

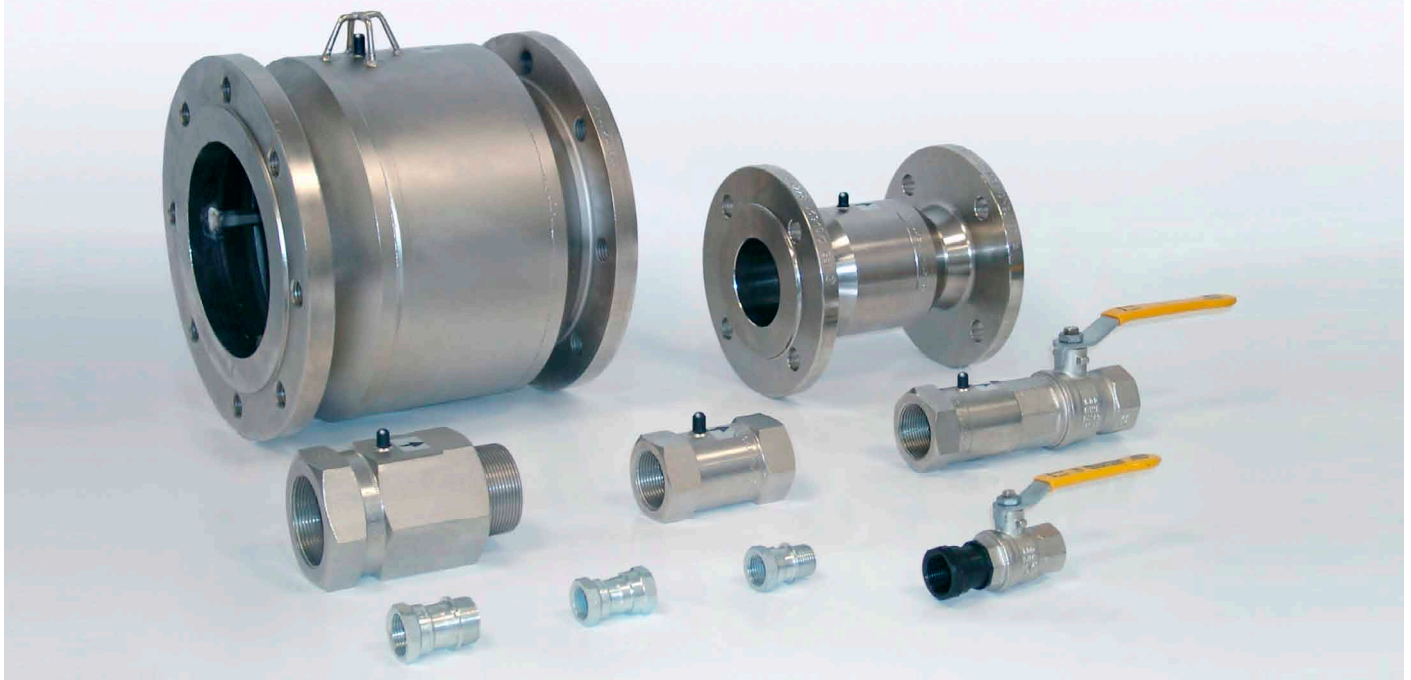
SENTRY GT/SENTRY GT..KD40

Thermally Activated Shut-Off Devices and Ball Valves



CE 0085

Complies with the German FeuVo, General Gas Guidance 97/23/EG and 97/23/EC



DESCRIPTION

SENTRY GT thermally activated shut-off devices automatically shut off the gas flow at temperatures between 92 °C and 100 °C. They remain closed up to 925 °C.

These shut-off devices help prevent gas from flowing to downstream components that may not be resistant to high temperatures. The SENTRY GT..KD40 ball valve may also be used as a main gas manual shut-off valve.

USAGE

German fire code draft recommendation 02/95, Edition 09/97, the legal basis for Germany's regional buildings and fire codes, mandates the use of a thermally activated shut-off device:

Gas pipes supplying gas appliances must be equipped with a device:

1. That automatically shuts off the gas flow when subjected to temperatures above 100 °C.
2. That allows no more than 30l/h measured in air to pass through or escape from the device for a period of at least 30 minutes at temperatures up to 650 °C.

This requirement does not apply to gas appliances already equipped with a thermally activated shut-off device.

The diagram (see figure 1) shows that during a fire the temperature reaches 700 °C within 15 minutes.

FUNCTION

Regardless of construction variations, the following operating principles apply to the various types of SENTRY GT's (see figure 2):

SENTRY GT

The release mechanism (temperature sensor) retains the closing unit, which is mounted under spring pressure. At the release temperature, the release mechanism unblocks the closing unit, and the closing unit moves into the valve seat resulting in a gas-tight seal. The SENTRY GT closes at 100 °C–8K and will remain closed up to 925 °C. The SENTRY GT remains closed after it cools.

BALL VALVE

To close the ball valve, the lever must be turned clockwise \curvearrowright 90°. To open, turn the lever counterclockwise \curvearrowleft 90°. The ball valve is open when the lever is in the flow direction of the pipe (see figure 3). The ball valve should be opened slowly to avoid pressure surge.

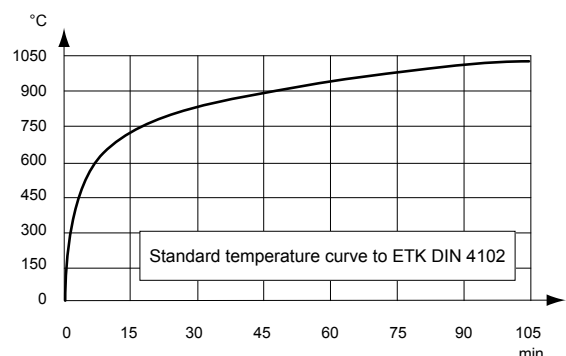


Figure 1: Temperature rise in a test room fire simulation

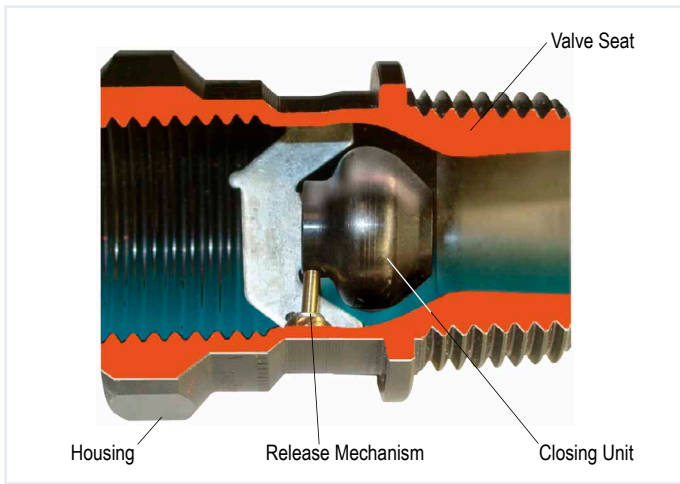


Figure 2: Cross-section of a SENTRY GT (GT15DIA) thermally activated shut-off device

Figure 3: Example of a SENTRY GT..KD40 installed

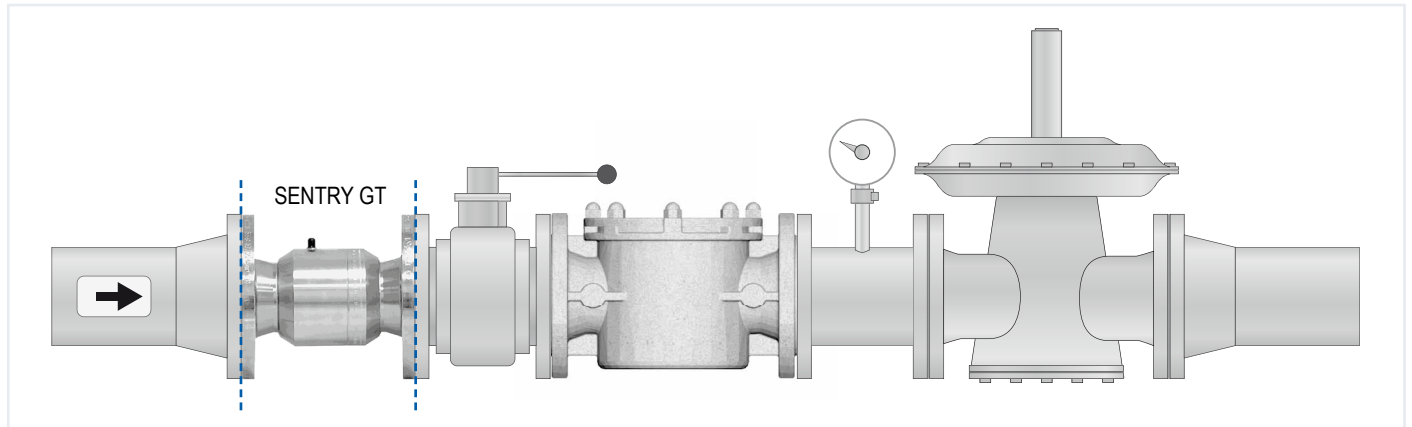


Figure 4: Example of a SENTRY GT installed upstream of a burner

TECHNICAL DATA

Technical Data	SENTRY GT	SENTRY GT..KD40
Threaded Connection	DIN EN 10226-1/ISO 7-1	DIN EN 10226-1/ISO 7-1
Flanged Connection	DIN EN 1092-1 (PN16)/ISO7005-2	-
Gas Types	DIN EN 437; DVGW G 262, DVGW VP 303 (Bio- & Fermentation gas)	DIN EN 437
Release Temperature	100 °C–8 K	100 °C–8 K
Nominal Pressure	MOP 5 (PN 5, DIN 3586)	MOP 5 (PN 5, DIN 3586)
Allowable Leakage	<30 l/h air at 650 °C	<30 l/h air at 650 °C
Max. Ambient Temperature	80 °C	60 °C
Thermal Rating	30 min 650 °C per DIN 3586; max. 925 °C (according to ETK max. 1 hour)	30 min 650 °C per DIN 3586; max. 925 °C
Material	Steel	Brass, Steel

CERTIFICATIONS

Certifications	SENTRY GT	SENTRY GT..KD40
Pressure Equipment Directive	97/23/EG; 97/23/EC	97/23/EG; 97/23/EC
DVGW	DN 10-150: DIN 3586 DN 32-150: DIN 3586, DVGW VP 303 DVFG TRF 2012 DVGW TRGI 2008	DIN EN 331; DIN 3586

SENTRY GT

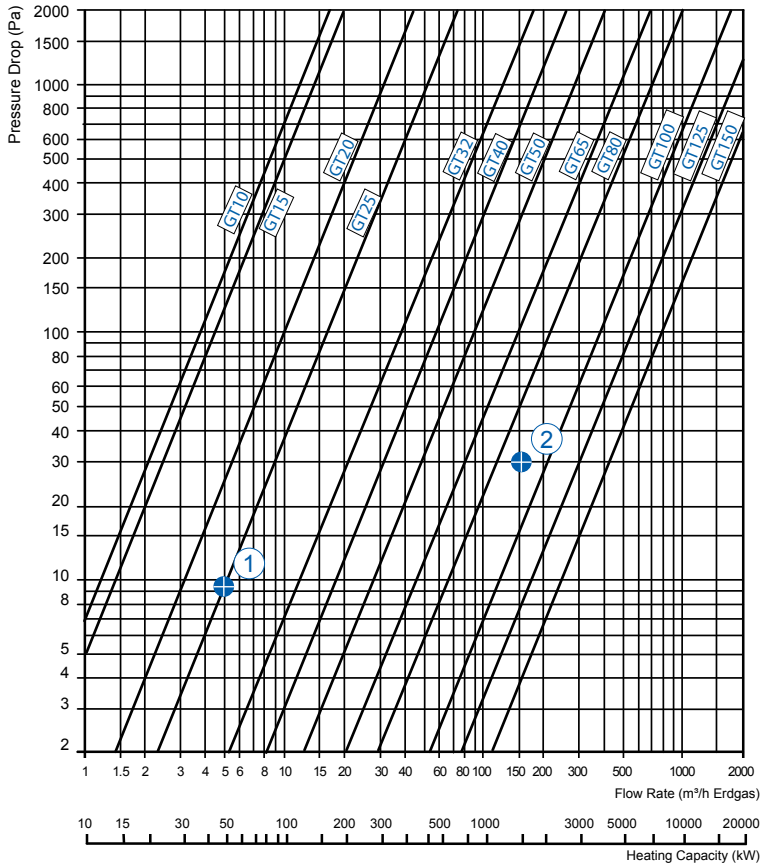


Figure 5: Flow rate chart SENTRY GT

SENTRY GT..KD40

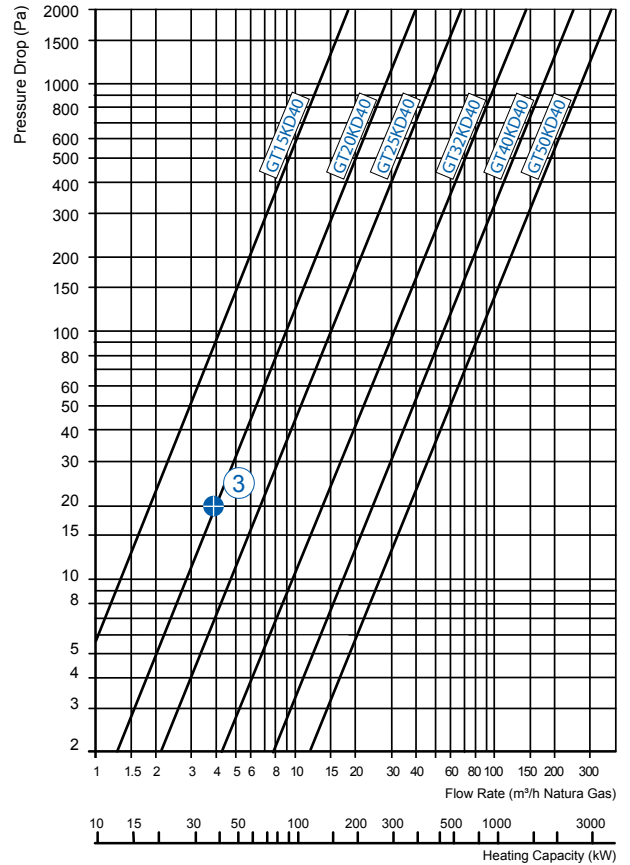


Figure 6: Flow rate chart SENTRY GT..KD40

FLOW RESISTANCE FACTOR

Flow resistance factor ζ (zeta) for SENTRY GT

DN 10	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
1.5	4.5	3.0	3.0			1.5					1.8

EXAMPLES (Figure 5 and 6)

- ① For a 50kW boiler with a flow rate of ca. 5 m³/h natural gas, the pressure drop for a GT25 would be 9.5 Pa.
- ② The pressure drop of a GT for a 1500 kW boiler may not exceed 30 Pa. Choose the next characteristic line below plot point ② (GT100).
- ③ The pressure drop of a GT20KD40 with a flow rate of 4 m³/h natural gas would be 20 Pa.

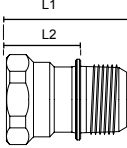
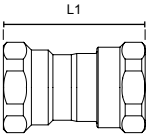
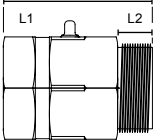
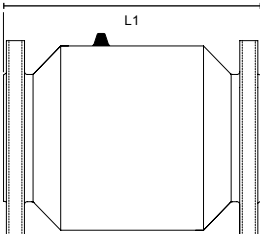
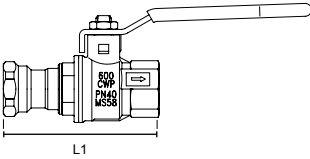
ASSEMBLY KIT FOR SENTRY GT

According to applicable industry standards, an assembly kit is required for the installation of thermally released shut-off valves in flange versions. This kit consists of high temperature resistant flange gaskets, hexagonal screws and hexagonal nuts.

Nominal Diameter	Order Reference*
DN 32	GT32M2
DN 40	GT40M2
DN 50	GT50M2
DN 65	GT65M2
DN 80	GT80M2
DN 100	GT100M2
DN 125	GT125M2
DN 150	GT150M2

*Assembly kit for flanged version

MODELS / DIMENSIONS

Illustration	Type (Order Code)	Connection		Surface	Dimensions mm			Weight kg	Cert. No.
		Inlet	Outlet		L1	L2	SW Wrench Size		
	GT10DIA GT15DIA GT20DIA	Internal Thread Rp 3/8 Rp 1/2 Rp 3/4	External Thread R 3/8 R 1/2 R 3/4	blue galvanized	40.0 40.0 50.3	28.4 24.7 34.0	22 27 32	0.05 0.07 0.10	DG-4340AQ1236 CE-0085BN0394
	GT25DIA	Rp 1	R 1	black galvanized	53.8	34.6	41	0.21	
	GT15DII GT20DII	Internal Thread Rp 1/2 Rp 3/4	Internal Thread Rp 1/2 Rp 3/4	blue galvanized	45.5 54.5	- -	27 32	0.10 0.15	DG-4340AQ1260 CE-0085BN0395
	GT25DII	Rp 1	Rp 1	black galvanized	61.5	-	41	0.30	
	GT32IA GT40IA GT50IA	Internal Thread Rp 1 1/4 Rp 1 1/2 Rp 2	External Thread R 1 1/4 R 1 1/2 R 2	nickel plated	100.0 112.0 135.0	21.4 21.4 25.7	55 65 80	0.95 1.42 2.60	DG-4340AQ1260 CE-0085BN0395
	GT32II GT40II GT50II	Rp 1 1/4 Rp 1 1/2 Rp 2	Internal Thread Rp 1 1/4 Rp 1 1/2 Rp 2		100.0 112.0 135.0	- - -	55 65 80	0.95 1.42 2.60	
	GT32FF GT40FF GT50FF GT65FF GT80FF GT100FF* GT125FF* GT150FF*	Flange Connection DN 32 DN 40 DN 50 DN 65 DN 80 DN 100 DN 125 DN 150	Flange Connection DN 32 DN 40 DN 50 DN 65 DN 80 DN 100 DN 125 DN 150	nickel plated	138.0 155.0 175.0 197.0 229.0 267.0 224.0 268.0	- - - - - - - -	- - - - - - - -	2.5 3.7 6.1 7.8 11.0 15.3 26.0 32.0	DG-4340AQ1260 CE-0085BN0395
	GT15KD40 GT20KD40 GT25KD40	Internal Thread Rp 1/2 Rp 3/4 Rp 1	Internal Thread Rp 1/2 Rp 3/4 Rp 1	black galvanized	75.5 90.0 121.0	- - -	27 32 41	0.25 0.40 0.75	CE-0085B0251
	GT32KD40 GT40KD40 GT50KD40	Rp 1 1/4 Rp 1 1/2 Rp 2	Rp 1 1/4 Rp 1 1/2 Rp 2	185.0 207.0 246.0	- - -	55 65 80	1.90 2.30 3.85		

OPTIONS

Custom inlet and outlet connections are available.

A biogas resistant version is available for DN 32 up to DN 150 diameters. To order, add a "9" to the end of the order code (e.g. GT32FF9).