

Heating Temperature Regulators

TYPE TR203C&CE

Description

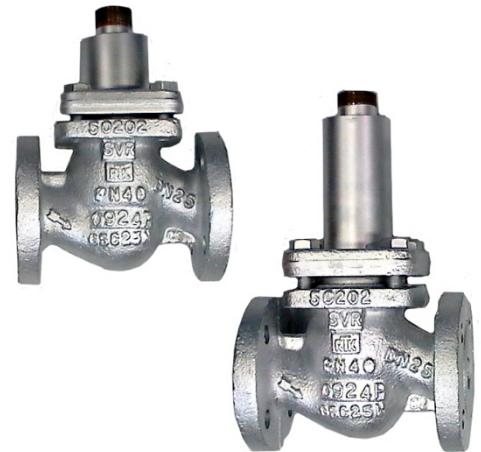
This regulator is self-operated and can control the fluid temperature compare to set point without any outside energy. **The valve proportionally closes when temperature rises.** This regulator is designed for many applications like heating systems as heat exchangers, boilers, etc... Applicable for liquids, gases and steam up to 350°C (200°C when ATEX zone). The complete temperature regulator is composed by a valve an adjustable set point device. Depending of the application, many thermostatic actuators are available (see NTP200 data sheet).

Two different types of thermostatic valves:

- TR203 C (Direct single seat)
- TR203 CE (Balanced direct single seat)

Features

Wide of range Kvs : 0.5 à/to 32.7
 Maximum differential pressure: 25 bar
 Set point: 0°C ... 200°C (see page 6)
 Design for a wide range of fluids



Technical characteristics

Nominal Diameter: Flanges DN 15 ...100, ISO PN16 – 40, ANSI 150 and 300 Lbs. Threaded ½", ¾" et 1", GAZ et/and NPT.

Nominal pressure : PN 25 ... 40

Body materials : Acier 1.0619/A 216 WCB , Inox 1.4408/A 351 CF8M

Specifications

- Temperature regulator type TR203 C or TR203 CE

Nominal diameter ND _____ Nominal pressure PN _____ Valve body made of _____

Flanges according DIN Kvs = _____ m³/h - Seat = _____ mm

Seat, stem and cone in stainless steel

- Thermostatic actuator type _____

Set point range ___ to ___ °C Thermostatic actuator made of _____

With capillary tube in Cu/stainless steel jacketed length ___ m (2 m in standard)

Double nipple / Thermo well Brass / Stainless steel

Options

- Cone with PTFE soft seat max 150°C
- Valve free of non-ferrous metal
- Separated control device thermostatic actuator (type TP202)
- DN / ANSI Class 150 and 300 flanges

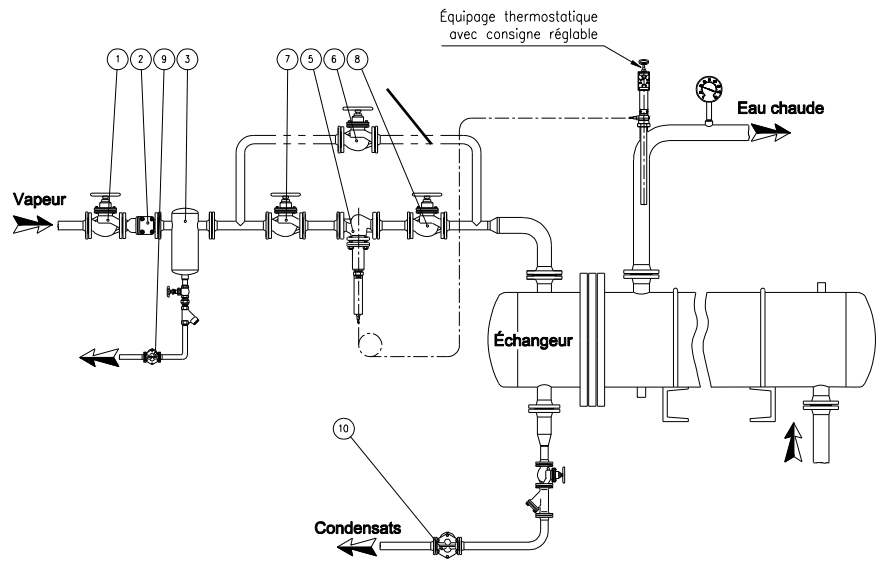
Function

The temperature regulator is self-operated without auxiliary energy for controlling the temperature to the adjusted set point. The valve closes proportionally at temperature changing when the temperature sensor, a set point adjuster, a capillary tube and a working piston. Depending on the application different thermostats stand for the selection.

The temperature regulators operate according to the liquid expansion principle. If the temperature increases at the sensor, this causes a warming and an expansion of the filling liquid at the same time and therefore the valve closes over the working piston. While cooling-off, this occurs in the reversed sense.

With a key, the set point can be adjusted step-by-step, to value which can be read off at the scale (marking 1-8).

All thermostats are equipped in series, with an excess temperature safety device (max 35°C above adjusted set point).



Mounting example

Rep.	Désignation
1	Isolating valve
2	Y strainer
5	Thermostatic valve
6	Bypass valve
7	Valve
8	Outlet isolating valve

Mounting

The temperature regulator has to be installed preferably with working piston up side down into pipelines running horizontal.

The temperature sensor can be installed in any desired position. Its whole length must be immersed in the medium to be controlled.

Maximum Differential Pressures

- **TR203 C** (Direct single seat plug)

DN	Screwed sockets	½"		¾"		1" (1)									
	Flanges	15		20		25		32		40		50		65	
	Ø seat	Δp	Kv	Δp	Kv	Δp	Kv	Δp	Kv	Δp	Kv	Δp	Kv	Δp	Kv
	4	25	0.5	25	0.5	25	0.5								
	8	25	1.7	25	1.7	25	1.7								
	12	25	2.7	25	3.7	25	4								
	15	25	3.3	25	4.2	25	5.2								
	20			25	6	25	7.5	25	9.4	25	11.2				
	25					19	9.2								
	32							11	15			11	24		
	40									6	24				
	50											4	37		
	65													1.2	65

(1) : Max seat diameter 20 mm

- **TR203 CE** (Balanced direct single seat plug)

DN	Flanges	25		32		40		50		65		80		100	
	Ø seat	Δp	Kv	Δp	Kv	Δp	Kv	Δp	Kv	Δp	Kv	Δp	Kv	Δp	Kv
	25	25	9.2												
	32			25	15			25	24						
	40					25	24								
	50							25	37						
	65									15	61				
	80											15	82		
	100													3	110

Limits of use

Type	Nominal Diameter	Sealing
TR203 C (Direct single seat)	DN 15 ... DN 65	Metallic sealing < 0,05% Kvs according ANSI B16 104 With thermostatic actuator NTP200
TR203 CE (Balanced direct single seat)	DN 25 ... DN 100	

Dimensions

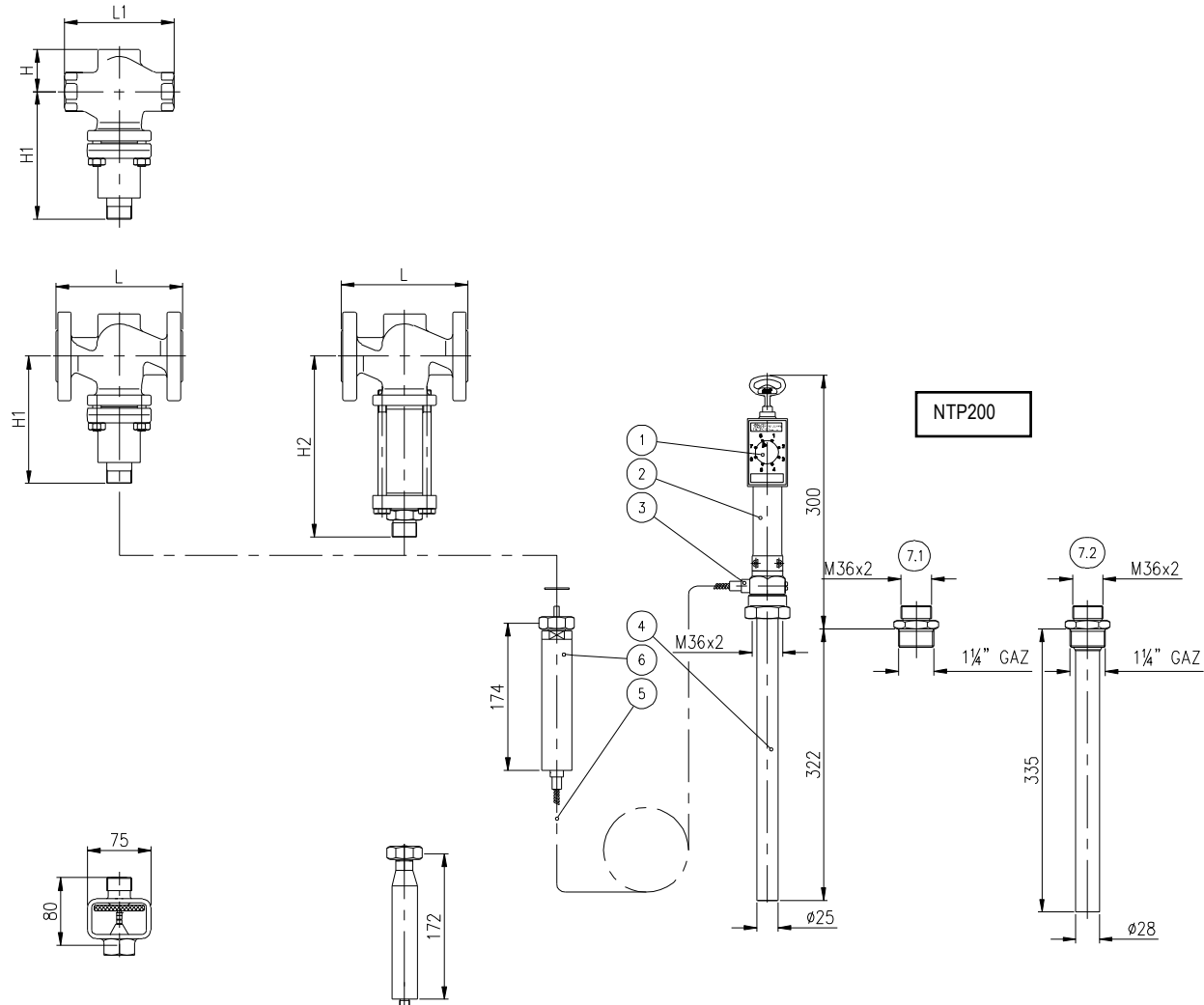
Valve

Thermostatic Actuator

TR203 C

TR203 CE

NTP200/NTP202



Type HM

Combinaison possible avec une rallonge T ou FT pour températures plus élevées. Extension part with hand wheel. Allows a manual adjustment in case of thermostat defect. Maximum temperature 220°C.

Can be combined with T or FT for higher temperature.

Type T

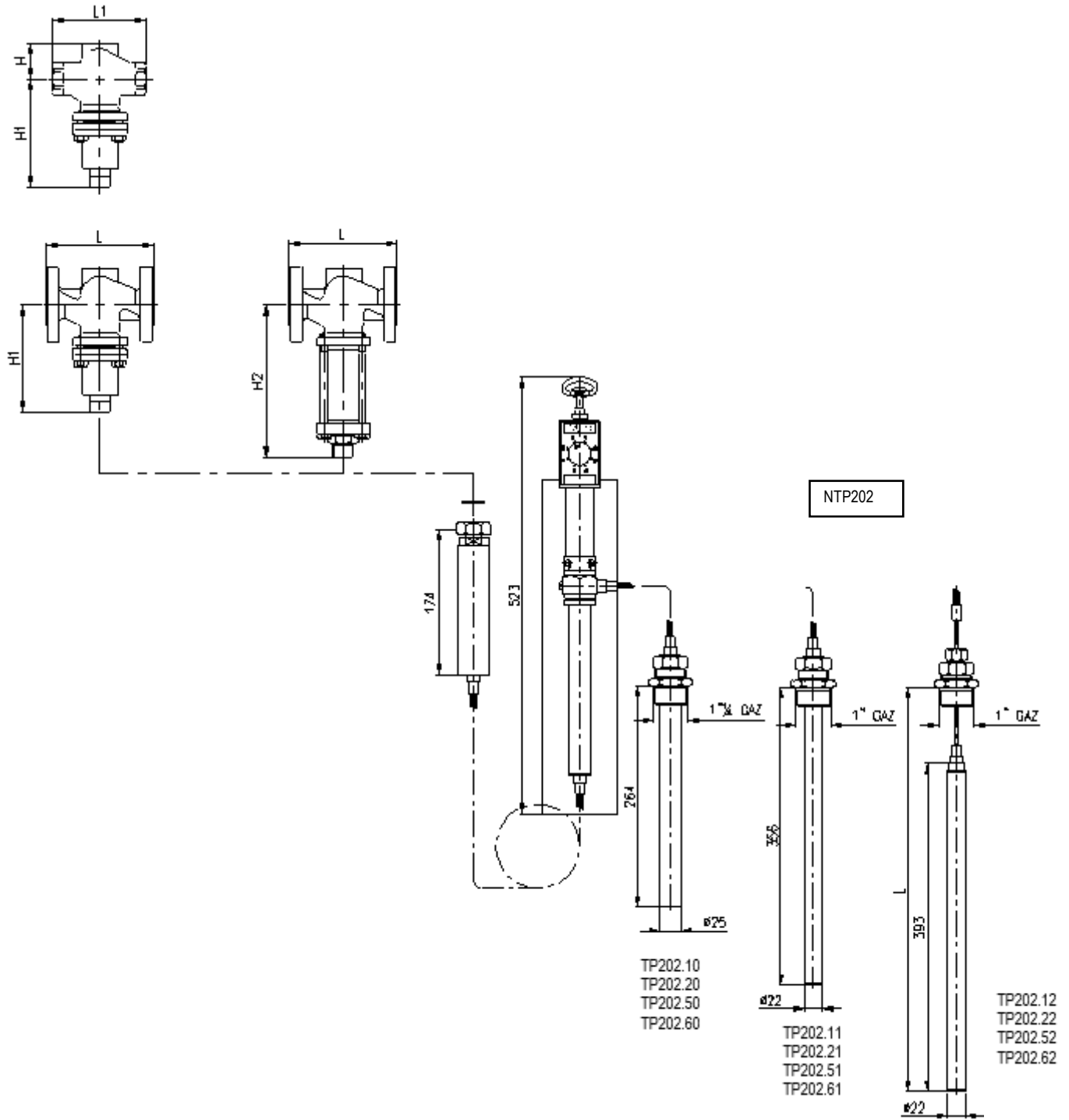
T : Extension for high temperature (175 to 300°C)

FT : Température maxi 350°C.

Pression de service 40 bar
FT : Bellow seal device for thermal oil : 350°C max and 40 bar max

Thermostatic actuator : See data sheet NTP200/NTP202

- 1 = Set point scale
- 2 = Excess temperature safety device
- 3 = Coupling nut
- 4 = Immersion sensor
- 5 = Capillary tube
- 6 = Working piston
- 7.1 = Double nipple
- 7.2 = Thermo well



Dimensions And Weights

Threaded

DN	½"	¾"	1"	1" ½	2"
L1	130	130	130	200	200
H1	150	150	150	175	175
H	60	60	60	90	90

ISO PN16 – 25 – 40

DN	15	20	25	32	40	50	65	80	100
L	130	150	160	180	200	230	290	310	350
H1 TR203C	150	150	150	155	180	175	185	/	/
H2 TR203CE	/	/	220	225	250	245	260	270	290
Poids TR203C Weight (kg)	5	6	7	10	16	18	23	/	/
Poids TR203CE Weight (kg)	/	/	8	11	18	20	26	32	47

ISO PN20 - ANSI Class 150

DN	½"	¾"	1"	1" ½	2"	3"	4"
L RF	184	184	184	222	254	298	353
L RTJ	/	/	197	235	267	311	365

ISO PN50 - ANSI Class 300

DN	½"	¾"	1"	1" ½	2"	3"	4"
L RF	190	194	197	235	267	318	368
L RTJ	201	207	210	248	283	333	384

*All dimensions are in mm

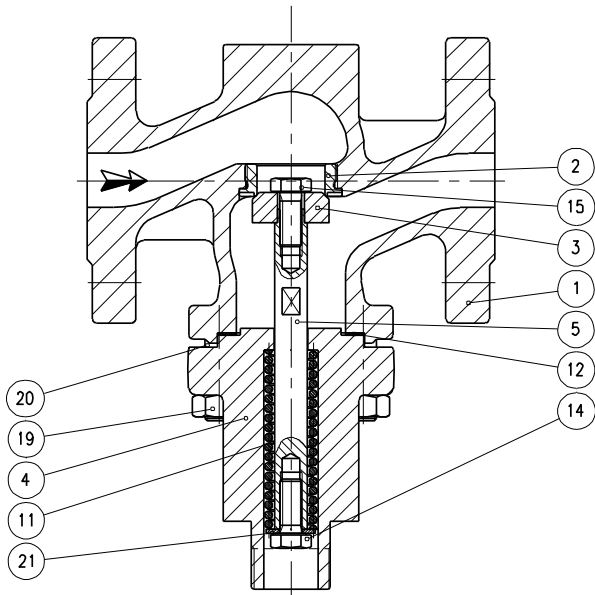
The set point scale is graduated from 1 to 8 for the following ranges:

Consignes Set point ranges
0° à/to 70°C
30 à/to 100°C
50 à/to 120°C
80 à/to 150°C
100 à/to 170°C
130 à/to 200°C*

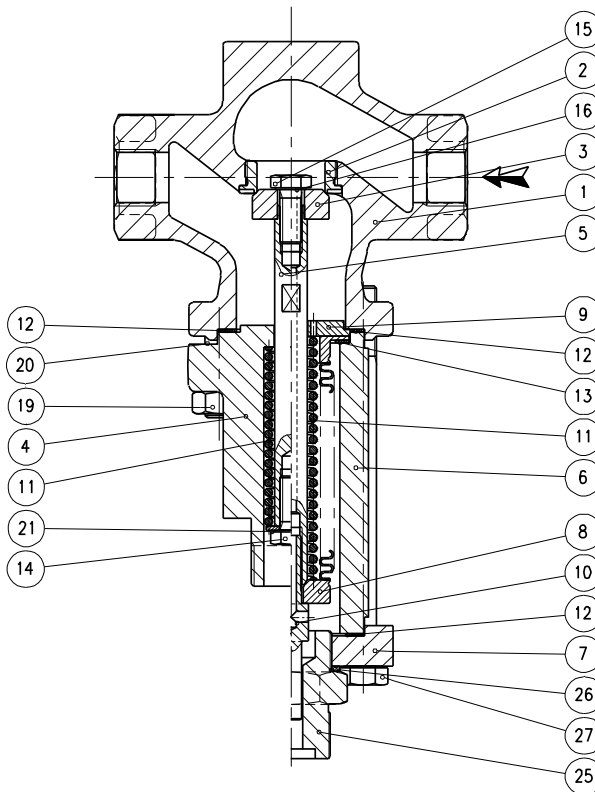
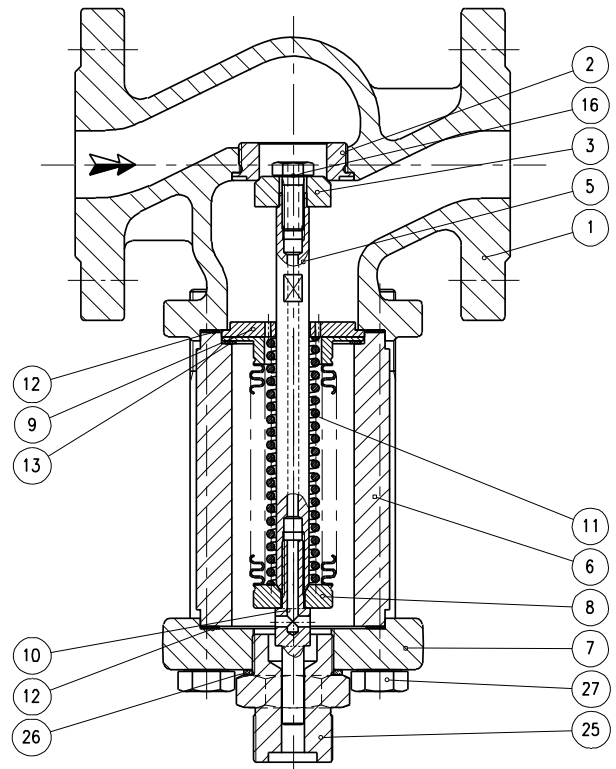
*For stainless steel thermostats only

Spare Parts List

TR203 C



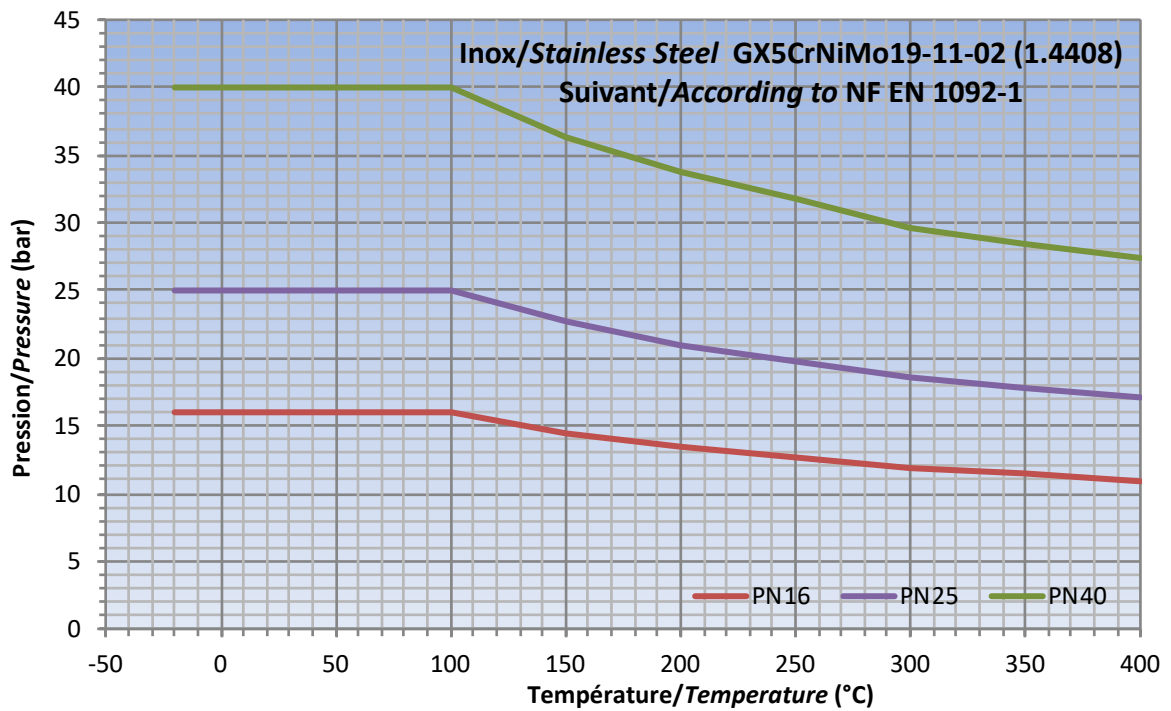
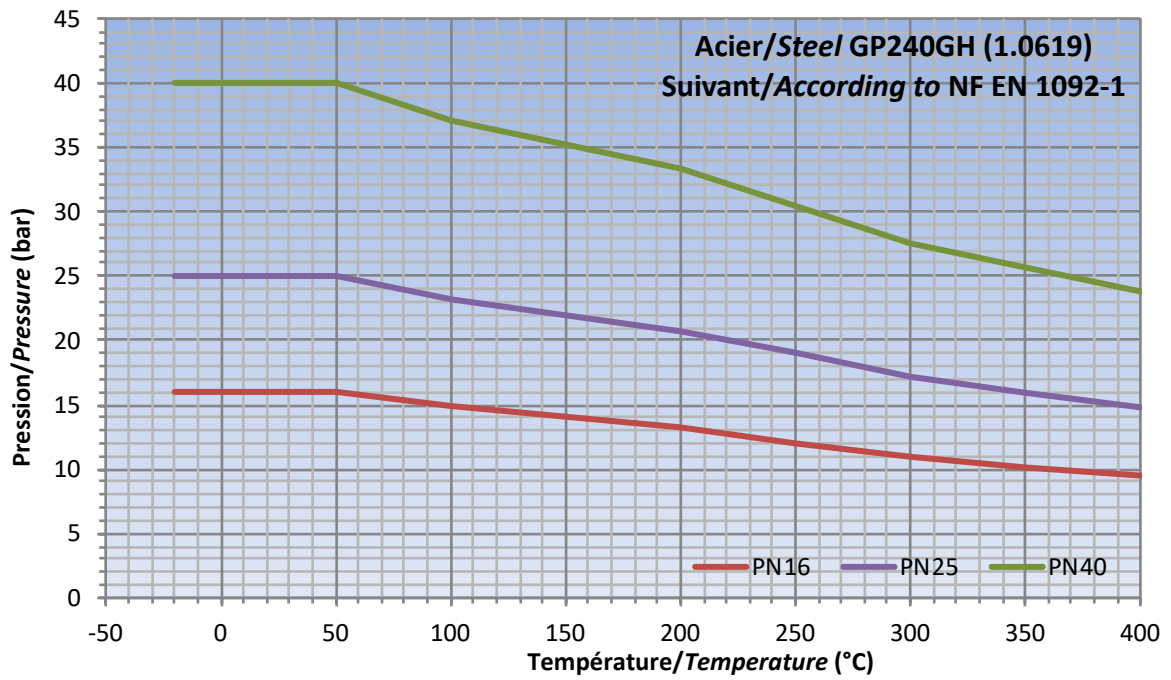
TR203 CE



Rep.	Désignation	Material
1	Body	1.0619 / 1.4408
2*	Seat	Stainless steel
3*	Plug	Stainless steel
4	Cover	Steel
5*	Stem	Stainless steel
6	Case	Steel / Stainless steel
7	Flange	Steel / Stainless steel
8*	Bellow	Stainless steel
9	Spring plate	Stainless steel
10	Nipple	Stainless steel
11	Spring	Steel / Stainless steel
12*	Gasket	Graphite
13*	Gasket	Graphite
14	Screw	Stainless steel
15	Screw	Stainless steel
16	Screw	Stainless steel
18	Cap (DN15-20 / 1/2"-1")	Stainless steel
19	Nut	Steel / Stainless steel
20	Stud	Steel / Stainless steel
21	Washer	Steel / Stainless steel
25	Coupling nut	Stainless steel
26*	Gasket	Cooper
27	Screw	Steel / Stainless steel

* Pièces de rechange disponible en kit / Spare parts available in kit

Pressure -Temperature Charts



Pressure -Temperature Charts

