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TOTALGAZ INDUSTRIE

GAS FILTERS
FTG 600

Introduction

FTG 600 impurity filters are used in all situations that require the filtration of natural gases (gas regulating and metering stations, delivery stations) and have the role of retaining the solid particles in the gas flow. The particles accumulate at the lower part of the filter body are periodically drained.

FTG 600 filters are mounted before the metering and control lines, usually within a filtration skid in order to allow the filtering cartridge to be replaced without stopping gas supply.

Operation

The gas flows through the inlet and reaches the filter body where velocity is reduced. As a result, solid particles of large dimensions as well as the liquid ones separate from the gas and accumulate at the bottom of the vessel from where they can be periodically purged through the purging connection.

As the gas flows through the filter element from outside to inside, residual solid particles are retained (depending on the rating of the filtering cartridge screen).

The clean gas flows towards the outlet.

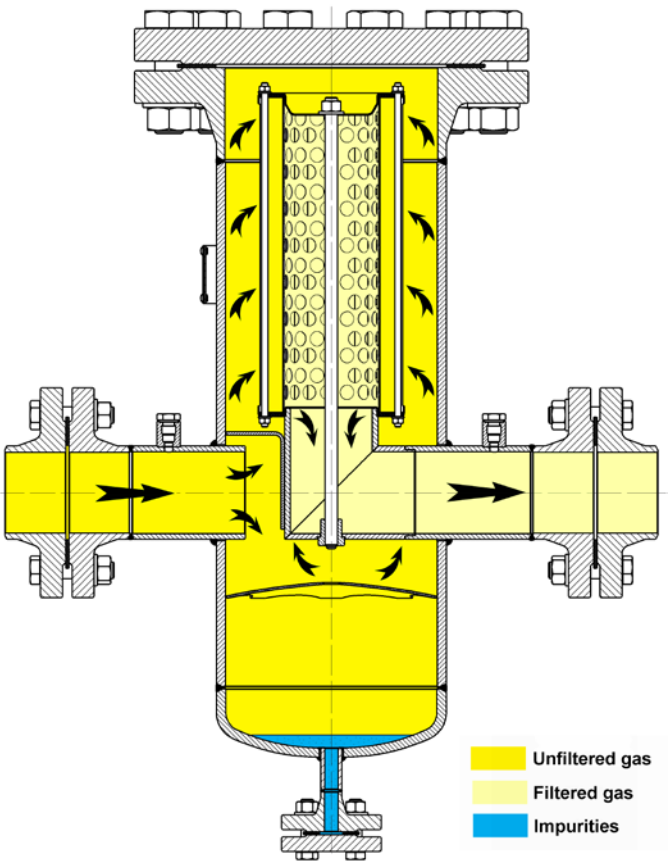


Figure 1 – FTG operation

Technical characteristics

The filters are designed for natural gases or other non-aggressive gases.

Filter main parameters:

- nominal pressure — Pn 6, 16, 25, 40, 64, 100 bar
- nominal diameter — DN 25 ÷ DN 500
- working temperature — -10 ÷ 60 °C (optionally, -20 ÷ 60)*
- ambient temperature — -20 ÷ 80 °C (optionally, -30 ÷ 80)*
- collection capacity — min 12% of the filter total capacity
- filtering cartridge — stainless steel screen (filtration rating 100÷300 µm)
  cellulose cartridge (filtration rating 5÷50 µm)
  polyester (filtration rating 5÷50 µm)
  glass fiber (filtration rating 3÷10 µm) – on request
  polypropylene (filtration rating 3÷50 µm) – on request
- efficiency — 98%
- filter cover — blind flange (FTG 601)
  quick opening closure (FTG 602)

* On request, lower temperatures can be considered.

Main features

- high flow rates, high filtration rating and high efficiency;
- maximum pressure drop is 500 mbar over the clean cartridge pressure drop; however, cartridge change is recommended between 200 and 300 mbar over the clean cartridge pressure drop;
- easy and safe maintenance;
- the filter is automatically depressurized before removing the quick opening closure;
- wide range of dimensions, special sizes and configurations available on request;
- in conformity with Pressure Equipment Directive (97/23/EC);
- on request, any other standards (ASME, DIN) can be complied with;
- on request, automatic purging can be easily installed.

Optional accessories

- Drain
  - manual: valve
  - automatic: control drainer
- Filter clogging degree
  - differential pressure gauge
  - contact differential pressure gauge
  - differential pressure gauge with 4 - 20 mA signal
- Filter pressure
  - pressure gauge
- Filter connection to the pipeline system
  - Counter flanges, gasket, fasteners

Constructive variants and dimensions

The variants for filter connections layout are shown in Figure 2. Regularly, the filters are manufactured with the inlet and outlet connections disposed at 180º in the same vertical plan (variant a). Other models (b, c, d, e, f) are executed on request.

On request, the filter can be manufactured based on other standards as well.

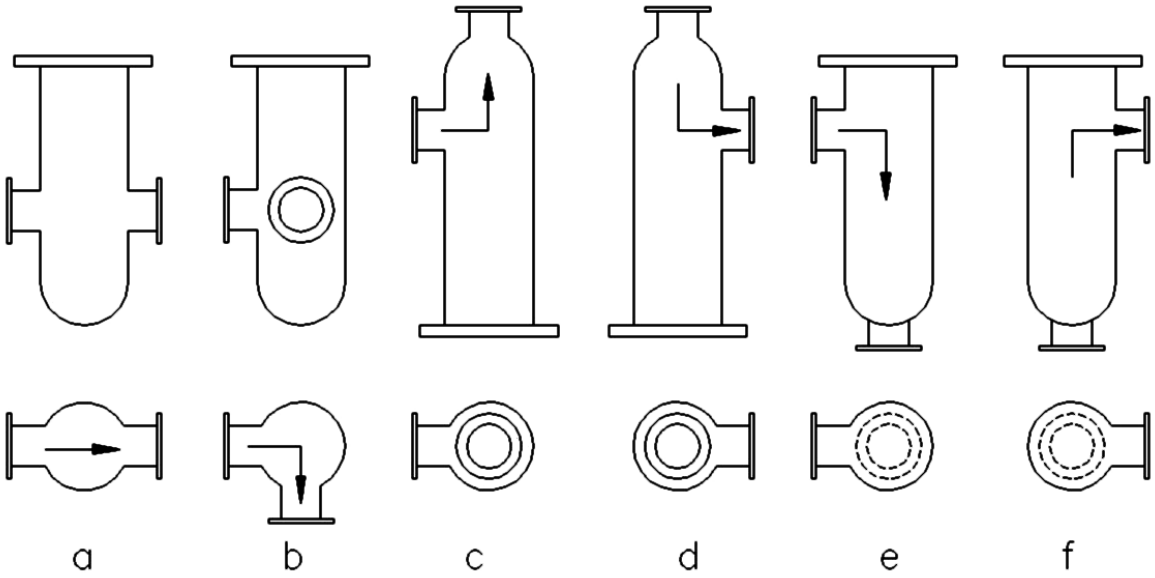


Figure 2 – Constructive variants

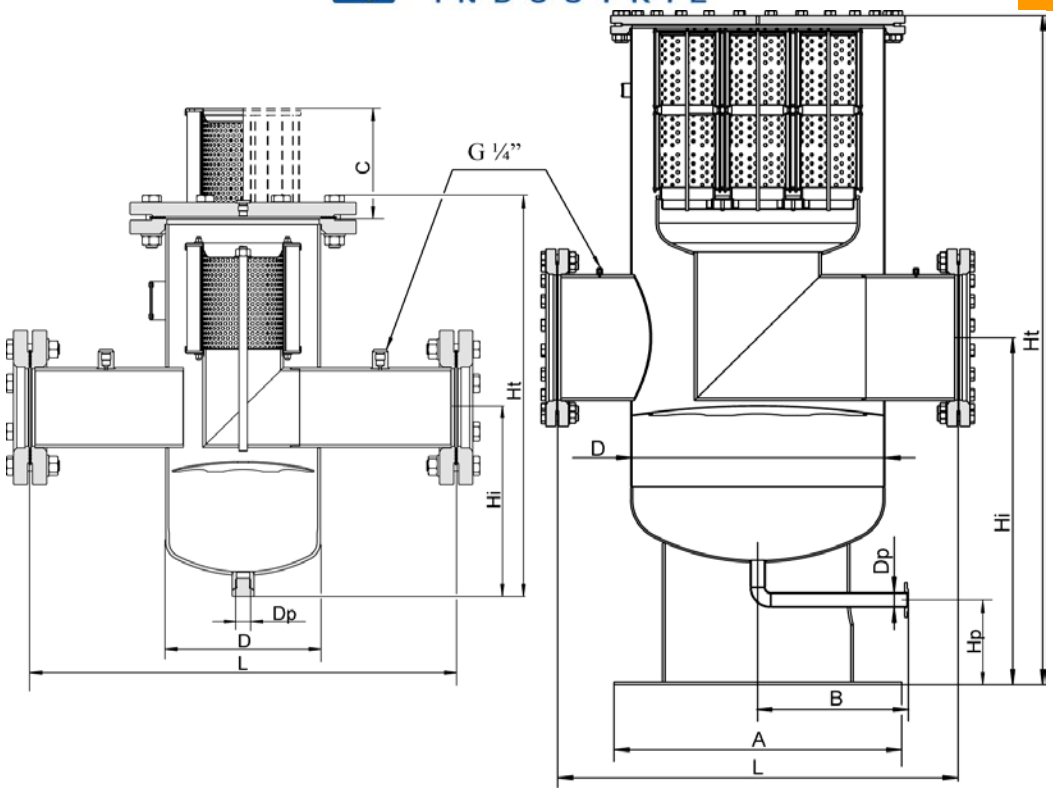


Figure 3 – Overall dimensions for PN 6, PN 16

Table 1 – FTG 600 filters – PN 6, PN 16

Nominal diameter	D	L	Ht	Hi	Hp	Dp	A	B	C	Weight	Filtering surface*
[DN]	[mm]	[mm]	[mm]	[mm]	[mm]	[DN]	[mm]	[mm]	[mm]	[kg]	[m^2]
25	141	350	426	177	-	G ½	-	-	160	24	0.1125
32	141	350	439	186	-	G ½	-	-	160	28	0.1125
40	141	400	434	177	-	G ½	-	-	160	29	0.1125
50	168	400	479	213	-	G ½	-	-	160	36	0.1125
65	168	450	500	234	-	G ½	-	-	160	41	0.15
80	219	550	563	270	-	G ½	-	-	160	54	0.15
100	219	600	563	270	-	G ½	-	-	160	60	0.15
125	324	700	863	360	-	G1	-	-	310	110	0.45
150	324	750	933	420	-	G1	-	-	310	125	0.45
200	406	750	1023	480	-	G1	-	-	310	181	0.69
250	508	900	1358	594	-	G1	-	-	510	295	1.25
300	508	900	1416	650	-	G1	-	-	510	330	1.25
400	813	1300	2470	1220	250	50	945	500	620	1011	6.30
500	1016	1600	2610	1310	250	50	1150	600	620	1533	9.66

*Note: The filters with the maximum allowable pressure 6 bar are equipped with PN16 flanges.
The filtering surface depends on the filtering material type.
Table 1 lists the values corresponding to the filtering cartridges made of expanded stainless steel plate.

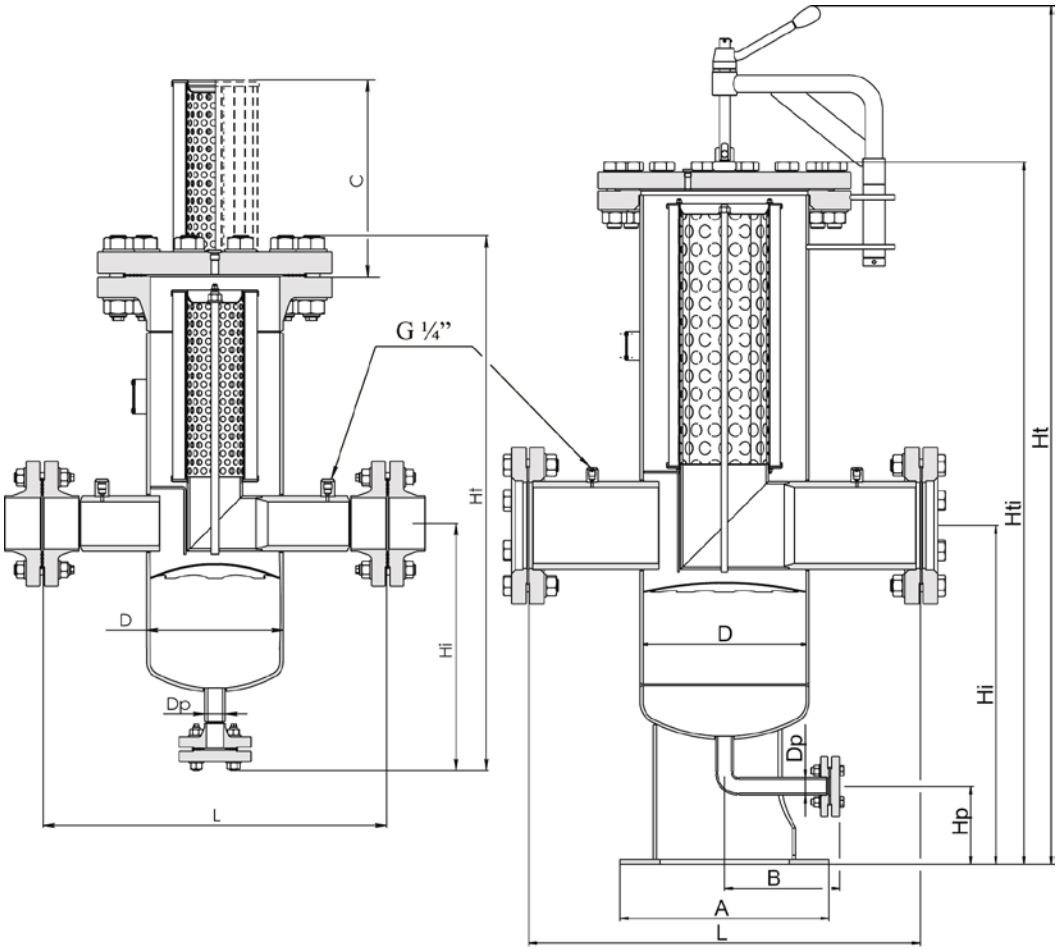


Figure 4 – Overall dimensions for PN25, PN40, PN64

Table 2 – FTG 600 filters - PN 25

Nominal Diameter	D	L	Ht	Hti	Hi	Hp	Dp	A	B	C	Weight	Filtering surface*
[DN]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[DN]	[mm]	[mm]	[mm]	[kg]	[m^2]
25	141	350	440	-	180	-	G ½	-	-	160	36	0.1125
32	141	350	449	-	185	-	G ½	-	-	160	40	0.1125
40	141	350	453	-	190	-	G ½	-	-	160	42	0.1125
50	168	400	685	-	260	-	G ½	-	-	310	58	0.225
65	168	400	702	-	270	-	G ½	-	-	310	64	0.3
80	219	550	744	-	300	-	G ½	-	-	310	76	0.3
100	219	600	775	-	320	-	G ½	-	-	310	104	0.3
125	324	700	1623	1324	630	150	25	400	220	510	230	0.75
150	324	750	1646	1347	650	150	25	400	220	510	245	0.75
200	406	750	1791	1453	715	150	25	520	250	510	395	1.15
250	508	900	2019	1627	815	150	40	640	300	510	626	1.25
300	508	900	2064	1672	850	150	40	640	300	510	663	1.25

Table 3 – FTG 600 filters - PN40

Nominal diameter	D	L	Ht	Hti	Hi	Hp	Dp	A	B	C	Weight	Filtering surface*
[DN]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[DN]	[mm]	[mm]	[mm]	[kg]	[m^2]
25	141	350	453	-	180	-	G ½	-	-	160	39	0.1125
32	141	350	457	-	185		G ½	-	-	160	42	0.1125
40	141	400	462	-	190	-	G ½	-	-	160	44	0.1125
50	168	450	693	-	260	-	G ½	-	-	310	63	0.225
65	168	450	710	-	270	-	G ½	-	-	310	69	0.3
80	219	550	851	-	360	-	25	-	-	310	115	0.3
100	219	600	884	-	380	-	25	-	-	310	129	0.3
125	324	700	1623	1343	630	150	25	400	220	510	284	0.75
150	324	750	1650	1370	650	150	25	400	220	510	303	0.75
200	406	800	1791	1476	715	150	25	520	250	510	536	1.15
250	508	1000	2019	1654	815	150	40	640	300	510	836	1.25
300	508	1050	2050	1699	850	150	40	640	300	510	915	1.25

Table 4 – FTG 600 filters - PN 64

Nominal diameter	D	L	Ht	Hti	Hi	Hp	Dp	A	B	C	Weight	Filtering surface*
[DN]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[DN]	[mm]	[mm]	[mm]	[kg]	[m^2]
25	141	450	531	-	225	-	15	-	-	160	60	0.1125
32	141	450	546	-	263	-	15	-	-	160	64	0.1125
40	141	450	547	-	266	-	15	-	-	160	68	0.1125
50	168	500	778	-	337	-	15	-	-	310	96	0.225
65	168	500	793	-	374	-	15	-	-	310	105	0.3
80	219	600	881	-	414	-	25	-	-	310	161	0.3
100	219	650	911	-	434	-	25	-	-	310	180	0.3
125	324	750	1623	1352	630	150	25	400	223	510	373	0.75
150	324	800	1650	1379	650	150	25	400	223	510	413	0.75
200	406	900	1791	1487	715	150	25	520	250	510	701	1.15
250	508	1100	2021	1675	815	150	40	640	300	510	1140	1.25
300	508	1150	2066	1720	850	150	40	640	300	510	1249	1.25

* Note: The filtering surface depends on the filtering material type.
Tables 2, 3, 4 list the values corresponding to the filtering cartridges made of expanded stainless steel plate.

The filters with DN greater than 100 mm are equipped with a support leg. On request, the filters can be equipped with a cover lifting arm.

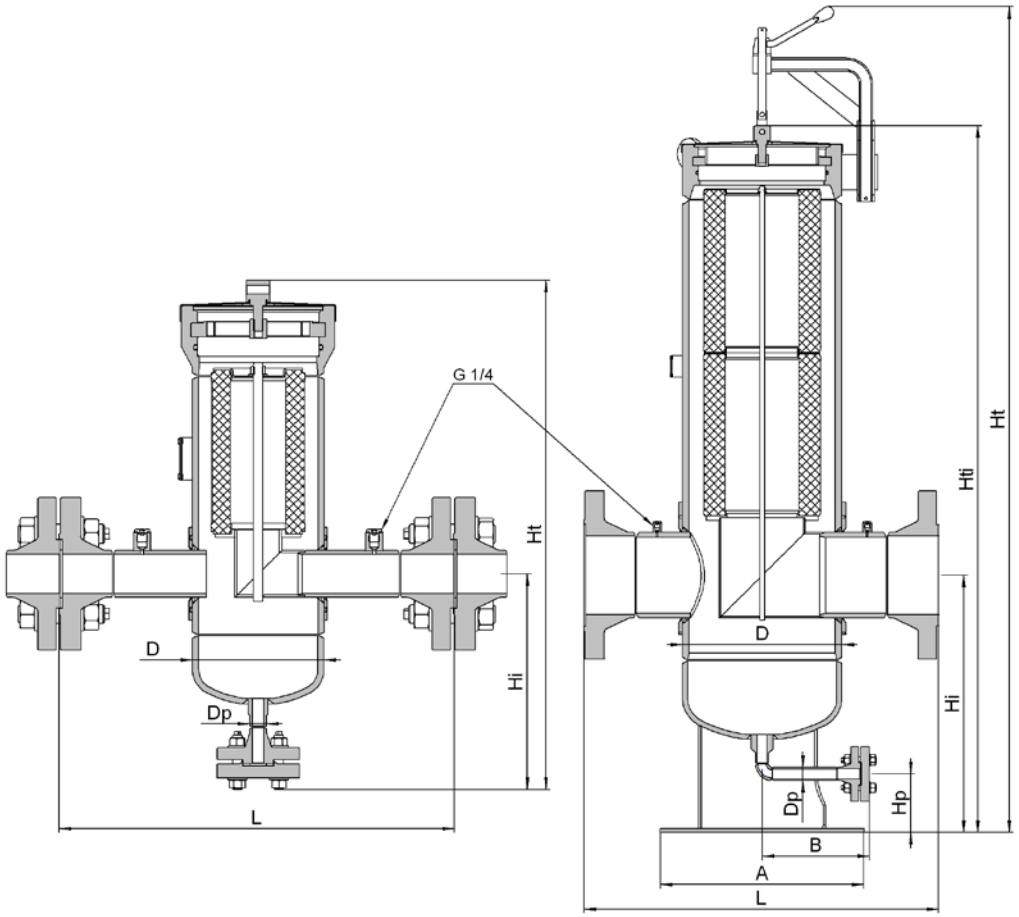


Figure 5 – Overall dimensions for FTG PN 100

Table 5 - FTG 600 filters - PN100

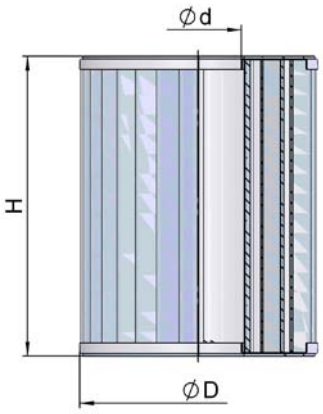
Nom Diam	Cartridge	D	L	Ht	Hti	Hi	Hp	Dp	A	B	C	Weight	Filtering surface
[DN]	-	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[DN]	[mm]	[mm]	[mm]	[kg]	[m^2]
25	1xG1	141	450	542	-	243	-	15	-	-	165	24	0,125
25	2xG1	141	450	711	-	243	-	15	-	-	165	28,4	0,25
32	1xG1	141	450	545	-	246	-	15	-	-	165	25,5	0,125
32	2xG1	141	450	714	-	246	-	15	-	-	165	29,9	0,25
40	1xG1	141	450	556	-	251	-	15	-	-	165	28	0,125
40	2xG1	141	450	725	-	251	-	15	-	-	165	32,3	0,25
50	1xG1,5	168	500	651	-	276	-	15	-	-	212	42,7	0,23
50	2xG1,5	168	500	865	-	276	-	15	-	-	212	50	0,46
65	1xG1,5	168	500	676	-	288	-	15	-	-	212	48	0,23
65	2xG1,5	168	500	890	-	288	-	15	-	-	212	55,3	0,46
80	1xG2	219	600	834	-	362	-	25	-	-	272	80	0,47
80	2xG2	219	600	1108	-	362	-	25	-	-	272	95	0,94
100	1xG2	219	650	868	-	386	-	25	-	-	272	92	0,47
100	2xG2	219	650	1142	-	386	-	25	-	-	272	108	0,94
125	2xG3	324	750	1437	1432	540	149	25	399	223	324	250	1,9
150	2xG3	324	800	1469	-	564	149	25	399	223	324	267	1,9
200	2xG4	406	900	2111	1807	658	150	25	520	273	417	482	2,9
250	2xG5	508	1100	2377	200	768	148	40	640	325	472	838	4,6
300	2xG5	508	1150	2422	2117	791	149	40	640	325	472	924	8,4

Filter cartridges type G

Material: polyester felt with aluminum support mesh

Filtration rating: 5 – 25 – 50 µm

Dimensions:



TYPE	G 1	G 1,5	G 2	G 2,5	G 3	G 4	G 5	G 6
H [mm]	157	202	252	275	312	407	462	617
ØD [mm]	95	120	165	200	252	299	390	475
Ød [mm]	50	69	86	110	138	186	246	320
Filtering area [m^2]	0.125	0.23	0.47	0.725	0.95	1.45	2.30	4.20

Ordering code

The filters can be identified by specifying the type, the nominal dimension of the inlet-outlet connections and the maximum working pressure.

FTG		6	0	X		X		X	Descriere
				1					blind flange
				2					quick opening closure
						025			DN25
						032			DN32
						040			DN40
						050			DN50
						065			DN65
						080			DN80
						100			DN100
						125			DN125
						150			DN150
						200			DN200
						250			DN250
						300			DN300
						400			DN400
						500			DN500
								06	PN6
								16	PN16
								25	PN25
								40	PN40
								64	PN64
								100	PN100
								ANSI 150	ANSI class 150
								ANSI 300	ANSI class 300
								ANSI 400	ANSI class 400
								ANSI 600	ANSI class 600

For instance, FTG 601-50-25 ordering code designates an FTG601 filter with DN50 flanged connections and maximum working pressure 25 bar.

When ordering, please specify the filtration rating. Additional requirements, if any, must be specified when placing the order.

The manufacturer reserves the right to make modifications without any prior notification.

CT No. 185 / 2009 /01

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