35 |
| ▶ RX 500 S/PV ULN | 1280 | 530 | 565 | 43 |
| ▶ RX 700 S/PV ULN | 1420 | 580 | 695 | 50 |
| ▶ RX 850 S/PV ULN | 1420 | 580 | 695 | 50 |
| ▶ RX 1000 S/PV ULN | 1420 | 580 | 695 | 60 |

# RX 180÷1000 S/PV ULN SERIES

# Specification

## DESIGNATION OF SERIES

| | | | |
|---|---|---|---|
| RX | | | |
| Size: | | | |
| Setting: | S/P | Proportioning air/gas valve | |
| | S/PV | Proportioning air/gas valve with variable speed | |
| | S/E | Electronic Cam | |
| | S/EV | Electronic Cam predisposed for variable speed (with inverter) | |
| Emission: | ... | Low NOx Class 3 EN 676 | |
| | ULN | Ultra Low NOx | |
| Electrical supply to the system: | | | |
| | 1/230/50-60 | 1/230V/50-60Hz | |
| | 3/400/50-60 | 3N/400V/50-60Hz | |
| | 230/50-60 | 230V/50-60Hz | |

| RX | 500 | S/PV | ULN | 1/230/50-60 | 230/50-60 |
|---|---|---|---|---|---|
| BASIC DESIGNATION | | | | | |
| EXTENDED DESIGNATION | | | | | |

## STATE OF SUPPLY

Monoblock forced draught Premix Ultra Low NOx gas burner with two stage progressive or modulating operation, with a specific kit, fully automatic, made up of:

- Cylindrical flame shape premix combustion heads fitted with:
  - highly heat resistant cylinder
  - special metallic fiber mesh resistant to thermal stress
  - ignition electrodes
  - ionization probe
- Variable speed fan with Brushless Motors
- Pneumatic proportioning gas train integrated in the burner, which supply the correct gas quantity in proportion to the airflow produced by the fan
- Air/gas mixer (venturi) in the suction line circuit to support Gas and air mixing
- Airtight ventilation structures for air and gas mixing
- Pilot Ignition system to assure a high ignition reliability
- Microprocessor-based LME 71 burner safety control box
  - manages the variable speed of the fan and all safety phases of the burner
  - allows to modify the operation point of the burner
  - with diagnostic functions for operational state and fault state messages, based on multicolor indication via 3-colored LED
- Burner on/off selection switch
- Flame inspection window
- IP 2XD electric protection level

**For models RX 360-500-700-850-1000 S/PV ULN**

- AZL 21 LCD display connected to the LME 71 control box to get indication of the operating status, to activate the diagnostic functions and to change the password-protected parameters (accessory for model RX 180-250-S/PV ULN)

**Standard equipment:**

- Insulating screen and gasket
- Screws, nuts and washers for burner assembly
- Gas valve
- Flange for gas valve
- Valve fixing screws
- Electrical plugs (for model RX 180-250-360 S/PV ULN)
- Gas train for pilot ignition system
- Instruction booklet
- Spare parts list

# RX 180÷1000 S/PV ULN SERIES

# Available models

## Burners

| CODE | MODEL | HEAT OUTPUT NATURAL GAS (kW) (1) | HEAT OUTPUT NATURAL GAS (kW) (2) | TOTAL ELECTRICAL POWER (kW) | CERTIFICATION | NOTE |
|---|---|---|---|---|---|---|
| 20160021 | RX 180 S/PV ULN 1/230/50-60 230/50-60 | 30 - 160 | 30-180 | 0,51 | CE-0085BT0104 | (3)(4)(5)(6) |
| 20160022 | RX 250 S/PV ULN 1/230/50-60 230/50-60 | 40 - 225 | 40-250 | 0,51 | CE-0085BT0104 | (3)(4)(5)(6) |
| 20148871 | RX 360 S/PV ULN 1/230/50-60 230/50-60 | 60 - 325 | 60-360 | 0,51 | CE-0085BR0225 | (3)(4)(5)(6) |
| 20148872 | RX 500 S/PV ULN 1/230/50-60 230/50-60 | 80 - 440 | 80-490 | 1 | CE-0085BR0226 | (3)(4)(5)(7) |
| 20148874 | RX 700 S/PV ULN 1/230/50-60 230/50-60 | 140 - 630 | 140 - 700 | 1,2 | CE-0085BT0516 | (3)(4)(5)(7) |
| 20148875 | RX 850 S/PV ULN 1/230/50-60 230/50-60 | 170 - 790 | 170 - 880 | 1,2 | CE-0085BT0516 | (3)(4)(5)(7) |
| 20148877 | RX 1000 S/PV ULN 3/400/50-60 230/50-60 | 180 - 970 | 180-1080 | 2,7 | CE-0085BT0516 | (3)(4)(5)(7) |

(1) Power range referred to an Ultra Low NOx performance of 30 mg/Nm$^3$
(2) Power range referred to a Low NOx performance conformingto the Class 3 of EN676 European Standard
(3) The burners cannot be used on inversion flame boilers
(4) Modulation input factory setting is 3 Points; to change the external modulation parameter to analogue signal it is necessary to access the password-protected list of parameters using the AZL 21 display kit (Accessory for RX 180-250 S/PV ULN)
(5) Gas train included
(6) With plug and socket
(7) With terminal board

# Burner accessories

## Accessories for modulating operation

### POWER CONTROLLER

To obtain modulating operation, the RX S/PV series of burners requires a regulator with three point outlet controls. The following table lists the accessories for modulating operation with their application range.

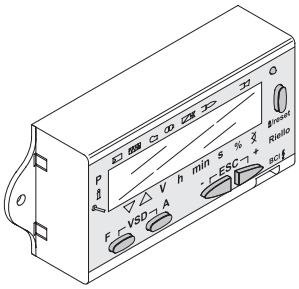
| BURNER | REGULATOR TYPE | REGULATOR CODE |
|---|---|---|
| ▶ RX 180 S/PV ULN | RWF 50.2 - 3-point outlet | 20086840 |
| ▶ RX 250 S/PV ULN | | |
| ▶ RX 360 S/PV ULN | | |
| ▶ RX 500 S/PV ULN | RWF 50.2 - 3-point outlet | 20095185 |
| ▶ RX 700 S/PV ULN | RWF 50.2 - 3-point outlet | 20094733 |
| ▶ RX 850 S/PV ULN | | |
| ▶ RX 1000 S/PV ULN | | |

### PROBE

The relative temperature or pressure probes fitted to the regulator, must be chosen on the basis of the application.

| BURNER | PROBE TYPE | RANGE (°C) (bar) | PROBE CODE |
|---|---|---|---|
| ▶ All models | Temperature PT 100 | -100 ÷ 500°C | 3010110 |
| | Pressure 4 ÷ 20 mA | 0 ÷ 2,5 bar | 3010213 |
| | Pressure 4 ÷ 20 mA | 0 ÷ 16 bar | 3010214 |
| | Pressure 4 ÷ 20 mA | 0 ÷ 25 bar | 3090873 |

## Display and Operating Unit



The AZL 21 LCD display Kit is available to be connected to the LME 71 control box in order to get indication of the operating status, to activate the diagnostic functions and to change the password-protected parameters (carried out only by qualified personnel)

| BURNER | KIT CODE (*) |
|---|---|
| ▶ RX 180 S/PV ULN | 20109292 |
| ▶ RX 250 S/PV ULN | |

(*) Installed on burner as standard equipment for models RX 360-500-700-850-1000 S/PV ULN

# Regolatore di pressione di gas
# *Gas pressure governor*
# Serie FGD-FGDR-FG1B

**Caratteristiche principali**

I regolatori di pressione di gas sono conformi alle Norme EN 88 (Direttiva gas 2009/142/CE).
I regolatori sono idonei ad essere installati su impianti con bruciatori di gas automatico compresi quelli misti e combinati e su impianti di distribuzione industriale.

***Main features***

*The gas governors are conformity with EN 88 standard (2009/142/CE gas regulation).*
*The governors are suitable to systems' installation with automatic gas burners including mixed and combined systems and to in industrial distribution systems.*

giuliani anello

## DATI TECNICI

**Campo di pressione d'entrata $P_1$ :**
FGD ..... $P_2$ + 5 mbar fino a 200 mbar
FGDR..... $P_2$ + 30 mbar fino a 500mbar
FG1B ..... $P_2$ + 30 mbar fino a 1 bar
**Campo di lavoro $P_2$ :** fornito di serie con la molla neutra; campi di taratura secondo la tabella delle molle.
**Norma di riferimento :**
FGD - FGDR ..... EN 88-1
FG1B ..... EN 88-2
**Classe di regolazione del regolatore :**
FGD - FGDR ..... classe A
FG1B ..... classe AC10
**Pressione di chiusura :**
FGD per questo modello non è previsto il collaudo di chiusura
FGDR ..... secondo Norma EN88-1
FG1B ..... classe SG30
**Gruppo del regolatore :** ..... 2
**Combustibili :** gas delle tre famiglie: gas manifatturati (gas città); gas naturali (gruppo H - metano); gas di petrolio liquefatto (gpl); gas non aggressivi.
**Temperatura ambiente :** -15 °C +60 °C.
**Resistenza meccanica :** secondo Norme EN13611.
**Funzionamento :** con carico della molla, senza energia ausiliaria.
**Caratteristiche costruttive :** compensazione della pressione di entrata, membrana di sicurezza di serie, attacco impulso interno. Guarnizione di tenuta per chiusura a zero. Prese di pressione in entrata e uscita su tutti i modelli.
**Materiali :** corpo in alluminio; parti interne in alluminio, acciaio, ottone e materiali sintetici; membrane e guarnizioni in materiale a base di gomma NBR.
**GENERALITA'**

CE In conformità alle Norme EN88.

CE Ex II 2G-2D

## *TECHNICAL SPECIFICATIONS*

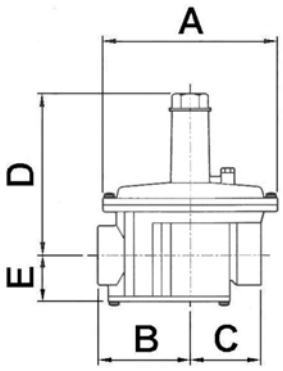
***Inlet pressure range $P_1$:***
*FGD ..... $P_2$ + 5 mbar up to 200 mbar*
*FGDR ..... $P_2$ + 30 mbar up to 500 mbar*
*FG1B ..... $P_2$ + 30 mbar up to 1 bar*
***Operating range $P_2$ :** neutral spring standard supply; other ranges according to the spring table.*
***Standard reference :***
*FGD - FGDR ..... EN 88-1*
*FG1B ..... EN 88-2*
***Governor class :***
*FGD - FGDR ..... class A*
*FG1B ..... class AC10*
***Closing pressure :***
*FGD ..... this model doesn't feature test closing*
*FGDR ..... in according with Standard EN 88-1*
*FG1B ..... classe SG30*
***Governor group :** ..... 2*
***Fuel :** gases of three families: manufactured gas (town gas); natural gas (group H - methane); liquefied petroleum gas (lpg); non-aggressive gas.*
***Ambient temperature range :** -15 °C +60 °C.*
***Resistance:** according to EN13611 specifications.*
***Operation :** by tensioning the spring, without auxiliary energy.*
***Construction features:** compensation of inlet pressure, standard-supply safety diaphragm, internal pipe impulse. Fast-seal gasket.*
*All models are supplied with inlet / outlet pipe tap fittings.*
***Material:** aluminium body; inner parts in aluminium, steel, brass and synthetic materials; diaphragm and gaskets in nitrile-butadiene rubber.*
***GENERAL INFORMATION***

*The gas governors are conform to the EN88 specifications*

CE *In conformity with EN88 specification.*

CE Ex II 2G-2D

## Dimensioni d'ingombro/*Overall dimensions (mm)*




**Tipo/Type FGD**

**N.B**. La quota E deve essere aumentata di circa 400 mm per facilitare la pulizia e l'ispezione del filtro.

***Note.** The dimension "E" must be increased by about 400 mm to facilitate the filter cleaning and inspection.*

| Modello/Model | Attacchi/Connection | A | B | C | D | E |
|---|---|---|---|---|---|---|
| FG..15 | Rp 1/2" UNI-ISO 7/1 | | | | | |
| FG..20 | Rp 3/4" UNI-ISO 7/1 | 146 | 73 | 58 | 137 | 42 |
| FG..25 | Rp 1" UNI-ISO 7/1 | | | | | |
| FG..32 | Rp 1"1/4 UNI-ISO 7/1 | | | | | |
| FG..40 | Rp 1"1/2 UNI-ISO 7/1 | 194 | 98 | 80 | 175 | 52 |
| FG..50/40 | Rp 2" UNI-ISO 7/1 | | | | | |
| FG..50 | Rp 2" UNI-ISO 7/1 | 260 | 135 | 90 | 250 | 65 |

**FG..50/40 :** modello con attacchi filettatti da 2" ma con ingombri del modello da 1"1/2 (FG..40).
***FG..50/40 :** model with 2" connection but overall dimension as 1"1/2 models (FG..40)*

I regolatori di pressione di gas sono conformi alle Norme EN88 (Direttiva gas 2009/142/CE).
I regolatori sono idonei ad essere installati su impianti con bruciatori di gas automatico compresi quelli misti e combinati e su impianti di distribuzione industriale.

## CARATTERISTICHE TECNICHE

Dispongono di tre membrane: di compensazione, di lavoro e di sicurezza. Non è indispensabile un condotto di sfiato e scarico all'esterno poiché la membrana di sicurezza incorporata garantisce che, in caso di rottura della membrana di lavoro, non si possa verificare una perdita di gas nell'ambiente superiore a 30 dm3/h (punto 3.3.2. delle Norme EN88).

## INSTALLAZIONE

Si consiglia di installare il regolatore con membrana orizzontale (su tubazione orizzontale). Rispettare scrupolosamente il senso del flusso del gas indicato dalla freccia sul regolatore.
Il montaggio del regolatore sull'impianto deve essere eseguito con opportuni attrezzi da inserire sui mozzi dei fori di entrata e uscita.
E' assolutamente vietato montare il regolatore facendo leva sul cannotto del coperchio superiore.
Per la serie con il filtro incorporato si consiglia di montare il regolatore ad una conveniente altezza dal pavimento, in modo da facilitare la pulizia del filtro raccoglitore di impurità (montare sempre un filtro idoneo per gas a monte del regolatore).
Accertarsi che le tubazioni siano pulite ed allineate in modo che il regolatore non sia sollecitato da tensioni.
Non togliere il tappo forato (3) per lo sfiato della membrana e non ostruire il foro in quanto il regolatore non potrebbe funzionare. Installare il regolatore in modo da non toccare pareti intonacate. Verificare che il regolatore sia adatto all'uso destinato.

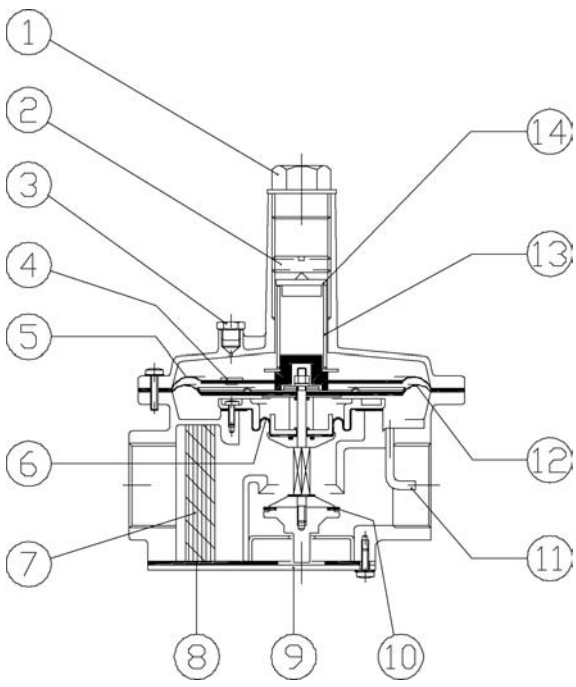
*(2009/142/CE gas regulation).*
*The governors are suitable to installation systems with automatic gas burners including mixed and combined systems and to industrial distribution systems.*

## *TECHNICAL FEATURES*

*Compensation diaphragm, operating diaphragm and safety diaphragm: an external breather outlet pipe is not necessary as the incorporated safety diaphragm ensures that, in the event of breakage of the operating diaphragm, no gas leakage (over 30 dm3/h) is possible inside the room (in compliance with par. 3.3.2. EN88 specifications).*

## *INSTALLATION*

*Install the governor with the diaphragm positioned horizontally (on horizontal pipes). Be careful to follow always the direction of gas flow indicated by the arrow on the governor.*
*Suitable tools must be used for the governor fitting on the inlet and outlet hubs. Never effect leverage on the sleeve of the upper cover when fitting the governor.*
*For all models with the filter inside, the governor is best fitted at a comfortable height from the ground so as to facilitate the filter cleaning (fit always a suitable gas filter upstream the governor).*
*Make sure that the pipes are clean and aligned so the governor is not under stress.*
*Do not remove the perforated diaphragm breather cap (3) and do not obstruct the hole, otherwise the governor will not work. Install the governor so avoiding contact with plastered walls.*
*Make sure that the governor is suitable to the intended use.*




***MODELLI FILETTATI Rp 1/2" ÷ 2" CON FILTRO INCORPORATO***
***Rp 1/2" ÷ 2" THREADED MODELS WITH INCORPORATED FILTER***

1 - Tappo superiore - *Upper cap.*
2 - Vite di regolazione pressione - *Set-screw.*
3 - Tappo di sfiato - *Drain plug.*
4 - Valvolino di sfiato - Bleed screw.
5 - Membrana di sicurezza - *Safety diaphragm.*
6 - Membrana di compensazione - *Compensation diaphragm.*
7 - Filtro - *Filter.*
8 - Guarnizione coperchio - *Cover gasket.*
9 - Coperchio filtro - *Filter cover.*
10 - Gomma di tenuta - *Sealing gasket.*
11 - Tubino presa pressione - *Pressure pipe.*
12 - Membrana di lavoro - *Operating diaphragm.*
13 - Molla - *Spring.*
14 - Rondella spingimolla - *Spring washer.*

**CAMPO DI TARATURA DELLE MOLLE: $P_2$ mbar - *SPRINGS SETTING RANGE: $P_2$ mbar***

| Modello - *Model* | | FGD 15 – 20 – 25 | FGD 32 - 40 | FGD 50 |
|---|---|---|---|---|
| Colore molle - *Springs color* | VERDE - *GREEN* | 5 - 15 | 5 - 15 | 5 – 15 |
| | NEUTRA - *NEUTRAL* | 10 – 30 | 10 – 25 | 10 – 35 |
| | VIOLA - *VIOLET* | 25 – 80 | 20 – 70 | 30 – 80 |
| | MARRONE - *BROWN* | 70 – 160 | 65 – 130 | 70 – 160 |
| | BIANCA - WHITE | / | 120 – 160 | / |

| Modello - *Model* | | FGDR 15 – 20 – 25 | FGDR 32 - 40 - 50/40 | FGDR 50 |
|---|---|---|---|---|
| Colore molle - *Springs color* | VERDE - *GREEN* | 5 - 15 | 5 - 15 | 5 - 15 |
| | NEUTRA - *NEUTRAL* | 10 – 30 | 10 – 25 | 10 – 35 |
| | VIOLA - *VIOLET* | 25 – 80 | 20 – 70 | 30 – 80 |
| | MARRONE - *BROWN* | 70 – 160 | 65 – 130 | 70 – 220 |
| | BLU - *BLUE* | 150 – 280 | / | 210 – 350 |
| | BIANCA - *WHITE* | 270 – 350 | 120 – 250 | / |
| | NERA - *BLACK* | / | 240 – 350 | / |

| Modello - *Model* | | FG 1B 15 – 20 – 25 | FG1B 32 - 40 - 50/40 | FG1B 50 |
|---|---|---|---|---|
| Colore molle - *Springs color* | NEUTRA - *NEUTRAL* | 10 – 30 | 10 – 25 | 10 – 35 |
| | VIOLA - *VIOLET* | 25 – 80 | 20 – 70 | 30 – 80 |
| | MARRONE - *BROWN* | 70 – 160 | 65 – 130 | 70 – 220 |
| | BLU - *BLUE* | 150 – 280 | / | 210 – 450 |
| | BIANCA - *WHITE* | 270 – 450 | 120 – 250 | / |
| | NERA - *BLACK* | / | 240 – 360 | / |
| | ARANCIO - *ORANGE* | / | 350 – 450 | / |
| Distanziale - *Spacer* * | | *Cod. 502.0211.010* | *Cod. 382* | *Cod. 383* |

***)** Per la messa fuori servizio sostituire la molla con il distanziale idoneo.
*To put out of service replace the spring with the suitable spacer.*

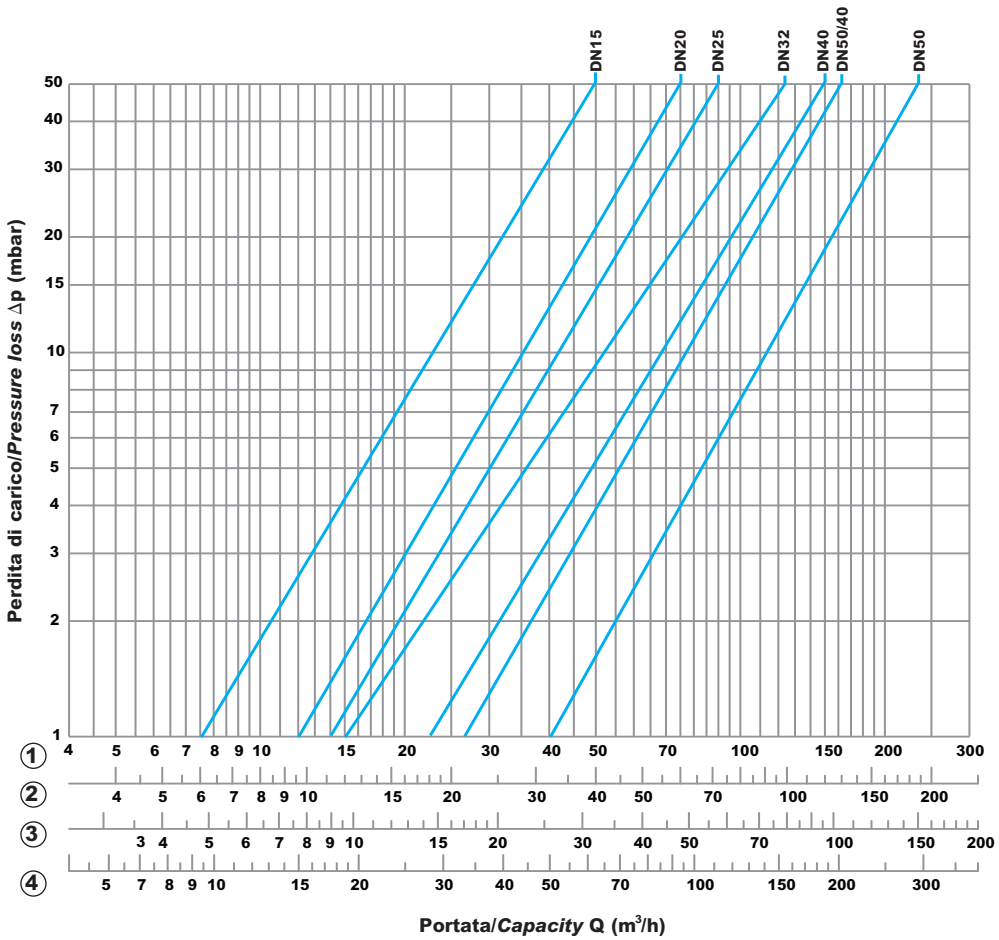
**NB: I campi delle molle possono essere soggetti a variazione – The springs range can be object of modifications**

## DIAGRAMMA PORTATE / PERDITE DI CARICO CON REGOLATORE MESSO FUORI SERVIZIO

Con il termine "regolatore messo fuori servizio" si intende che è escluso dal normale funzionamento; per fare ciò viene inserito un distanziale rigido al posto della molla, in questo modo l'otturatore del regolatore viene mantenuto completamente aperto.
Questo diagramma serve per conoscere la "perdita di carico" minima (Δp min.) che il regolatore deve disporre per una determinata portata di gas; in pratica è la perdita di pressione (rilevabile dal diagramma) dovuta al passaggio del gas all'interno del corpo dello stesso regolatore. Per "caduta di pressione" si intende la differenza aritmetica tra la pressione di entrata ($P_1$) e la pressione di uscita ($P_2$) a cui verrà tarato il regolatore.
I regolatori di pressione funzionano efficacemente anche con una bassa caduta di pressione, tuttavia per disporre di un certo margine per assicurare un buon funzionamento, si dovrebbe poter disporre di una caduta di pressione pari almeno al doppio della perdita di carico risultante dal diagramma

## *CAPACITY / PRESSURE LOSS DIAGRAM WITH THE GOVERNOR OUT OF SERVICE*

*The meaning of " governor out of service" is intended that the governor is out of the normal operation; to get this status it is inserted one spacer to replace the spring and so the governor's shutter is kept completely open.*
*This diagram is used to know the min. "pressure loss" (min. Δp) given by the governor to get one requested gas capacity; in practice, it is the pressure loss (detected from the diagram) caused by the gas flow through the body of the governor itself.*
*The "pressure drop" means the arithmetic difference between the ($P_1$) inlet pressure and the ($P_2$) pre-set outlet pressure.*
*The efficiency of the governors is even guaranteed at low pressure drop, any way, to get good performances it is suggested to have a pressure drop double the pressure drop given by the diagram.*




| | | |
|---|---|---|
| ① | Metano / Natural gas | dv: 0,62 |
| ② | Aria / Air | dv: 1 |
| ③ | G.P.L. / L.P.G. | dv: 1,56 |
| ④ | Gas città / Town gas | dv: 0,45 |

Le descrizioni e le fotografie contenute nel presente, si intendono fornite a semplice titolo informativo e non impegnativo.
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ENGINEERING
TOMORROW

Data sheet

# Pressure switch
## Type BCP


The BCP type is a series of dedicated pressure switches for safety and pressure monitoring of steam and hot water boilers.

The BCP incorporates a single-pole changeover microswitch where the contact position depends on the pressure in the connection port and the range set value.

For installations, in which operation is particularly critical for safety reason, the use of fail-safe control is recommended.

### Features

- Available as high and low pressure limiters as well as pressure controllers
- Wide pressure range:
  from low pressure BCP1 with narrow differential to high pressure BCP7
- The fail-safe dual bellows enable premature cut-out when fault occurs
- DIN plug mounted on the top of control for easy electrical wiring
- Single-pole changeover switch (SPDT), switch + alarm
- Direct mounting on pressure connection or wall mounting by means of a bracket
- Versions with automatic and manual resets available
- Screw adjustments made on top of housing
- Manual reset for pressure limiters possible only by means of tools
- Safety Integrity Level: SIL 2 according to IEC 61508:2010

### Approvals

CE-marked in accordance with EN 60947-4/-5
VdTÜV-Merkblatt „Druck 100"
TÜV. SDWFS/SDBFS . 15 - 335

CE marked in accordance with 2014/68/EU, category IV, safety equipment, testing basis pr EN12952-11 and EN12953-9.

## Materials in contact with media

Bellows: stainless steel X2CrNi19-11, 1.4306 acc. to EN 10088-2

Pressure connection: nickel plated free cutting steel or stainless steel X5CrNi18-10, 1.4301 acc. to EN 10088-2

## Technical data

| | | |
|---|---|---|
| **Media** | | Steam, water, air |
| **Ambient temperature** | | -20 – 70 °C |
| **Media temperature** | | Up to 120 °C<br>(Above 120 °C a water-filled loop must be installed). |
| **Enclosure** | | IP65 |
| **Action type acc. to EN 60730** | | Type BCP - 2B |
| | | Types BCPL/BCPH - 2BDF |
| **Electrical connection Plug** | | DIN 43650, Pg 11 |
| **Switch type** | | SPDT, snap action microswitch |
| **Contact material** | | Silver/gold (gold plated silver) |
| **Contact load** | **Minimum** | 1mA, 5V |
| | **Maximum[1])** | [2]) AC-1: 6A, 250V |
| | | [3]) AC-15: 1A, 250 V |
| | | [4]) DC 13 10W, 250 V |
| **Expected electrical lifetime** | | Min. 250 000 cycles under full contact load. |

[1]) If used with current higher than 100mA and voltage higher than 30V the gold layer will be burnt away and the unit can't be used at a lower current again.

[2]) AC-1 Ohmic load, cosφ 1.

[3]) AC-15 inductive load like coil and contactors with, cosφ 0.3.

[4]) DC-13 Direct current load.

## Ordering

*High pressure limiters*

| Type | Range [bar] | Fixed Differential avg. [bar] | Reset | Max. operating pressure [bar] | Max. test pressure [bar] | Pressure connection | **Code no.** |
|---|---|---|---|---|---|---|---|
| BCP1H | 0.1 – 1.1 | 0.10 | Man. | 6 | 7 | G ½ A | **017B0030** |
| BCP2H | 0.0 – 2.5 | 0.20 | Man. | 10 | 11 | G ½ A | **017B0034** |
| BCP3H | 0.0 – 6.0 | 0.40 | Man. | 16 | 18 | G ½ A | **017B0038** |
| BCP3H | 0.0 – 6.0 | 0.40 | Man. | 16 | 18 | G ½ A | **017B0138[1])** |
| BCP4H | 1.0 – 10.0 | 0.45 | Man. | 25 | 28 | G ½ A | **017B0042** |
| BCP5H | 2.0 – 16.0 | 1.20 | Man. | 32 | 35 | G ½ A | **017B0046** |
| BCP6H | 5.0 – 25.0 | 1.50 | Man. | 40 | 45 | G ½ A | **017B0050** |
| BCP7H | 10.0 – 40.0 | 2.30 | Man. | 63 | 70 | G ½ A | **017B0054** |

*Low pressure limiters*

| Type | Range [bar] | Fixed Differential avg. [bar] | Reset | Max. operating pressure [bar] | Max. test pressure [bar] | Pressure connection | **Code no.** |
|---|---|---|---|---|---|---|---|
| BCP2L | 0.0 – 2.5 | 0.20 | Man. | 10 | 11 | G ½ A | **017B0058** |
| BCP3L | 0.0 – 6.0 | 0.40 | Man. | 16 | 18 | G ½ A | **017B0062** |
| BCP4L | 1.0 – 10.0 | 0.45 | Man. | 25 | 28 | G ½ A | **017B0066** |
| BCP5L | 2.0 – 16.0 | 1.20 | Man. | 32 | 35 | G ½ A | **017B0070** |
| BCP6L | 5.0 – 25.0 | 1.20 | Man. | 40 | 45 | G ½ A | **017B0074** |



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## Ordering

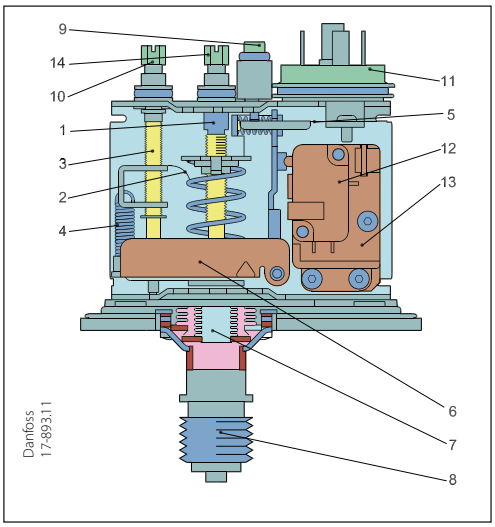
*Pressure controllers*

| Type | Range [bar] | Differential avg. [bar] | Reset | Max. operating pressure [bar] | Max. test pressure [bar] | Pressure connection | **Code no.** |
|---|---|---|---|---|---|---|---|
| BCP1 | 0.1 – 1.1 | 0.15 – 0.6 | Auto | 6 | 7 | G ½ A | **017B0002** |
| BCP2 | 0.0 – 2.5 | 0.4 – 1.0 | Auto | 10 | 11 | G ½ A | **017B0006** |
| BCP3 | 0.0 – 6.0 | 0.7 – 1.4 | Auto | 16 | 18 | G ½ A | **017B0010** |
| BCP3 | 0.0 – 6.0 | 0.7 – 1.4 | Auto | 16 | 18 | G ½ A | **017B0110[1])** |
| BCP4 | 1.0 – 10.0 | 1.0 – 2.5 | Auto | 25 | 28 | G ½ A | **017B0014** |
| BCP5 | 2.0 – 16.0 | 2.0 – 3.2 | Auto | 32 | 35 | G ½ A | **017B0018** |
| BCP6 | 5.0 – 25.0 | 2.5 – 4.0 | Auto | 40 | 45 | G ½ A | **017B0022** |
| BCP7 | 10.0 – 40.0 | 3.0 – 6.0 | Auto | 63 | 70 | G ½ A | **017B0026** |

[1]) Stainless steel pressure connector

## Design and function

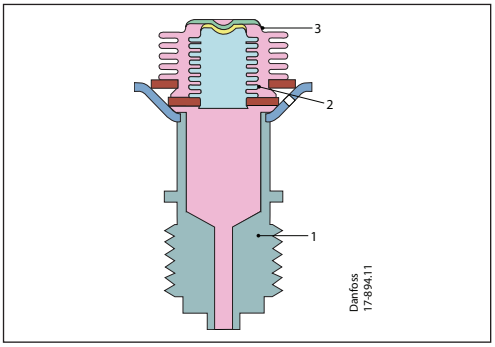
*Pressure switch, type BCP*



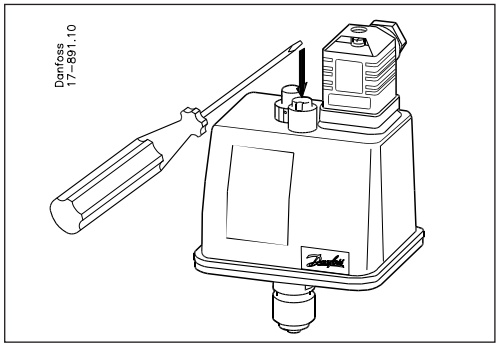

1. Main spindle
2. Main spring
3. Differential spindle
4. Differential spring
5. Reset spring
6. Activating arm
7. Bellows
8. Pressure connection
9. Reset push button
10. Differential knob
11. DIN plug
12. Microswitch
13. Michroswitch bracket
14. Range knob

***Reset***
Version with automatic reset cut-in again automatically when the pressure falls to the set point minus differential. Version with manual reset has to be cut in manually by means of tool.

***Fail-safe bellows concept***
BCP 6, BCP 6H, BCP 7, and BCP 7H have a double bellows: an operating bellows (inner) and safety bellows (outer).




1. Pressure connection
2. Regulating bellows
3. Safety bellows




***Microswitch***
BCP is a microswitch based control with DIN plug. Such design enables easy electrical connection and makes control suitable for operation with modern electronic systems, as PLC.

***Silver/gold plated contacts***
Silver/gold plated contacts are used for low currents and middle range of current, especially in applications with PLC or other corresponding electronic devices. Such contacts have also significantly lower emission of electromagnetic noises produced on contact break. EMC (Electro Magnetic Compatibility) is an important parameter where electronic equipment is used. A gold plated contact has a silver layer under the gold and can therefore also be used in the middle range of load. The gold will disappear at loads above 0,1 A.

**Note:**
Ambient temperature influence
All BCP pressure switches operate independently of changes in ambient temperature around the switch.
Therefore the settings for cut-out pressure and differential stay constant unless the permissible ambient temperature is exceeded.
When system pressure exceeds the set value, the BCP will automatically stop the plant.
A rupture in the inner bellows cause the control cut-out pressure to fall about 3 times less then the preset value, thus the system stops prematurely.
A rupture in the outer bellows cause the control cut-out pressure to fall about 3 bar under the preset value, thus providing a fail-safe function.

In other BCP types with single bellows assembly, fail-safe function is satisfied by proved 2 millions cycles mechanical life time test.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## Setting

**Note:**
Cut-in and cut-out pressures of the system should always be checked with accurate pressure gauges.

*Pressure settings for switches (with automatic reset)*
Set the cut-out pressure on RANGE scale and differential on DIFF. scale. Restart pressure is equal to cut-out pressure minus pre-set differential value.

*Pressure switches with manual reset*
*High pressure limiters*
Set cut-out pressure on the RANGE scale. Pressure limiter can only be manually reset by pressing reset button by means of tools when the pressure is equal to or below the cut-out pressure minus value of the differential.

*Low pressure limiters*
Set cut-out pressure on RANGE scale. Limiter can only be reset manually by pressing (with tool) the reset button when pressure rises to cut-out pressure plus differential or above it.

**Note:**
Pressure limiters have no differential scale. Fixed differential value is printed on the scale plate.

## Terminology

*Pressure limiters*
Limiters are devices that, on reaching a fixed value interrupt and lock out the energy supply.
Manual unlocking is required before restart.
A limiter shall be such that a single fault in any related part shall not lead to a loss of the safety function.

**Note:**
If a BCP pressure controller with automatic reset is used as limiter, lockout must be realized externally as a part of safety logic, e.g.: by external contactors and/ or relays according to requirements of standard prEN501156-1 for safety relevant hardware. External closure must be interlocked, while loss of auxiliary energy must lead to closure.
Resetting must not be automated; it has to be performed manually.
Resetting on fault must lead to a repeated closure.
When BCP limits, is for rising or falling applications, the external safety logic must change to fail-safe position.

*Fail-safe control*
A control is fail-safe if it has the capability to remain in a safe condition or transition to a safe condition when a fault occurs.

**Note:**
If the system pressure exceeds PS/MWP then accuracy of the control settings can be lost.

*Maximum test pressure*
The maximum pressure applied in strength or leakage tests on heating systems or components thereof.

*Maximum working pressure*
The maximum permissible pressure for safe functioning of the system or any of its components.

*Snap function*
A specific contact force is maintained in micro-switch until snap is initiated, therefore, contact bounce cannot occur as a result, for example, of slight vibrations before cut-out.
These design features ensure that the cut-out point of the BCP control remains very accurate and completely independent of the magnitude of the current load.

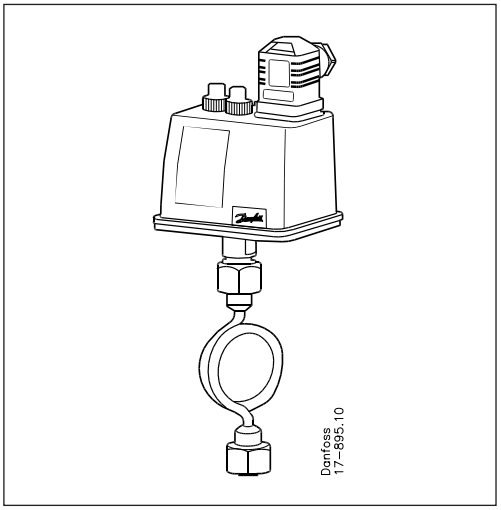
*Set point*
A predetermined value to which a control is adjusted and at which it performs its intended function.

*Differential*
The difference between pressure cut-out and pressure cut-in.

*Reset*
1. Manual reset
A unit with manual reset can only be restored to operational mode by activation of the external reset button.

2. Automatic reset
A unit with automatic reset is restored to operational mode automatically

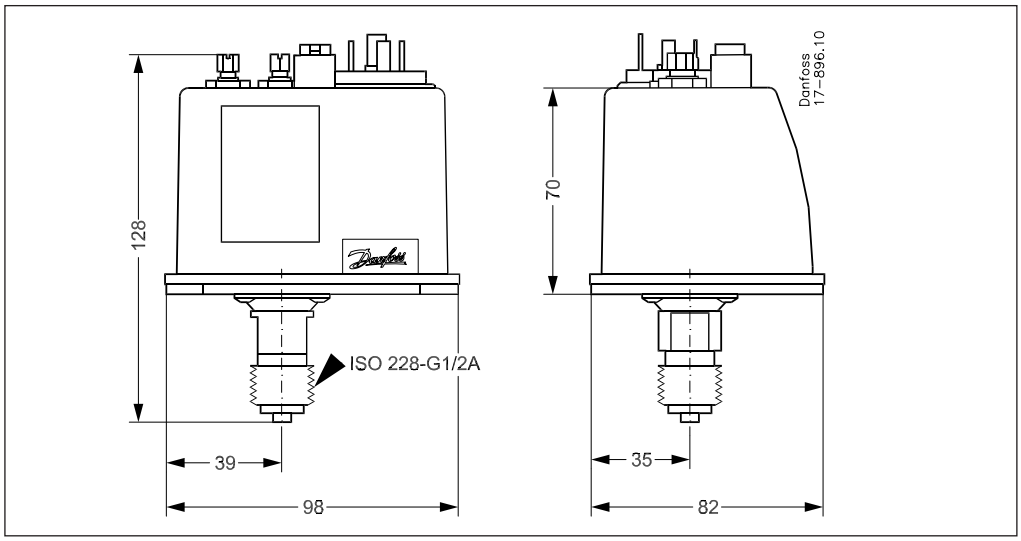
## Installation in steam systems



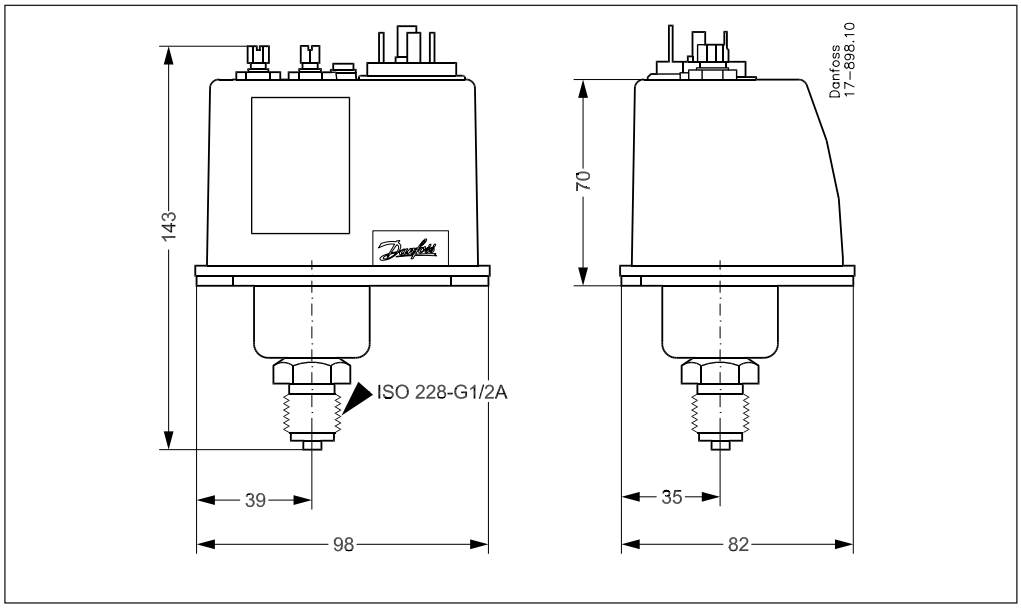

To protect the pressure element against excessive temperature of the media, above allowable 120 °C the insertion of water-filled loop is recommended.

## Dimensions [mm] and weights [kg]

*BCP types except for BCP 1 and BCP 1H*




*Types BCP 1 and BCP1H*




*Net weight: 0.5 kg*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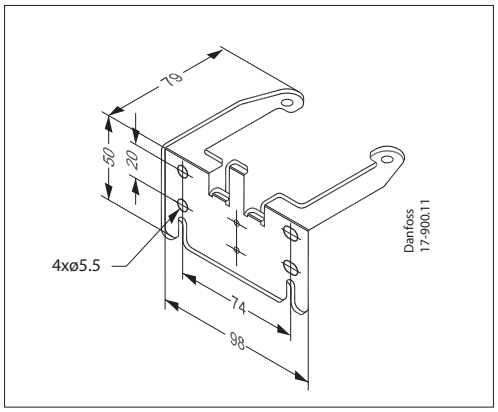
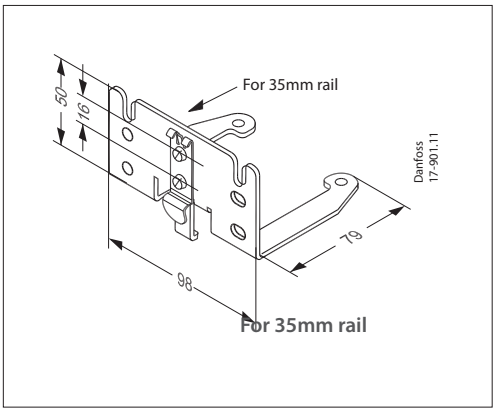
## Accessories for BCP pressure switches

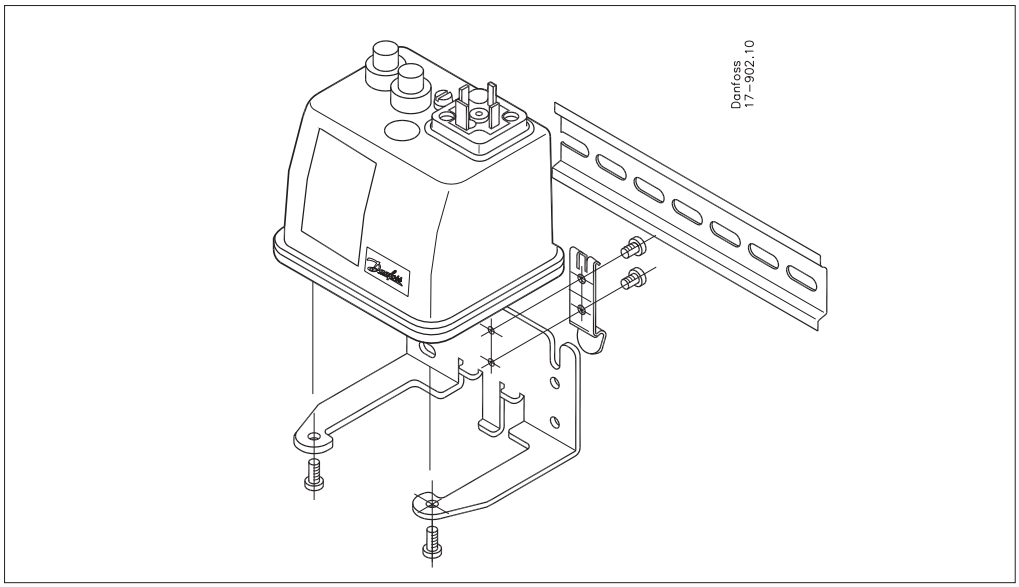
*Mounting bracket, code number 017B1018, for direct mountng on the wall*




*Mounting bracket for T 35 mm rail, code number 017B1019*




*Mounting of BCP on the 35 mm rail*

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# SPIROTOP®

## AUTOMATIC AIR VENTS FOR HEATING, COOLING AND PROCESS SYSTEMS

SPIRO life EXCEPTIONAL GUARANTEE

DOMESTIC | COMMERCIAL | INDUSTRY

SPIROTECH FOR BETTER PERFORMANCE

# Top quality should be at the highest points as well

**Air and other gases collect at the highest point within a system. However, a system will often have several highest points. Trapped air can obstruct the flow at these points or even stop it altogether. If gases are not removed, or are not removed sufficiently, it can lead to commissioning problems, frequent manual venting, deteriorating pump performance and so on. Eventually, this will cause damage to expensive system components and lead to system and process malfunctions or even total failure, things which can be avoided if tackled individually but which need to be followed up immediately.**

SpiroTop automatic air vents are designed to remove free air and trapped air bubbles quickly and effectively. If a system has to be drained, the SpiroTop ensures fast and reliable venting.

Standard design

High-pressure/high-temperature design

Stainless steel design

The SpiroTop is the reliable and worry-free solution ideal for:

- filling and venting systems;
- making and keeping the high points in pipe systems air-free;
- preventing air pockets from forming.

## Benefits of SpiroTop

The combination of the characteristics listed below ensures that the automatic SpiroTop will not leak during its very long life:

- The special valve construction means that the valve closes completely.
- The special valve seat has a very long life expectancy.
- The robust floats are made of solid plastic so cannot rupture.
- The significant gap between the valve and the water (at least 40 mm) prevents valve contamination which is one of the main causes of leaks.
- The ½" connection prevents the pipette effect.
- A complete range, suitable for various pressures and temperatures.
- Exceptional guarantee.

SPIRO life EXCEPTIONAL GUARANTEE 9

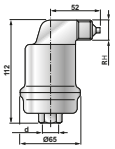
## Total solutions

Spirotech offers an extensive range of total solutions for HVAC and process systems: accessories, additives and advice to ensure optimum efficiency and guarantee the quality of the system fluid. These products and services reduce faults, wear and maintenance as well as improve system performance and lower energy consumption. And what is more, these total solutions provide major benefits and save time during the design, installation, start-up and commissioning of systems.

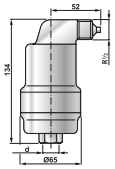
The SpiroTop should be mounted at the highest point of the system and at any points where air pockets may occur. The SpiroTop is to be installed vertically with the connection at the bottom.

| Type | d | Material | Float material | Max. operating pressure | Max. temperature | Article number |
|---|---|---|---|---|---|---|
| SpiroTop | G½ | Brass | PP | 10 bar | 110°C | AB050 |
| SpiroTop HT | G½ | Brass | TPX | 10 bar | 180°C | AB050/002 |
| SpiroTop HT | G½ | Brass | AISI 316 | 10 bar | 180°C | AB050/007 |
| SpiroTop Solar | G½ | Brass | TPX | 10 bar | 180°C | AB050/008 |
| SpiroTop Solar AutoClose | G½ | Brass | TPX | 10 bar | 180°C | AB050FBA08 |
| SpiroTop HP/HT | G½ | Brass | TPX | 25 bar | 150°C | AB050/025 |
| SpiroTop HP | G½ | Brass | PP | 16 bar | 110°C | AB050/030 |
| SpiroTop HT RVS | G½ | AISI 316 | TPX | 10 bar | 180°C | AB050/R002 |
| SpiroTop HP/HT RVS | G½ | AISI 316 | TPX | 25 bar | 200°C | AB050/R004 |
| SpiroTop HT RVS | G½ | AISI 316 | AISI 316 | 10 bar | 180°C | AB050/R007 |

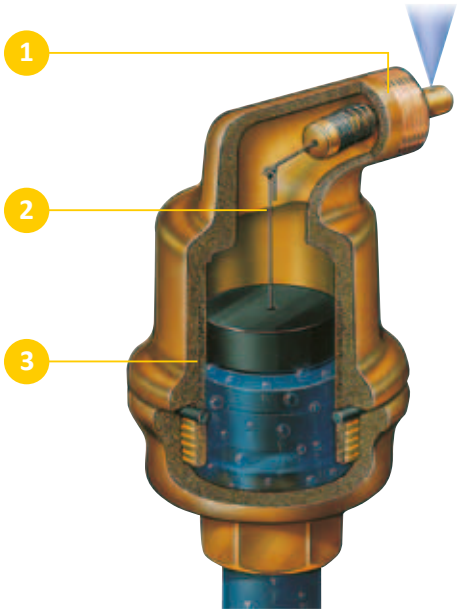
**Other materials, pressures and temperatures are available on request.**



10 bar



16 en 25 bar




For a completely air-free system, you need to install SpiroVent deaerators or vacuum degassers as well as SpiroTop air vents.

SpiroTop air vents are suitable for water and water/glycol mixtures (max. 50%). They can be used in combination with locally approved chemical additives and inhibitors that are compatible with the materials applied within the system. Not suitable for drinking water.

The standard SpiroTop is suitable for a temperature range of 0 to 110 °C and for an operating pressure of 0 to 10 bar. The SpiroTop housing is made of brass. The connection is a ½" female thread. Other materials, pressures and temperatures are available on request.

1. The automatic air vent does not leak and cannot be closed. The SpiroTop comes with a thread for connecting a vent pipe as standard.
2. Specially constructed air chamber prevents floating dirt from reaching the valve and provides sufficient volume to absorb pressure fluctuations.
3. The solid construction guarantees a very long life.

**Digital support**
Product data sheets, standard specification texts, line drawings, CAD symbols, project descriptions, etc. are available via our website.

**Solar applications**
Spirotech also offers an extensive range of air vents and deaerators for solar applications.

**SpiroPlus®**
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**Separate literature is available that contains detailed product information.**
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## SPIROLIFE
## Guarantee of a lifetime

Spirotech's Exceptional Guarantee Terms!

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- 5 Steel Products and Brass Products >110°C: 5 years
- 2 Vacuum Degassers: 2 years

**Conditions:**
Correct selection, installation, maintenance and use of the products, in accordance with our regulations, data sheets and user manuals. Our guarantee does not cover normal wear and tear. Please also see our general terms and conditions.

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Spirotech designs and produces innovative total solutions for conditioning fluids in HVAC and process systems. Our products and services reduce faults and wear, less maintenance is required, performance is improved and energy consumption is reduced.

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The diagrams and situations presented in this brochure are only intended to serve as examples. We would be pleased to advise you on any specific circumstances. Modifications and printing/typographic errors reserved.
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14.374_07

TÜV NORD ISO 9001 TÜV NORD ISO 14001 TÜV NORD OHSAS 18001

# STANDARD PRESSURE GAUGES ACCORDING TO DIN EN 837-1

## Nominal diameter 80, 100, 160
## Connection brass
## Connection position bottom or back

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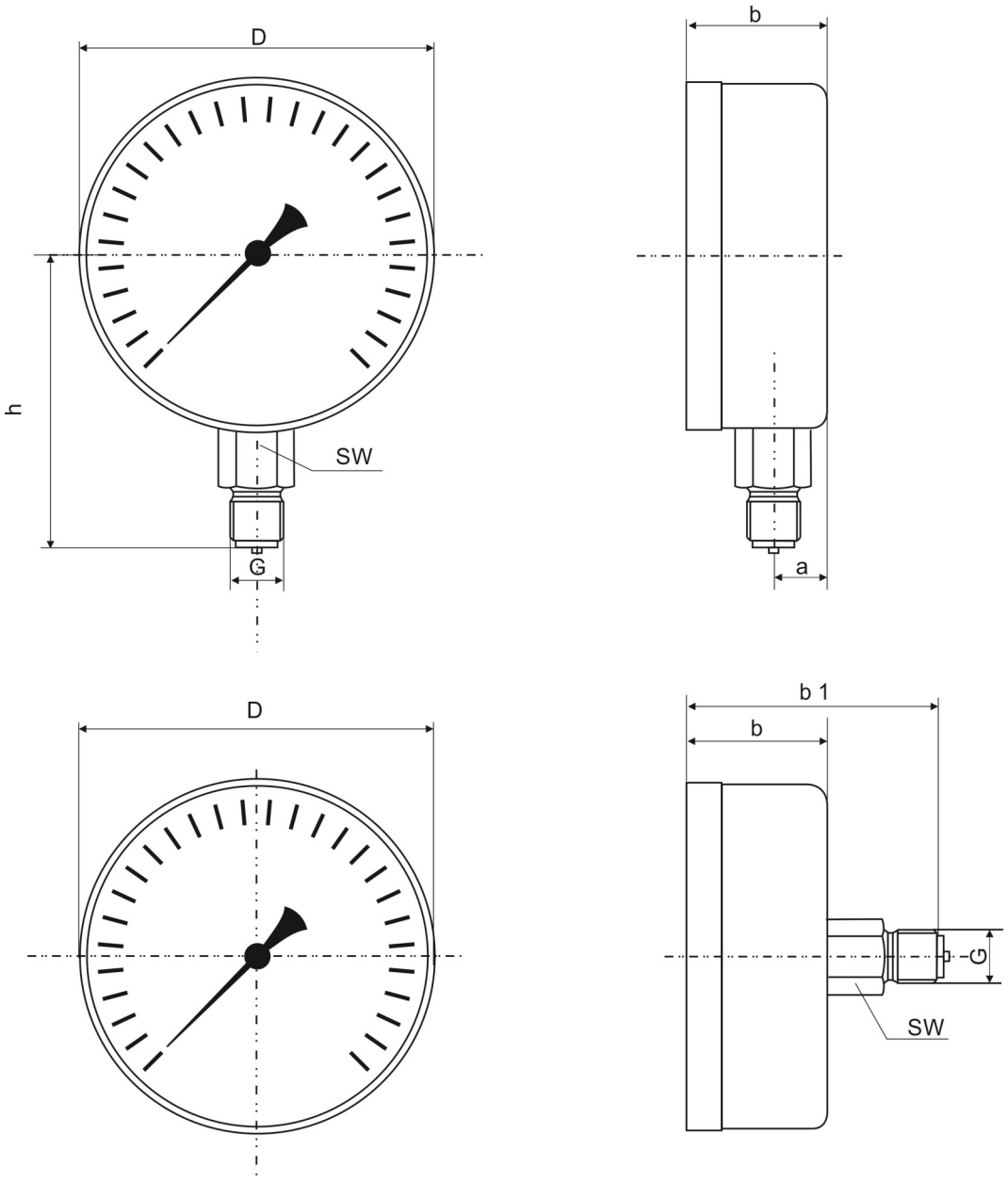
For normal demands in accuracy of indication and construction. This devices can be used in all applications where liquid or gaseous media are not highly viscous and do not attack copper alloys or crystallize.


| **Type** | **4881** | **4421** | **4451** | **4461** | **4951** | **Options for NS 80 and NS 100** |
|---|---|---|---|---|---|---|
| Nominal diameter | 80 | | 100 | | 160 | |
| Symbol |  |  |  |  |  | Type **4451,** though cl. 1,0, 0...6 up to 0...25 bar = type **5321** (Mediumtemp. max 130°C) |
| Accuracy DIN EN 837-1 | class 1,6 | | | | 0...1 up to 0...40 bar cl.1,0<br>0..60 up to 0...600 bar cl.1,6 | NS 80 and NS 100 cl. 1,0 + 130°C |
| Measuring ranges | 0...4 bar up to 0...25 bar | | 0...0,6 bar up to 0...600 bar, positive and negative overpressure | | | |
| Applications | Constant load: 3/4 x end of scale value<br>Alternating load: 2/3 x end of scale value<br>short-term end of scale value | | | | end of scale value<br>0,9 x end of scale value<br>short-term: 1,3 fold | |
| Case | Steel black | | | | | |
| Ring | Slip ring, steel black, screwed | | | | | |
| Movement | Cu- alloy | | | | | |
| Connection material | CuZn-alloy | | | | | |
| Thread | G 1/4 B or G 1/2 B | G 1/4 B or G 1/2 B | G 1/2 B M20x1,5 | G 1/4 B G 1/2 B | G 1/2 B or M20 x1,5 | other on request |
| Connection position | radial bottom | centric back | radial bottom | centric back | radial bottom | |
| Window | Instrumental glass | | | | | |
| Movement | CuZn-alloy | | | | | |
| Dial | Aluminium white, scale and letters black, red mark pointer | | | | | special scale |
| Pointer | Aluminium black | | | | | |
| Temperatures | Medium: Tmax 60°C, ambient: -40°C; Tmax 60°C | | | | | BR 5321 up to 130°C |
| Weight approx.(kg) | 0,18 | 0,19 | 0,30 | 0,26 | 1,0 | |

## Dimensional drawing

Dimensions in mm




| Type | NS | D | G | a | b | b1 | h | SW |
|---|---|---|---|---|---|---|---|---|
| **4881** | 80 | 77 | G 1/4 B or G 1/2 B | 15 | 33 | - | 67 | 14/22 |
| **4421** | 80 | 77 | G 1/4 B or G 1/2 B | - | 31 | 65 | - | 14/22 |
| **4451** | 100 | 102 | G 1/2 B or M20x1,5 | 18 | 31 | - | 82 | 22 |
| **4461** | 100 | 102 | G 1/4 B or G 1/2 B | - | 31 | 49 | - | 14/22 |
| **5321** | 100 | 100 | G 1/2 B | 18 | 40 | - | 82 | 22 |
| **4951** | 160 | 150 | G 1/2 B or M20x1,5 | 18 | 45 | - | 114 | 17 |

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# 27100 - Prescor B 1/2 - 6.0 bar

Product Data Sheet 2024/05/08


For protecting water heaters and potable water systems.
When the system pressure reaches the set pressure, the Prescor B boiler valve begins to vent, whereby the pressure stops rising. If, due to specific circumstances, the pressure rapidly rises over the set pressure, the Prescor B boiler valve will open fully, creating a large blow off capacity. This is a permanent, reliable safeguard against overpressure. Venting can be prevented by installing a suitably sized Airfix expansion vessel for sanitary systems.
The seating of Prescor boiler valves is designed so that it not only makes a perfect seal but can also achieve a large blow-off capacity.
The hardness of the rubber is adapted according to the set pressure of the safety valve. Due to this combination of a specifically designed seating and special rubber it is possible to achieve optimum safety.

## Advantages

- Wide range so that the correct valve can be selected appropriate to the application.
- Can be used in combination with any storage boiler system.
- Because of the ''pop'' effect these valves have a high blow-off capacity.
- Solid brass housing.
- Valve seat with silicon free rubber seal.
- Anti-ageing steel spring maintains the set pressure accurately.
- With silicon free diaphragm that prevents moisture and dirt from getting into the moving parts.
- Construction and choice of materials are your guarantee of accuracy and safety.

## Technical Specifications

- Minimum/Maximum working temperature: 0 °C / 95 °C.
- Peak load: 140 °C.
- In accordance with PED 2014/68/EU and EN 12516-3.

| | | |
|---|---|---|
| Description | | Prescor B valve 1/2 x 1/2-6bar |
| Order Code | | 27100 |
| GTIN | | 08712874271005 |
| Model | | Prescor B |
| Set pressure [bar] | | 6.0 |
| Connection | A | Rp ½" |
| | B | Rp ½" |
| Dimensions | C [mm] | 68.7 |
| | D [mm] | 47.2 |
| | F [mm] | 21.5 |
| | G [mm] | 28.5 |
| Capacity [kW] | | 75 |



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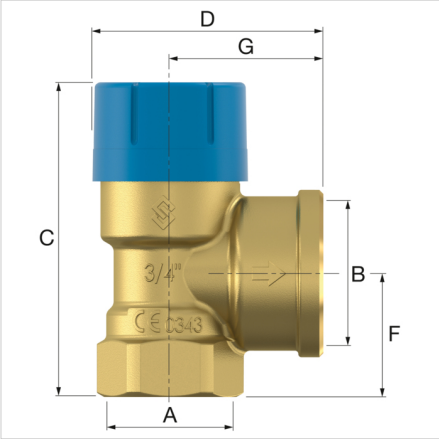





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## Classification General Data

| | |
|---|---|
| **Etim Group** | Measuring and control devices |
| **Etim Class** | Safety valve |
| **Product Name** | Prescor B Rp1/2" x Rp1/2" 6.0bar |
| **Brand** | FLAMCO |
| **Product Type** | Prescor Safety Valves |
| **Order Code** | 27100 |
| **GTIN** | 08712874271005 |

## Attributes

| | |
|---|---|
| **Model** | Right-angled |
| **Housing material** | Brass |
| **Housing material** | Brass |
| **Material quality** | Dezincification resistant brass (DZR) |
| **Nominal diameter** | 1/2 inch (15) |
| **Outer pipe diameter all connections** | 22 Millimetre |
| **Connection 1** | Internal thread cylindrical BSPT-Rp (ISO 7-1 / EN 10226-1) |
| **Nominal diameter connection 1** | 1/2 inch (15) |
| **Outer pipe diameter connection 1** | 21.3 Millimetre |
| **Connection 2** | Internal thread cylindrical BSPT-Rp (ISO 7-1 / EN 10226-1) |
| **Nominal diameter connection 2** | 1/2 inch (15) |
| **Article compression class** | PN 16 |
| **Flange compression class** | PN 16 |
| **Maximum pressure at 20 C** | 10 Bar |
| **Max. operating pressure at 20 °C** | 10 Bar |
| **Max. medium temperature (continuous)** | 95 Degrees celsius |
| **Medium temperature (continuous)** | 0 - 95 °C |
| **Min. medium temperature (continuous)** | 0 Degrees celsius |
| **Surface protection** | Untreated |
| **Right-angled model** | Yes |
| **Bellows seal** | Yes |
| **Sealing** | Ethylene-propylene diene monomer rubber (EPDM) |
| **Overflow pressure** | 5.6 - 6.2 bar |
| **Suitable for continuous operation** | Yes |
| **Length of connection 1** | 21.5 Millimetre |
| **Working length connection 1** | 21.5 Millimetre |
| **Length of connection 2** | 28.5 Millimetre |
| **Working length connection 2** | 28.5 Millimetre |
| **Height** | 69 Millimetre |
| **Angle of the device** | 90 Degrees |
| **Spindle angle** | 180 Degrees |
| **Suitable for heating** | No |
| **Suitable for cooling** | No |
| **Suitable for solar heating** | No |
| **Suitable for hot tap water** | Yes |



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## Find more information online:

Installation and operating instruction
CE declaration
ACS certificate
Declaration of conformity UKCA
Prescor B ADSK
Prescor B DWG
Prescor B IPT
Prescor B STEP
Prescor B RFA
Packaging data

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# PRECISION DIGITAL THERMOMETER
## battery powered

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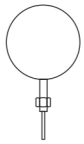
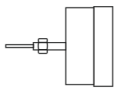
## Nominal size 63, 100
## Accuracy 0,3% ± 1 digit

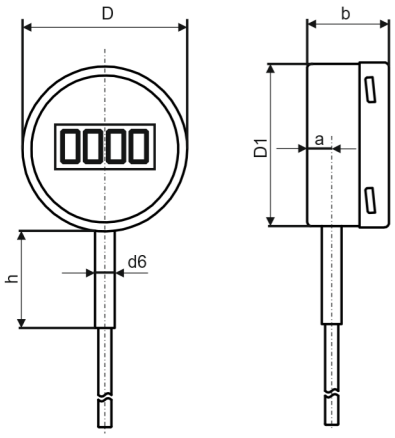

The battery-operated digital thermometers consist of a platinum resistance thermometer and an LC display, which are built into a robust standard stainless steel thermometer housing.

The execution with capillary is possible.

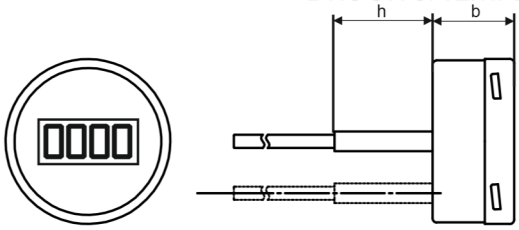
**Application**
Industrial and plant construction
refrigeration and food industry

| Type | 7035 | 7036 | 7037 | 7038 | Options |
|---|---|---|---|---|---|
| Nominal size | 100 | 100 | 100 | 63 | |
| Symbol |  |  |  | Connection bottom, back and with capillary line | Version with measuring device holder, measu-ring point identification |
| Connection position | radial bottom | centric back | radial bottom or centric back | radial bottom or centric back | other connection positions |
| Accuracy | Display: 0,3% v.E. ± 1 digit<br>Sensor: Cl. B acc. to DIN EN 60751 (±0,3 K at 0°C) | | | | |
| Measuring ranges / resolution | -50,0 / 250,0 °C - 0,1 K<br>-99,9 / +550,0°C - 0,1 K | | | -50/+199,9°C - 0,1 K<br>-50,0/+550,0°C - 1 K | |
| Sensor | Platinum measuring resistor Pt1000 according to DIN EN 60 751 | | | | |
| Measuring rate | 15 s | | | | |
| Case | Bayonet case, CrNi-steel 1.4301, with pressure compensation element | | | | Rear mounting edge Material: 316L (1.4404) |
| Window | Instrument glass | | | | |
| LC-display | 4-digit<br>Digit height 18 mm | | | 3,5-digit<br>Digit height 10 mm | |
| Battery | 3,6 V Lithium battery AA 2600 mA | | | 1/2AA, 1200 mA | |
| Battery life | depending on use approx. 5-7 years, exchangeable | | | | |
| Process connection and sensor types | See page 3 | | | | |
| Stem material | CrNi-steel 1.4571 | | | | |
| Stem -Ø | 6, 8 or 10 mm | | | 6 mm | |
| Stem length | Standard: max. 2,5 m | | | | |
| stat. pressure | max. 25 bar | | | | |
| Capillary line (max.15m) | - | | up to 180°C silicone, up to 260°C PFA | | Cable armored with pro-tective spiral hose |
| Temperatures | Ambient: -10°C…+60°C, storage: -20°C…+70°C | | | | |
| Protection | IP65 according to DIN EN 60 529 | | | | |

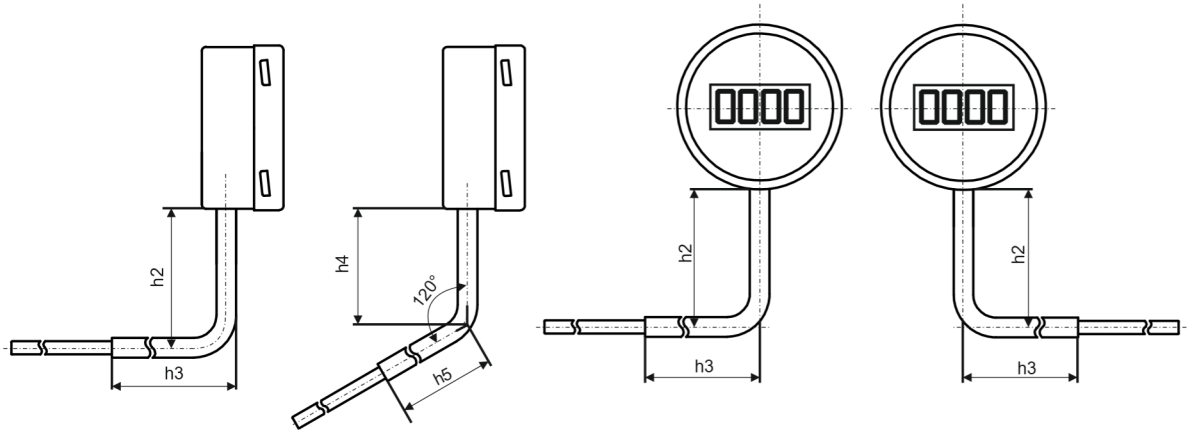
**Dimensional drawings** Dimensions inmm



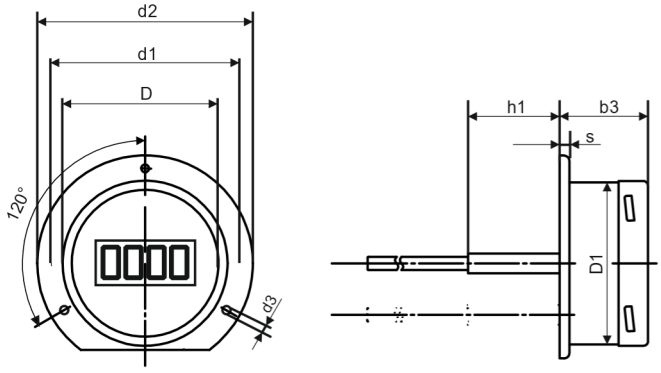

**Vertical Bottom Stem Position**




**Connection back**




**Angular Bottom Stem Position**




**With lower flange**

| NS | a | b | b3 | D | D1 | d1 | d2 | d3 | d6 | h | h1 | h2 | h3 | h4 | h5 | s | Masse |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **63** | 12 | 39 | 42 | 64 | 62 | 75 | 85 | 3,6 | 12 | 60 | 57 | 85 | 120 | 70 | 120 | 5 | 0,24 kg |
| **100** | 15 | 50 | 53,5 | 101 | 99 | 116 | 132 | 4,8 | 12 | 0 | 56,5 | 85 | 120 | 70 | 120 | 6 | 0,46 kg |

**Stem types** Dimensions in mm

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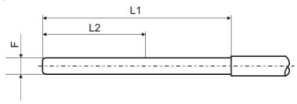
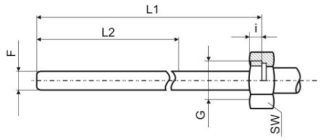
| Type | Process connection | Form acc. DIN 13190 | Thread - Dimensions | Suitable thermowell models |
|---|---|---|---|---|
| **G1** | Without screw fitting, plain stem | Form 1 | | |



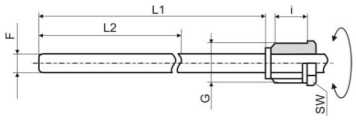

| Type | Process connection | Form acc. DIN 13190 | Thread - Dimensions | Suitable thermowell models |
|---|---|---|---|---|
| **G3** | Union nut | Form 5 | | |




| G | SW | i |
|---|---|---|
| G1/2 | 27 | 10 |
| G3/4 | 32 | 12 |
| M20 x1,5 | 27 | 10 |
| M24 x1,5 | 32 | 12 |
| M27 x 2 | 32 | 12 |

Form 4.1
Form 4.1F
Form 8
Form 9

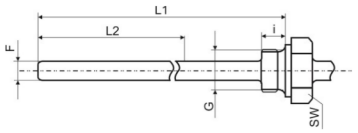
| Type | Process connection | Form acc. DIN 13190 | Thread - Dimensions | Suitable thermowell models |
|---|---|---|---|---|
| **G4** | Male thread turnable | Form 4 | | |




| G | SW | i |
|---|---|---|
| G1/2B | 22 | 20 |
| G3/4B | 27 | 23 |
| M18x1,5 | 22 | 14 |
| M20x1,5 | 22 | 20 |

Form 4
Form 4F
Form 5
Form 6 und 7

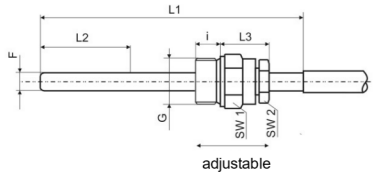
| Type | Process connection | Form acc. DIN 13190 | Thread - Dimensions | Suitable thermowell models |
|---|---|---|---|---|
| **G4.1** | Male thread rigid | Form 6 Form 7 | | |




| G | SW | i |
|---|---|---|
| G1/2B | 27 | 14 |
| G3/4B | 32 | 16 |
| 1/2“NPT | 27 | 19 |
| 3/4“NPT | 27 | 19 |
| M18x1,5 | 24 | 14 |
| M20x1,5 | 27 | 14 |

Form 4
Form 4F
Form 5
Form 6 und 7

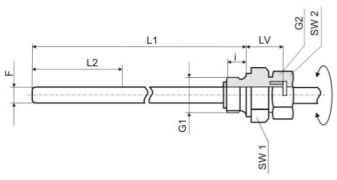
| Type | Process connection | Form acc. DIN 13190 | Thread - Dimensions | Suitable thermowell models |
|---|---|---|---|---|
| **G5** | Male thread Compression fitting | Form 2 Form 3 | | |




| G | SW1 | SW2 | i |
|---|---|---|---|
| G1/2B | 27 | 22 | 14 |
| G3/4B | 32 | 22 | 16 |
| 1/2“NPT | 27 | 22 | 19 |
| 3/4“NPT | 27 | 22 | 19 |
| M20x1,5 | 27 | 22 | 14 |

Form 4
Form 4F
Form 5
Form 6 und 7

| Type | Process connection | Form acc. DIN 13190 | Thread - Dimensions | Suitable thermowell models |
|---|---|---|---|---|
| **G6** | Male thread turnable / double male adapter | - Lv = 28 mm | | |




| G | G2 | SW1 | SW2 | a |
|---|---|---|---|---|
| G1/2B | G1/2B | 27 | 27 | 14 |
| G3/4B | G1/2B | 32 | 27 | 16 |
| 1/2“NPT | G1/2B | 27 | 27 | 19 |
| 3/4“NPT | G1/2B | 27 | 27 | 19 |
| M20x1,5 | M20x1,5 | 27 | 27 | 14 |
| M24x1,5 | M20x1,5 | 32 | 27 | 14 |
| M27x1,5 | M20x1,5 | 32 | 27 | 16 |

Form 4
Form 4F
Form 5
Form 6 und 7

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