Flowmetering balancing valves

from DN 15 to DN 500

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MADE IN FRANCE

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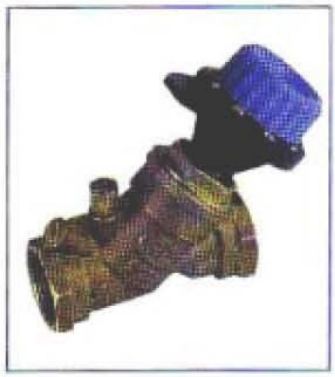


DESBORDES

Flowmetering balancing valves

are designed for measuring and adjusting the flow rate on networks by using the DESBORDES QUITUS electronic direct-reading measurement process.

Particular advantages

Speed of measurement and setting :
actuation of the handwheel instantly displays the new flow rate, without calculation or correction, without having to count the number of turns or use charts.
Pressure plugs are in the form of simple needle connectors easy to handle.

Easy access in any position due to the non-inclined operating handwheel and 2 measurement plugs fitted on the same side of the valve.

Anti-vandalability of adjustment thanks to a dual adjustment, sealed mechanism : the setting stored in memory is protected by a plug at all times.
This plug can also be sealed.

DESBORDES Balancing valves provide all the associated functions :
MEASURING + SETTING + STOP + MEMORY
+ TAMPER-PROOF OPERATION + DRAIN (accessory)

The turn counting indicator can be used for a pre-setting




Quitus


1400

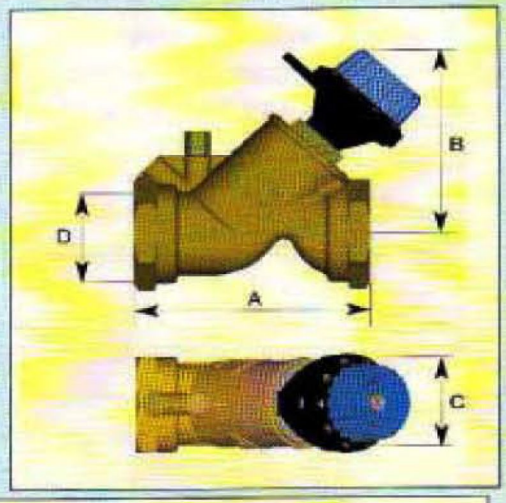
Technical characteristics

- bronze body, CuPb5Sn5Zn5
- brass mechanism, CuZn40Pb3 and CuZn39Pb2
- seals : EPDM rubber
- valve / flap seat sealed with PTFE seal
- double seal on memory stop, and flow measuring plugs
- control handwheel : polyamide 6-6 containing glass fibre and heat protected
- service pressure : PN 16 (16 bar)
- fluid temperature : -10°C to +120°C

1/2"	(15/21)	**1" 1/4**	(33/42)
3/4"	(20/27)	**1" 1/2**	(40/49)
1"	(26/34)	**2"**	(50/60)

Ref.	DN	max. flow rate m³/h	flow rate coef.(*)	A	B	C	Weight kg
1400	15	0,06 to 1,2	X 3	80	92	71	0,52
	20	0,2 to 4	X 10	87	95		0,58
	25	0,2 to 4	X 10	97	97		0,72
	32	0,4 to 8	X 20	114	115		1,12
	40	0,6 to 12	X 30	120	115		1,36
	50	1 to 20	X 50	141	125		2,06

(*) On each valve, the flow rate coefficient is engraved, which is useful for the plugging-in of the electronic measuring unit.



Flow rate setting

- **Connect** the 2 needles on the QUITUS electronic measuring unit ref. 700 N. They can be connected in either direction.
- **Read** the flow coefficient inscribed on the valve (multiplier 3, 10, 20, 30 or 50)
- Use the buttons on the measuring unit to select this coefficient.
- **Turn** the handwheel to obtain the required flow, read directly on the QUITUS measuring unit. The speed counter is not needed for this measurement. It can however be used on presetting or for visual opening checks.

To store the setting :

- **Remove** the plug holding the handwheel (hexagon/3 wrench).
- The max. flow memory screw is located at the bottom. Tighten it as far as it will go, using the same wrench.
- **Check** to make sure the handwheel cannot open any further.
- **Replace** the plug on the handwheel.It can be sealed with lead.

Assembly

- Observe the flow direction indicated by an arrow on the body.
Inlet side of the valve for stable and accurate measurement :
  - the pipe diameter must be equal to (or greater than) the diameter of the valve;
  - the minimum straight length of the pipe must be approximately 5 times the diameter of the valve.

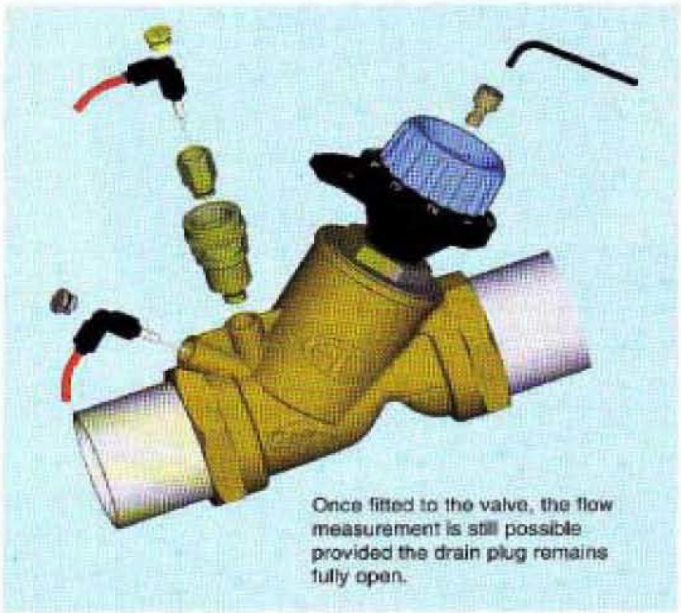
Outlet side : no special requirements

- The position and orientation of the valve do not affect measuring accuracy.

- Leave clear access to the handwheel fixing for the hexagon wrench used to set the maximum flow limit stop.

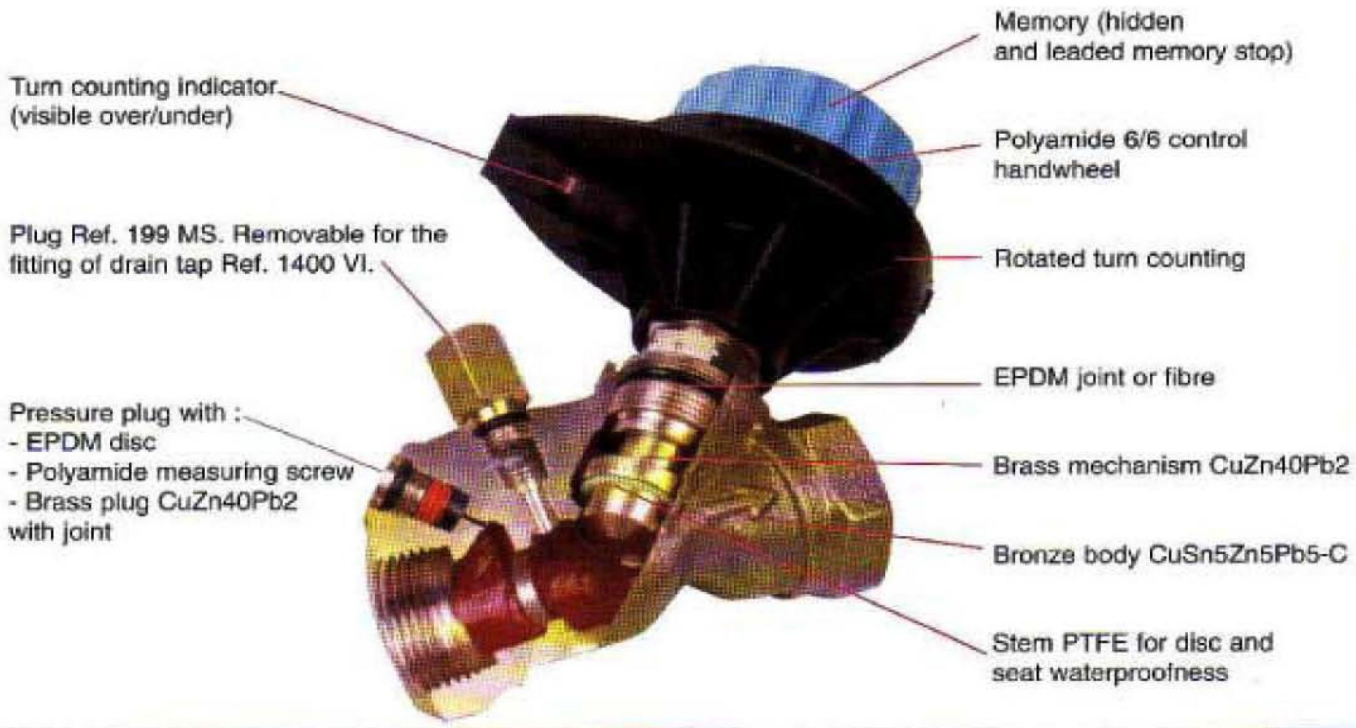
Flow range

The flow coefficient is inscribed on each valve.
The minimum flow rate is the lowest value displayed by the measuring unit. Max. flow applies to the flow rates usually used for heating. It may be exceeded for other applications.
The maximum is the limit given by the electronic measuring unit. However, with applications requiring a certain level of acoustic comfort, do not exceed th usual limits.

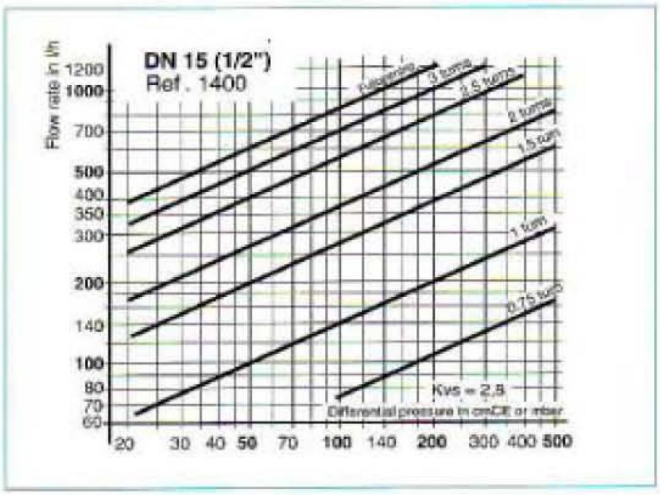


Once fitted to the valve, the flow measurement is still possible provided the drain plug remains fully open.

Flowmetering balancing valve



DN 15



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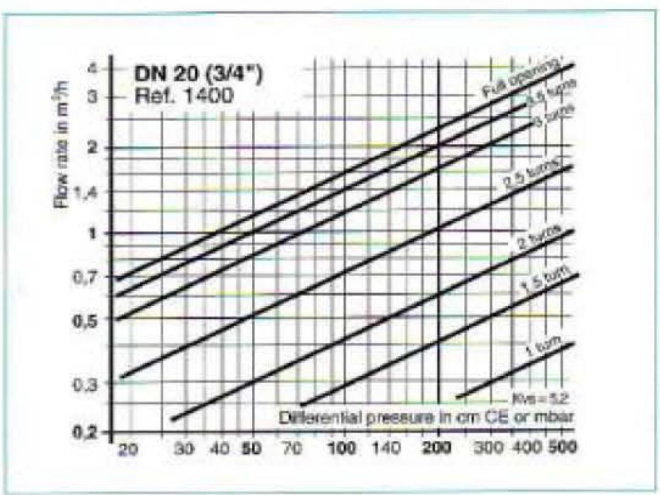
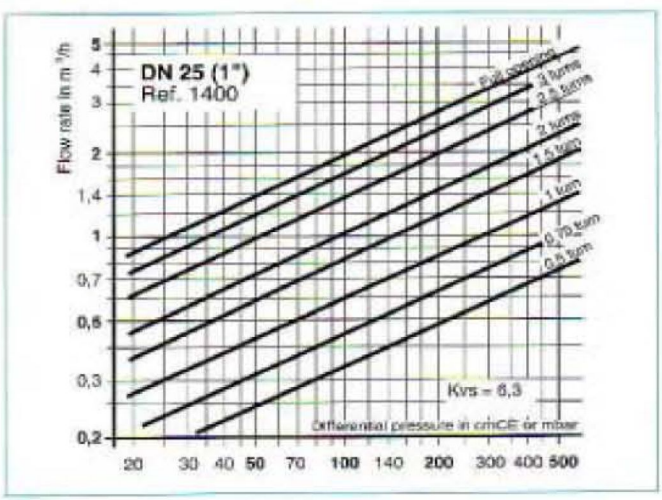
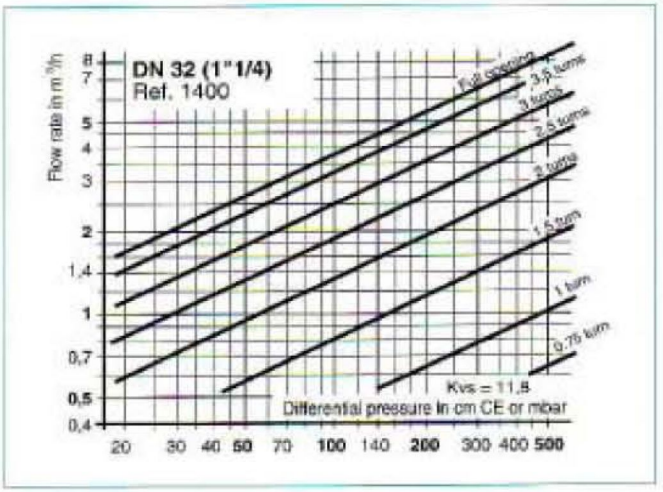


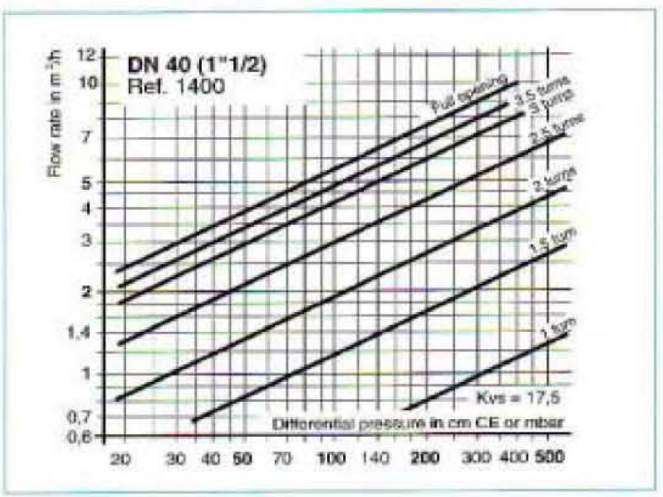
DN 25



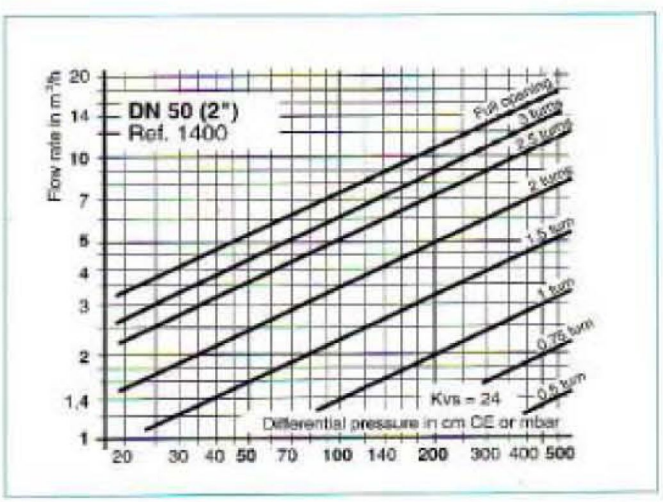
DN 32



DN 40



DN 50



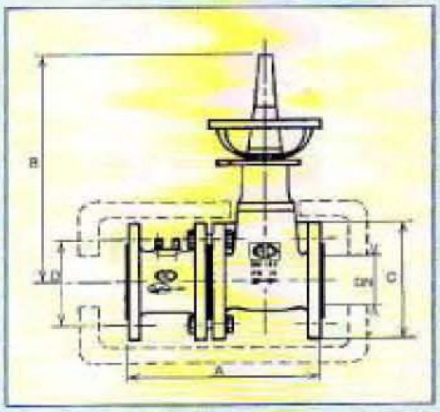
2400 Ter

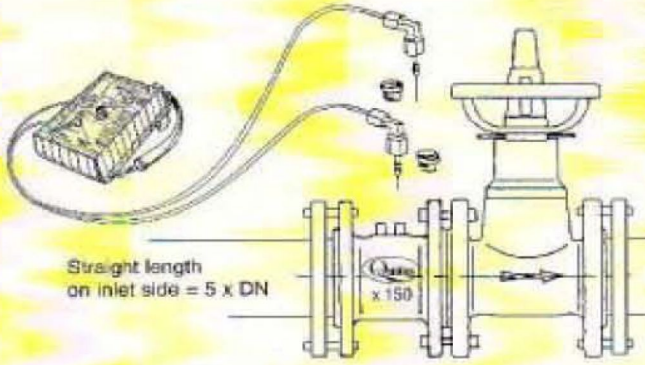
General characteristics

- cast iron body FGL 250 in accordance with NF A 32-101, DIN 1691GG 25, BS 1452 Grade 250
- DN 65, 80, 100, 125, 150, 200
- flanges PN 16 ISO 7005 (BS 4504, DIN 2501)
- length in accordance with ISO 5752 Series 1 (DIN 3202 F1, NF EN 558-1)
- maximum temperature 120°C (up to 130°C)
- stainless steel stem
- flap and seals of EPDM
- maintenance-free

Ref.	DN	Maximum flow rate m³/h	flow rate coef*	A	B	C	D	nØd	kg
2400 ter	65	2 to 40	X 100	290	315	185	145	4Ø18	21
	80	3 to 60	X 150	310	375	200	160	8Ø18	28
	100	4 to 80	X 200	350	420	220	180	8Ø18	37
	125	6 to 120	X 300	400	470	250	210	8Ø18	50
	150	10 to 200	X 500	480	575	285	240	8Ø22	66
	200	20 to 400	X 1000	600	750	340	295	12Ø22	117

*On each valve, the flow rate coefficient is engraved, which is useful for the plugging-in of the electronic measuring unit.





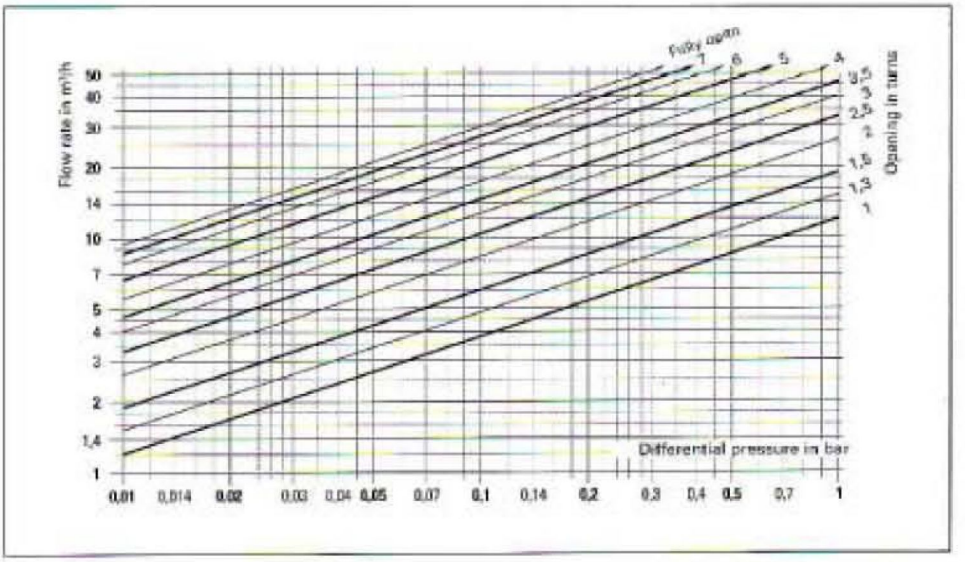
Indication of number of turns (1/10ᵉ turn)

No straight length required on outlet side

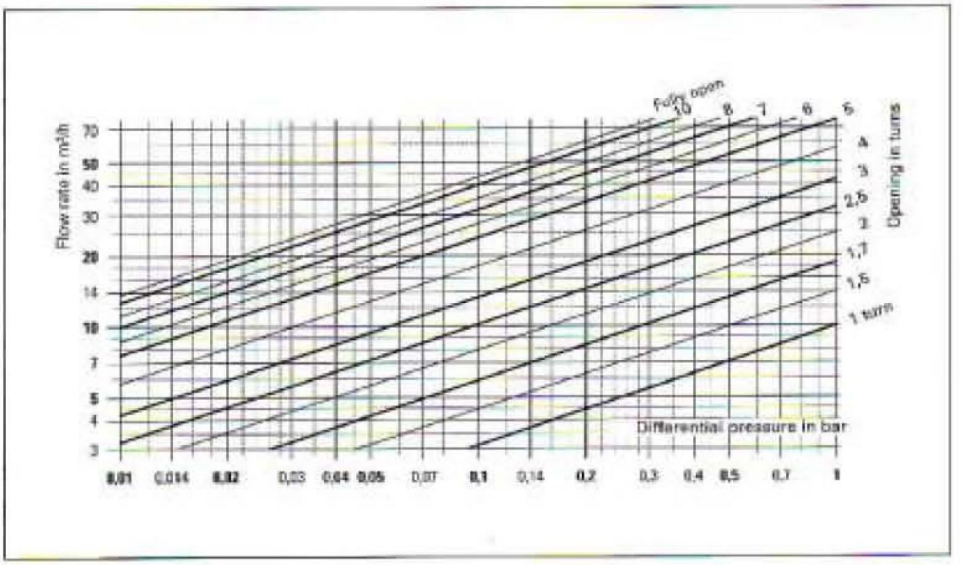
Flow direction arrow

Flow coefficient to be selected on flowmeter

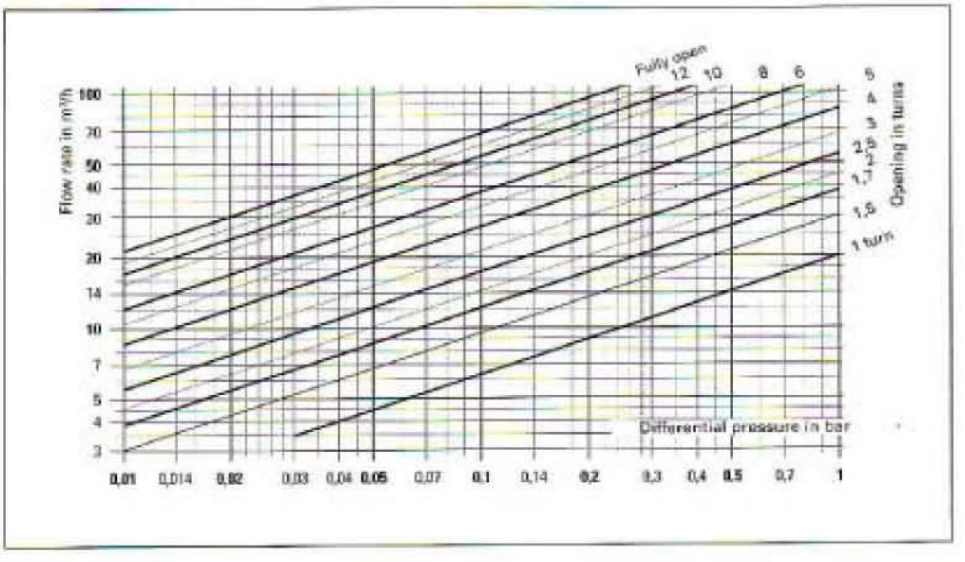
DN 65
Ref. 2400 Ter



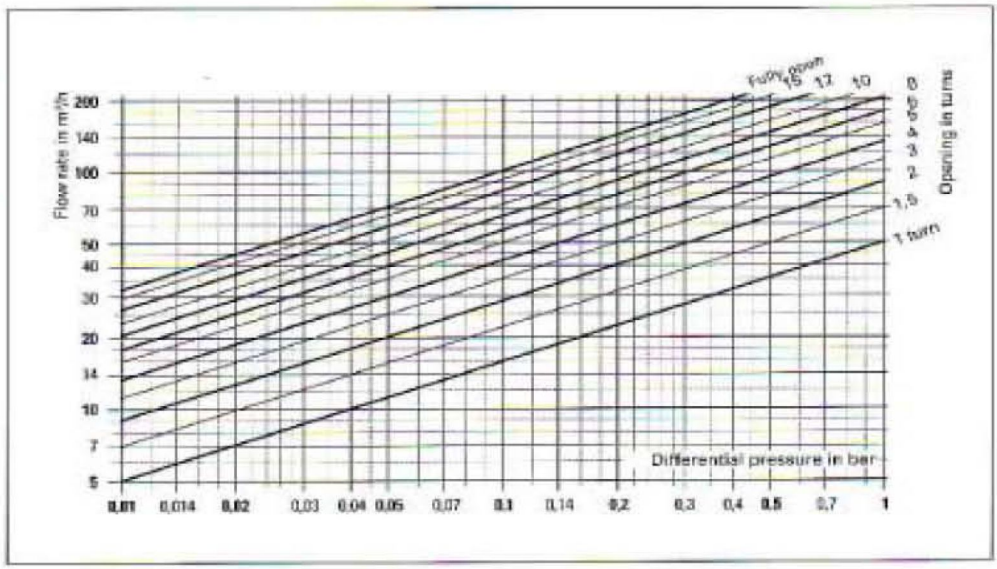
DN 80
Ref. 2400 Ter



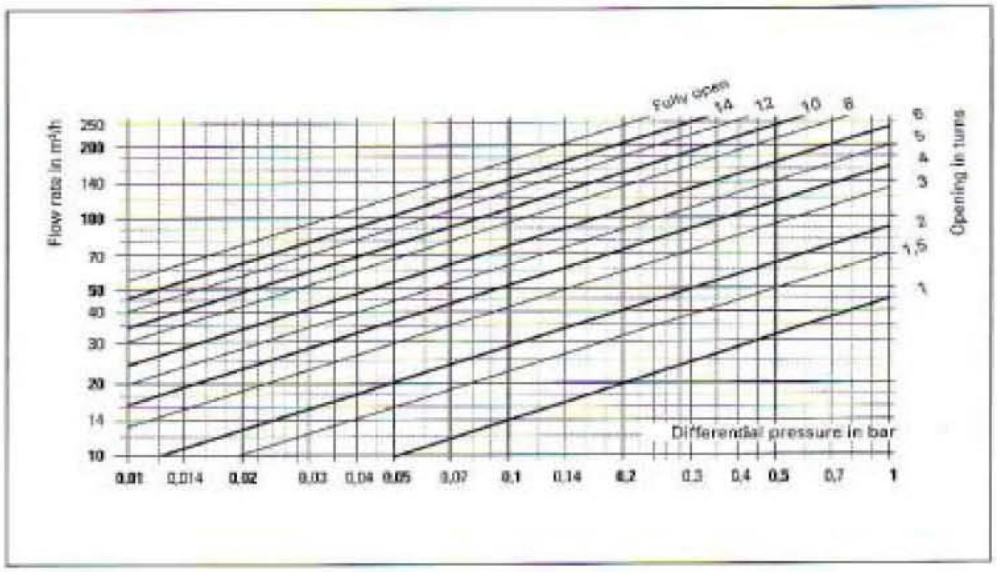
DN 100
Ref. 2400 Ter



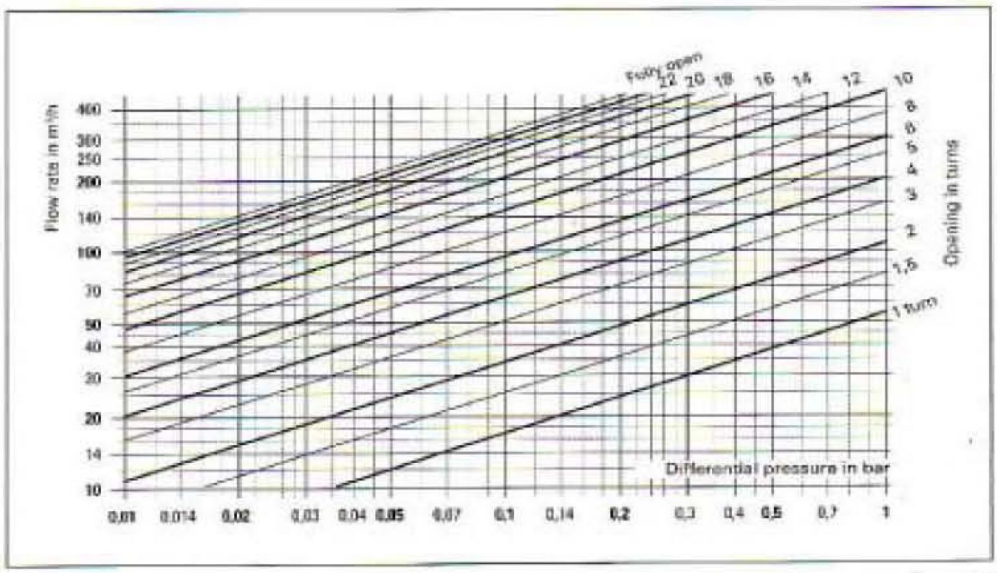
DN 125
Ref. 2400 Ter



DN 150
Ref. 2400 Ter



DN 200
Ref. 2400 Ter



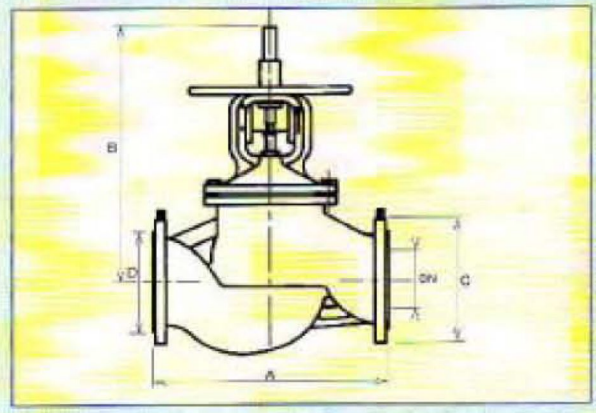
3400 Ter

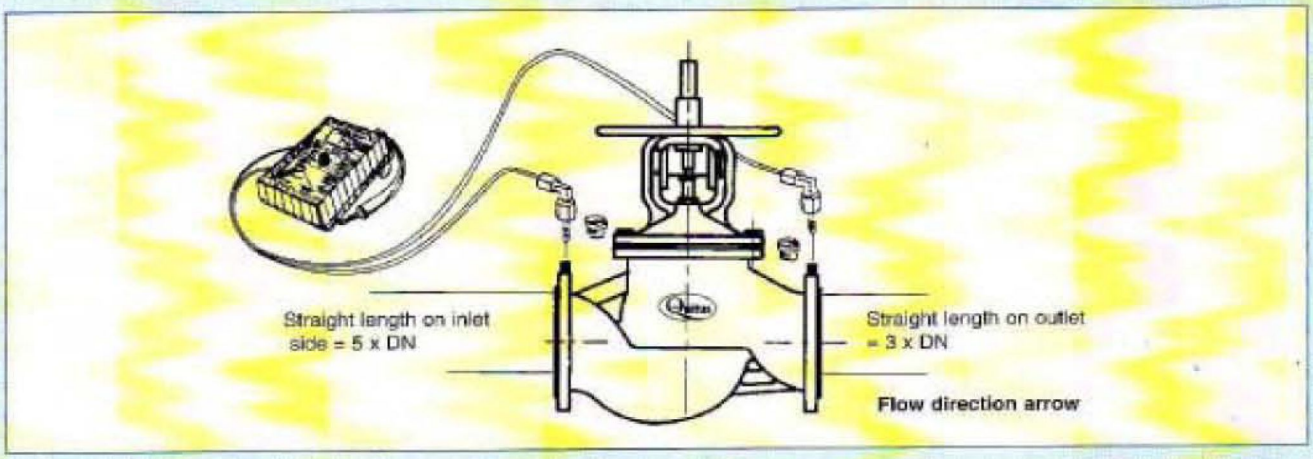
General characteristics

- cast iron body FGL 250 in accordance with NF A 32-101 (GG 25/DIN 1691, grade 250/BS 1452)
- DN 250, 300, 350, 400, 500
- PN 16
- flanges to ISO 7005 (DIN 2501 form C, BS 4504)
- length in accordance with ISO 5752 Series 1 (NF E 29-305 series 1, DIN 3202 F1)
- maximum temperature 120°C (up to 130°C)
- waterproofness of the stem
- maintenance-free
- bellow seal (DN 250 to 400)
- turn-counting indicator
- non-rising handwheel
- protection against rotation

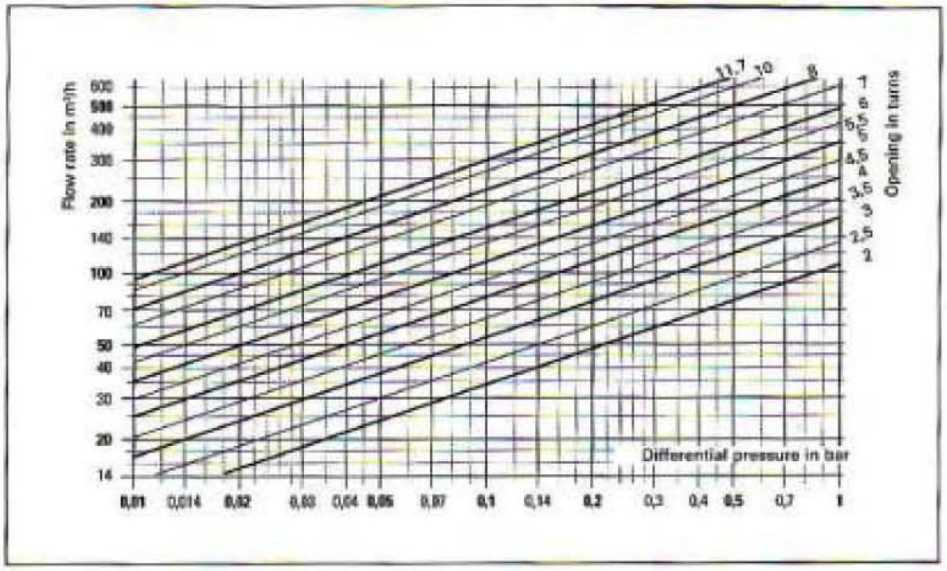
Ref.	DN	Kvs m³/h/ 1 bar	A	B	C	D	nØd	kg
3400 ter	250	945	730	840	405	355	12Ø26	185
	300	1635	850	900	460	410	12Ø26	270
	350	2220	980	1100	520	470	16Ø26	365
	400	3180	1100	1140	580	525	16Ø30	620
	500	4530	1350	1025	715	650	20Ø33	980

Kvs = flow rate in m³/h, fully open, under 1 bar headloss.

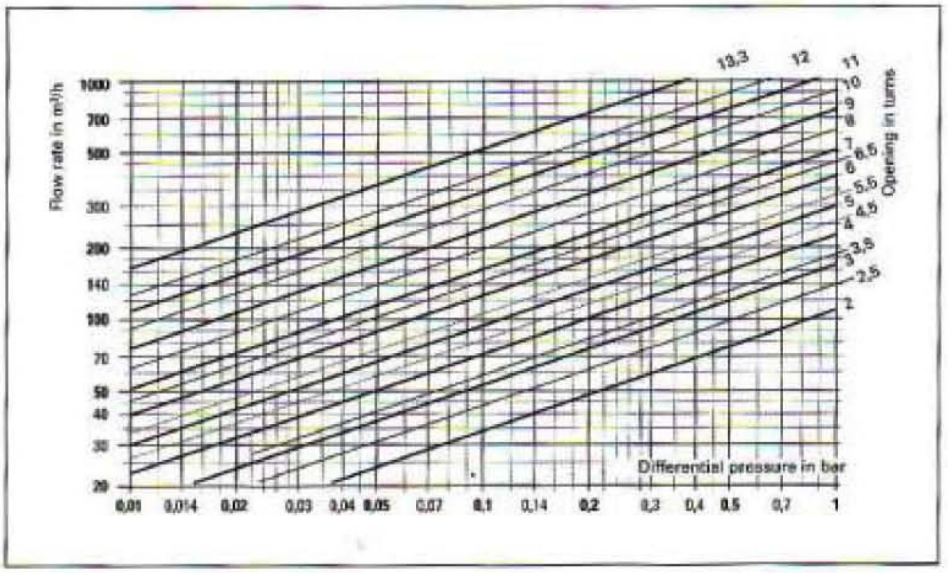




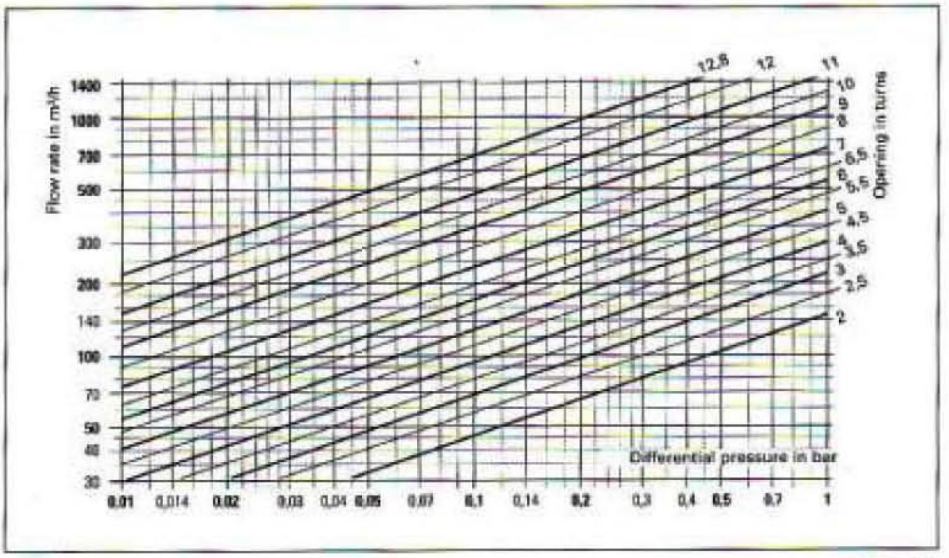
DN 250
Ref. 3400 Ter



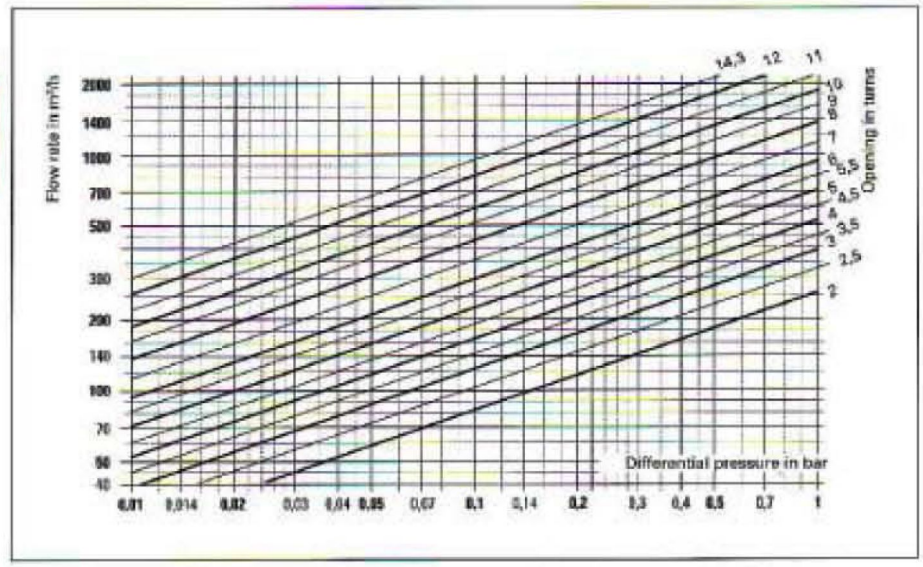
DN 300
Ref. 3400 Ter



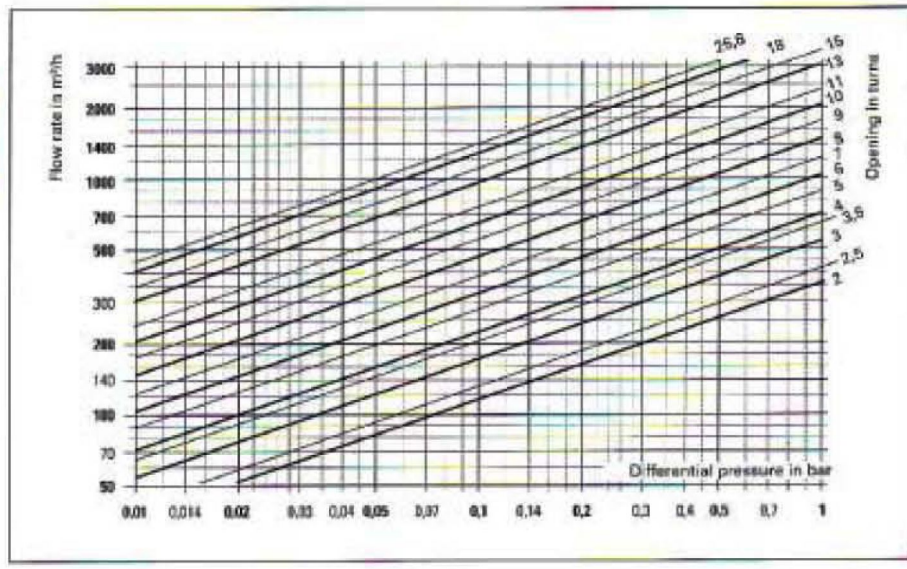
DN 350
Ref. 3400 Ter



DN 400
Ref. 3400 Ter



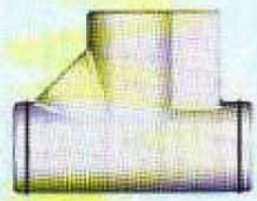
DN 500
Ref. 3400 Ter



Accessories

Drain valve*
Ref. 1400VI

(*) The drain valve is placed quite simply between the removable hexagon pressure tapping point and the body of the valve. (see picture).



Ref. 1400 ISO 15
1400 ISO 20
1400 ISO 25
1400 ISO 32
1400 ISO 40
1400 ISO 50
Available until DN 500

Flow outlet extensions
Ref. 199 M (1 piece)
Available until DN 500

700 N

General characteristics

This electronic measuring unit is designed to :

- ***measure and control the flow rate of the entire range of DESBORDES flowmetering balancing valves***
- ***measure the head losses on reference 3400 Ter to regulate their flow rate with charts***
- ***additionally to measure static or differential pressure on heating systems.***

QUITUS measuring system

Use

It could not be easier or quicker : all the useful information is noted on both sides of the measuring unit.
After unscrewing the plugs on the valves :

- **Connect** the sensors with a simple plug : flow rate measurement is automatic and instantaneous, with no other action required. The direction of connection is immaterial.
- **Select** the QUITUS coefficient engraved on the valve.
- **Set** the required value just turning the handwheel.
- **Reseal the pressure plugs.**

Measurement of flow rate

The instrument is fixed, with a display directly in litres/hour – m³/hour **after selecting** the flow coefficient specific to each valve model.

Automatic self-calibration guarantees precision at each connecting of sensors.

A TEST button enables to check at any time if measurement is correct by actuating automatic calibration.

Measurement of pressure

By holding the TEST button down (for about 1 second), the test is followed by a display of the pressure for each sensor as well as the differential pressure.
The value is given in bar.

To guarantee precision, measurement is not continuous. Each time the button is pressed, a new measurement is made.
The following pressures appear in order:

P1: pressure on upper sensor (on display side)
P2: pressure on lower sensor
dP: differential pressure (P1-P2)

This last measurement dP is used to regulate flanged QUITUS valves ref. 3400 Ter.

Warning:
The pressure measured is that on the measuring unit and not on the pressure plug.
The high precision of the measuring unit means that great care must be taken with any deviations in altitude for proper interpretation, bearing in mind that 1 m Water Column = 0.1 bar.

For correct measurement, **sensors should be filled with water.** A bypass is provided for this purpose.

After connecting just one sensor, with the measuring unit stopped, air can be bled from the sensors, at the beginning of the day or after changing a valve needle. Proper circulation of the water confirms that the needles are not blocked. Otherwise dismantle and clean.

By injecting an air flow into the sensor, the measuring unit can be drained of water to protect it against frost.

The display indicates any faults in connection (Err) or inadequate pressure (P = O) and any reduction in battery charge (bAt) (about 6 hours autonomy are, however, left).

The TEST button is used to control the display (8888) of the battery and any electronic faults (Err).

If not used, shutdown takes place automatically after 10 minutes. However, when connected to a 220 V mains supply, operation is continuous. The system can be stopped deliberately using the selector (STOP).

Pressure display range

Pressure on each sensor = 0.1 bar to 13 bar
Min. pressure differential = 0.001 bar or 1 mbar
Overall precision: better than 5% of flow rate.

Autonomy: 30 hours approximately on battery. When stopped, complete recharging of the battery takes 14 hours.

Footprint: Easily portable, robust case.
Compact size: 14 x 21 x 7 cm
Lightweight: 2 kg

An ultra-simple, unique measuring system for all QUITUS equipment.

The measuring unit is designed for use by professionals in air-con. and heating applications without any specific knowledge of electronics or experience in metrology.

After selecting the QUITUS equipment type with the selector, flow control is quick and easy.

2 stages:

•Insert the two needles.
Flow display is immediate.

•Read off the flow rate and adjust immediately.

Directions of use are given on the back of the measuring unit.

Accessories

Accessories supplied with ref. 700:
- quick connectors for conventional use up to 6 bar.
- metal connectors for exceptional use up to 13 bar.
- t-connection for measuring pressure on one needle only.
- battery charger with overvoltage protection against prolonged charging.
- strap.
- spare needle.
- two special tools for radiator module shutdown and anti-vandal system.
- the entire unit comes in a plastic case (52 x 36 x 13 cm) with foam infill.

Accessories for ref. 2400 ter (not available in stock, delivery time 15 days):
- isolating protection shell.
- long size TESTQUITUS pressure plugs.

Measurement and adjustment

Thanks to the instantaneous flow rate measurement, adjustment takes place directly without needing to refer to flow curves, nor to count the number of turns (except for reference 3400 Ter, where usual ΔP setting procedure has to be followed).

Fitting

. Respect the direction of flow indicated by the arrow on the body.
To ensure stable and accurate measurement, the following precautions should be taken on the inlet side of the valve :
- the piping must have a diameter which is equal to (or greater than) that of the valve.
- the length of the straight piping should be approx. 5 times the diameter of the valve.

No precautions need to be taken on the outlet side (except 3400 Ter).

. The position of the valve (horizontal, vertical, inclined, etc...) does not affect the accuracy of the measurement.

Water pressure reducing valves (and other fluids)

DESBORDES