

SAFETY AND MAINTENANCE PANELS FOR INDUSTRIAL GAS SUPPLY SYSTEMS - STLMAX



DRUVATEC LOW- FLOW RANGE- MAXIMAL- VERSION

for industrial, inert, flammable, oxidizing gases and gas mixtures.
Not usable for corrosive or toxic gases and gas mixtures.

SPECIAL FEATURES:

On a Safety and Maintenance Panel, both safety-related components and maintenance-related systems of a central, industrial gas supply are combined.

SAFETY RELATED COMPONENTS:

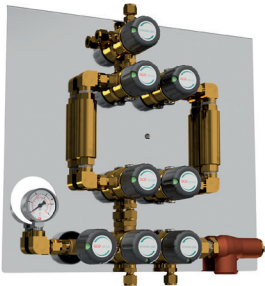
- > **safety device with multiple functions** for flammable, oxidizing gases designed in single or redundant version, exchangeable without disassembly of the panel
- > **safety relief valve** designed and adjusted based on worst case scenario measurements of DruvaTEC Low Flow manifold regulators
- > **pressure indication port** for monitoring of pipeline pressure, separate lockable, gauges are exchangeable without disassembly of the panel

MAINTENANCE-RELATED SYSTEMS:

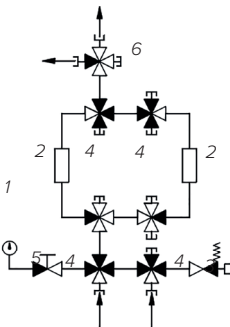
- > inlet port for connecting external source
 - as a second supply source to avoid system downtime during maintenance at manifolds
 - as a test gas inlet port for pressure test of piping system after installation or during maintenance
- existing additional valve for releasing of pressure in piping system

PANEL CONSISTS OF TWO PLATES

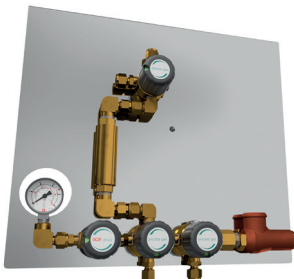
- Easy installation of ground plate without weight of complete safety and maintenance panel
- Simple hang front plate including safety and maintenance panel
- Fixing front plate by only one bolt



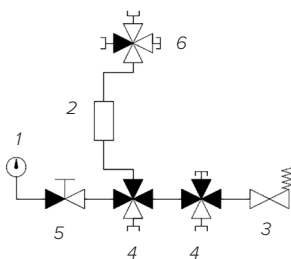
Maximal version
- redundant safety devices



- 1- Pressure measure element (gauge, contact gauge, pressure transmitter)
- 2- Safety device with multiple functions for flammable gases or Oxygene
- 3- Safety relief valve
- 4- Shut off valve type VTMF000
- 5- Shut off valve type VTLA000
- 6- Shut off valve type VTMI000



Maximal version
- single safety device



- 1- Pressure measure element (gauge, contact gauge, pressure transmitter)
- 2- Safety device with multiple functions for flammable gases or Oxygene
- 3- Safety relief valve
- 4- Shut off valve type VTMF000
- 5- Shut off valve type VTLA000
- 6- Shut off valve type VTMI000

TECHNICAL DATA	
Nominal working pressure:	10 bar
Maximal allowable working pressure:	11,5 bar
Nominal flow rate:	20 m ³ /h
Test after production	100% functionality
	100% seat leakage test
	100% pressure test

TECHNICAL DATA - VALVES VTLA		
Working temperature:	-20°C to + 60°C	
Inlet/Outlet ports:	NPT 1/4" female	
Max. working pressure:	300 bar	
Kv-value:	0,25	
Seat diameter:	5 mm	
Leakage rate seat:	less than 6 cm ³ /h (20°C; 1,013 bar absolut)	Compressed Air
Leakage rate outside:	less than 6 cm ³ /h (20°C; 1,013 bar absolut)	Compressed Air
Filter inlet:	100 µm mesh	
Filter outlet ports:	100 µm mesh	
Mounting holes:	M6	
Weight:	0,30 kg	
Valve body:	BRASS (2.0401.26)	
Valve diaphragm:	2 x Elgiloy (2.4711)	
Valve seat:	PCTFE	
Valve popet:	BRASS (2.0401.26)	
Tests in production:	Pressure test with dry air (ISO 8573 [1:2:2]) of each item	
	Seat leakage test with dry air (ISO 8573 [1:2:2]) of each item	
	Test of functionality of each item	
	Type test accordance with relevant sections of EN ISO 10297	
	O2 ignition test regarding EN ISO 10297 for main shut off valve	
	Electrostatic chargeability test	
Approvals during development:	- fulfill requirements according DIN EN ISO 80079-36; IEC TS 60079-32-1 and German TRGS 727	
	- usable in EX- areas zones 1 and 2 for gases with explosion risk group I; IIA; IIB; IIC	

TECHNICAL DATA - VALVES VTMF, VTMI	
Working temperature:	-20°C to + 60°C
Inlet/Outlet ports:	NPT 3/8" female
Max. working pressure:	40 bar
Kv-value:	0,35
Seat diameter:	7 mm
Leakage rate seat:	less than 6 cm ³ /h (20°C; 1,013 bar absolut) Compressed Air
Leakage rate outside:	less than 6 cm ³ /h (20°C; 1,013 bar absolut) Compressed Air
Filter inlet:	100 µm mesh
Filter outlet ports:	100 µm mesh
Mounting holes:	M6
Weight:	0,62 kg
Valve body:	BRASS (2.0401.26)
Valve diaphragm:	1 x Hastelloy (2.4819), 1 x Elgiloy (2.4711)
Valve seat:	PCTFE
Valve popet:	BRASS (2.0401.26)
Tests in production:	Pressure test with dry air (ISO 8573 [1:2:2]) of each item
	Seat leakage test with dry air (ISO 8573 [1:2:2]) of each item
	Test of functionality of each item
	Type test accordance with relevant sections of EN ISO 10297
Approvals during development:	O2 ignition test regarding EN ISO 10297 for main shut off valve
	Electrostatic chargeability test
	- fulfill requirements according DIN EN ISO 80079-36; IEC TS 60079-32-1 and German TRGS 727
	- usable in EX- areas zones 1 and 2 for gases with explosion risk group I; IIA; IIB; IIC

TECHNICAL DATA - SAFETY RELIEF VALVE	
P.E.D. 2014/68/EU and AD2000 (A2) approved	
Cracking pressure:	13 bar
Seat diameter:	9,5 mm
Inlet thread:	NPT 1/2" male
Outlet thread:	NPT 3/4" female
Working temperature rate:	-20°C up to 60°C
Material gas wetted parts:	
Valve body:	Brass (C83600)
Seat:	CW614N
Seal:	Viton
Inner plunger:	CW614N

TECHNICAL DATA - SAFETY DEVICE WITH MULTIPLE FUNCTIONS**FLAMMABLE GASES**

according Standards EN 730-1 and ISO 5175:

Included safety elements inside are flame arrestor, temperature sensitive cut- off valve and dust filter

Maximum working pressure:	10 bar
Cracking pressure:	10 mbar
Working temperature range:	-20 °C up to 70 °C
Maximum flow rate:	more than 20 m ³ /h
Material body:	brass (2.0401)
Material Internal spring:	stainless steel 1.4301

OXYGENE

according Standards EN 730-1 and ISO 5175:

Included safety elements inside are flame arrestor, temperature sensitive cut- off valve and dust filter

Maximum working pressure:	10 bar
Cracking pressure:	10 mbar
Working temperature range:	-20 °C up to 70 °C
Maximum flow rate:	more than 20 m ³ /h
Material body:	brass (2.0401)
Material Internal spring:	stainless steel 1.4310

TECHNICAL DATA - PRESSURE INDICATION PORT - GAUGE**OPTION GAUGE**

based on requirement of EN 837 (safety gauge without baffle wall)

Suitable for max. steady working pressure 75% of max. scale value

Nominal size:	50 mm
Inlet connection:	NPT ¼" male
Cleaned for:	
Scale range (bar):	16 bar (10 bar); 40 bar (20 bar); 65 bar (40 bar)
Accuracy class:	2,5
Temperature range:	-20°C up to 60 °C

Material

Pressure element:	brass
Pressure inlet connection:	brass nickel plated
Dial:	Aluminum
Pointer:	Aluminum
Case:	stainless steel polished
Window:	plastic crystal clear

TECHNICAL DATA - PRESSURE INDICATION PORT - OPTION REED CONTACT GAUGE

based on requirement of EN 837 (safety gauge with baffle wall and blow out back- S3)

Suitable for max. steady working pressure 75% of max. scale value

Nominal size:	50 mm
Inlet connection:	NPT ¼" male
Cleaned for:	Oxygene
Scale range (bar; psi):	16 bar (10 bar); 40 bar (20 bar); 65 bar (40 bar)
Accuracy class:	2,5
Temperature range:	-20°C up to 60 °C
Material	
Pressure element:	stainless steel
Pressure inlet connection:	stainless steel
Dial:	Aluminum
Pointer:	Aluminum
Case:	stainless steel blank
Window:	plastic crystal clear
Electrical data contacts:	operating voltage U max. = 24 V DC/AC
	Current input: I _{max.} = 0,4 A
	Breaking capacity: P max. = 8W/8 VA
Contact type:	RK 1.1, normally open, contact opens by decreasing value
	RK 1.2, normally open, contact closes by decreasing value

TECHNICAL DATA - PRESSURE INDICATION PORT - OPTION INDUCTIVE CONTACT GAUGE

based on requirement of EN 837 (safety gauge with baffle wall and blow out back- S3)

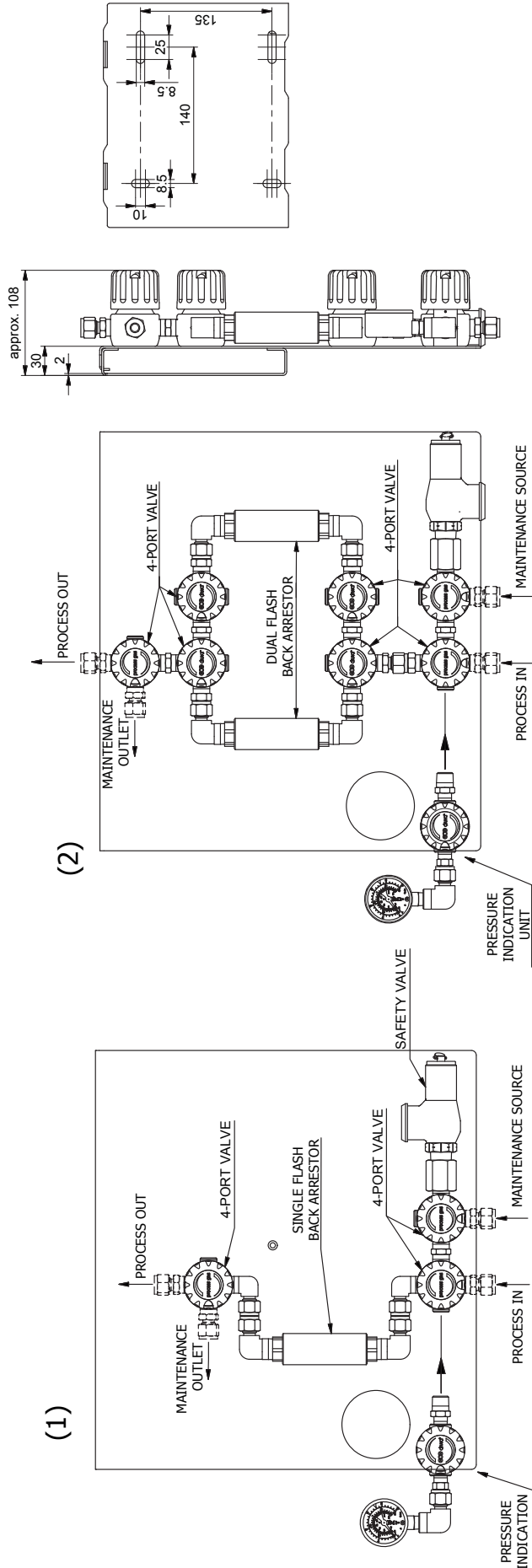
Suitable for max. steady working pressure 75% of max. scale value

Nominal size:	50 mm
Inlet connection:	NPT ¼" male
Cleaned for:	Oxygene
Scale range (bar; psi):	16 bar (10 bar); 40 bar (20 bar); 65 bar (40 bar)
Accuracy class:	2,5
Temperature range:	-20°C up to 60 °C
Material	
Pressure element:	stainless steel
Pressure inlet connection:	stainless steel
Dial:	Aluminum
Pointer:	Aluminum
Case:	stainless steel blank
Window:	plastic crystal clear
Electrical data contacts:	operating voltage U nominal = 8,2 V DC
	Current input contact closed: > = 3 mA
	Current input contact open: <= 1 mA
Contact type:	IK 1.1, inductive contact, contact opens by decreasing value
	IK 1.2, inductive contact, contact closed by decreasing value

TECHNICAL DATA - PRESSURE INDICATION PORT - OPTION PRESSURE TRANSMITTER	
FOR INERT, NON-CORROSIVE GASES AND GAS MIXTURES, OXYGEN (Not for flammable gases, not useable in EX-Areas)	
Long Term Drift:	0,2% Full Scale/YR (non-cumulative)
Accuracy:	0,25% Full Scale
Thermal Error	0,83% Full Scale/100°F (1,5% Full Scale/100°C)
Compensated Temperatures	-40°C to +125°C
Operating Temperatures	-40°C to +125°C
Zero Tolerance	0,5% of span
Span Tolerance	0,5% of span
Fatigue Life	Designed for more than 100 M cycles
Mechanical Configuration:	stainless steel
Pressure Port	¼" NPT Male
Electrical Connection	M12x1 – 4 pin
Parts in Contact with Gas	Stainless Steel
Enclosure	IP67 (IP65 for electrical code G)
Supply Voltage:	2 Volts above full scale to 30 V DC max @ 4.5mA (6.5mA at output version)
Vibration:	40G peak to peak sinusoidal (Random Vibration: 20 to 100 Hz @ aprox.. 40G) Peak per MIL-STD-810E
Shock:	Withstands free fall to IEC 68-2-32 procedure 1
Approvals:	CE, conform to European Pressure Directive, Fully RoHS compliant UL recognized files # E219842 & E174228
Weight:	35 grams
Output signal:	4...20mA
FOR FLAMMABLE GASES, USEABLE IN EX-AREAS	
Material gas wetted parts:	Stainless steel, fully welded.
Accuracy:	</= +/- 0,50% of span
Output signal:	4...20mA
Operating temperature medium:	-15°C to +70°C
Operating temperature ambient:	-15°C to +70°C
Manufacture's information	SIL 2, Functional safety, MTTF:>100 years and certificates China RoHS directive
Long term stability	</= +/- 0,2% of span/year
Mechanical Configuration	
Pressure Port:	¼" NPT Male
Electrical Connection	M12x1 – 4 pin
Parts in Contact with Gas:	Stainless Steel
Enclosure:	IP65 (IP 68 also available)
Power Supply:	24 VDC
Vibration resistance:	20 g
Shock resistance:	1,000 g
Approvals:	ATEX, IECEx, FM, CSA, SIL rating per IEC61508/ IEC 61511

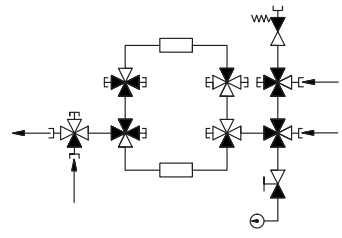


Link to product configurator



STL MAX X XXX D2 XX XXXX SV XXXX MS XXXX

- EXPANSION LEVEL
I MAX - ExaFBA+PI+SV+
SeSo+PTUSOV
- GAS TYPE
I O - O2 OXYGEN
H - FLAMMABLE (no C2H2)
- FLASH BACK ARRESTOR
SFA - SINGLE FLASH BACK ARRESTOR (1)
DFA - DUAL FLASH BACK ARRESTOR (2)
- NOMINAL PRESSURE
D2 - 10 BAR
- PRESSURE INDICATION
01 - WITHOUT (PLUGGED)
BT - BOURDON TUBE GAUGE
I1 - INDUCTIVE GAUGE I1
I2 - INDUCTIVE GAUGE I2
R2 - REED CONTACT GAUGE R2
R5 - REED CONTACT GAUGE I5
PT - PRESSURE TRANSMITTER
- EXAMPLE: STLMAXSFAD2BTN38FSV0001MSN38F
- MAINTENANCE CONNECTION (INLET/OUTLET)
* SEE THE LIST OF CONNECTIONS
- MAINTENANCE SOURCE
MS - MAINTENANCE SOURCE
- SV - RELIEF CONNECTION
* 0001 WITHOUT (PLUGGED)
* 3/4" NPT
- SAFETY DECTIVE
* SV - SAFETY RELIEF VALVE
- PROCESS CONNECTION (INLET/OUTLET)
* SEE THE LIST OF CONNECTIONS
- * LIST OF CONNECTIONS
N14F - NPT 1/4 INCH FEMALE
N38F - NPT 3/8 INCH FEMALE
M08B - COMPRESSION METRICE 6MM BRASS
M10B - COMPRESSION METRICE 8MM BRASS
M12B - COMPRESSION METRICE 10MM BRASS



TECHNICAL SPECIFICATION	
Inlet pressure: max. 10 BAR	
Flow nominal: 20m ³	
BOM	
Name	
4-Port Valve	VTLI000 3xIN 1xOUT
4-Port Valve	VTLF000 1xIN 3xOUT
2-Port Valve	VTLA000
Safety-Valve	Seetru 63610C1293
Flashback Valve	IBEDA DG91NH without GRV
Plate	430x390 Stainless Steel