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Soleonid Valves

VE400AA SOLENOID GASVALVES



Class 'A' Safety valve, normally closed, fast opening, with AC coils, threaded connection

| Type | Pmax, mbar | Connection size | Supply voltage |
|--------------|------------|-----------------|----------------|
| VE408 AA1007 | 500 | ¼" | 230 Vac |
| VE410 AA1003 | 200 | ⅜" | 230 Vac |
| VE415 AA1008 | 200 | ½" | 230 Vac |
| VE420 AA1001 | 200 | ¾" | 230 Vac |

VE4000A SOLENOID GASVALVES



Class 'A' Safety valve, normally closed, fast opening, threaded connection

| Type | Pmax, mbar | Connection size | Supply voltage |
|--------------|------------|-----------------|----------------|
| VE4010 A1006 | 360 | ⅜" | 230 Vac |
| VE4015 A1005 | 360 | ½" | 230 Vac |
| VE4020 A1005 | 200 | ¾" | 230 Vac |
| VE4025 A1004 | 200 | 1" | 230 Vac |
| VE4032 A1000 | 200 | 1-¼" | 230 Vac |
| VE4040 A1003 | 200 | 1-½" | 230 Vac |
| VE4050 A1002 | 200 | 2" | 230 Vac |
| VE4065 A1000 | 200 | 2-½" | 230 Vac |

VE4000B1 SOLENOID GASVALVES WITH FLOW REGULATION



Class 'A' Safety valve, normally closed, fast opening, threaded connection

| Type | Pmax, mbar | Connection size | Supply voltage |
|--------------|------------|-----------------|----------------|
| VE4010 B1005 | 360 | ⅜" | 230 Vac |
| VE4015 B1004 | 360 | ½" | 230 Vac |
| VE4020 B1004 | 200 | ¾" | 230 Vac |
| VE4025 B1003 | 200 | 1" | 230 Vac |
| VE4032 B1009 | 200 | 1-¼" | 230 Vac |
| VE4040 B1002 | 200 | 1-½" | 230 Vac |
| VE4050 B1001 | 200 | 2" | 230 Vac |
| VE4065 B1017 | 200 | 2-½" | 230 Vac |
| VE4080 B1016 | 200 | 3" | 230 Vac |

Soleonid Valves

VE4000B3 SOLENOID GASVALVES WITH FLOW REGULATION



Class 'A' Safety valve, normally closed, fast opening, flanged connection

| Type | Pmax, mbar | Connection size | Supply voltage |
|--------------|------------|-----------------|----------------|
| VE4065 B3005 | 200 | DN65 | 230 Vac |
| VE4080 B3004 | 200 | DN80 | 230 Vac |
| VE4100 B3000 | 200 | DN100 | 230 Vac |

VE4000C SLOW OPENING SOLENOID GASVALVES WITH FLOW REGULATION



Class 'A' Safety valve, normally closed, slow opening, threaded connection

| Type | Pmax, mbar | Connection size | Supply voltage |
|--------------|------------|-----------------|----------------|
| VE4010 C1004 | 200 | 3/8" | 230 Vac |
| VE4015 C1003 | 200 | 1/2" | 230 Vac |
| VE4020 C1003 | 200 | 3/4" | 230 Vac |
| VE4025 C1002 | 200 | 1" | 230 Vac |
| VE4032 C1008 | 200 | 1-1/4" | 230 Vac |
| VE4040 C1001 | 200 | 1-1/2" | 230 Vac |
| VE4050 C1000 | 200 | 2" | 230 Vac |

VE4000S SAFETY RELIEF SOLENOID VALVES



Vent valve, normally open, fast opening, threaded connection

| Type | Pmax, mbar | Connection size | Supply voltage |
|----------------|------------|-----------------|----------------|
| VE4020 S1038 | 200 | 3/4" | 230 Vac |
| VE4025 S1037 | 200 | 1" | 230 Vac |
| VE4020 S2044 * | 200 | 3/4" | 230 Vac |
| VE4025 S2035 * | 200 | 1" | 230 Vac |

* with Closed Position Indication Switch

Electro-hydraulic valves

VE5000A GASVALVES WITH FLUID POWER ACTUATOR

For ON/OFF operation, flanged connection

| Type | Connection size | Actuator type V4055A | Actuator type V4055B |
|--------------|-----------------|-------------------------|-------------------------|
| VE5065 B3005 | DN65 | 360 mbar | - |
| VE5080 B3004 | DN80 | 360 mbar | - |
| VE5100 B3000 | DN100 | - | 360 mbar |

VE5000C SLOW OPENING GASVALVES WITH FLUID POWER ACTUATOR



For high/low or modulation operation, flanged connection

| Type | Connection size | Actuator type V4062A | Actuator type V9055A |
|--------------|-----------------|-------------------------|-------------------------|
| VE5065 C3003 | DN65 | 360 mbar | 360 mbar |
| VE5080 C3002 | DN80 | 360 mbar | 360 mbar |
| VE5100 C3008 | DN100 | 200 mbar | 200 mbar |

FLUID POWER VALVE ACTUATORS FOR VE5000 VALVES



| Type | operation | closing time | Opening time | Pmax, mbar | Supply voltage |
|-------------|------------|-----------------|-----------------|---------------|-------------------|
| V4055 A1130 | ON/OFF | < 1sec. | 16 sec. | 360 | 230 Vac |
| V4062 A1030 | high/low | < 1sec. | 16 sec. | 360 | 230 Vac |
| V9055 A1005 | modulation | < 1sec. | 32 sec. | 360 | 230Vac |

BT-BC668 SLOW OPENING SAFETY VALVES



Class 'A' Safety valve, normally closed, slow opening, flanged connection

| Type | Pmax, mbar | Connection size | Supply voltage |
|-----------------|------------|-----------------|----------------|
| BT-BC6689 FL4 | 500 | DN150 | 230 Vac |
| BT-BC66810 FL4 | 250 | DN200 | 230 Vac |
| BT-BC 66811 FL4 | 250 | DN250 | 230 Vac |

Semi-automatic safety valves

VG400AA MANUAL RESET SOLENOID VALVES



Class 'A' Safety valve, normally closed, fast opening, threaded connection

| Type | Pmax, mbar | Connection size | Supply voltage |
|--------------|------------|-----------------|----------------|
| VG415 AA1004 | 500 | ½" | 230 Vac |
| VG420 AA1007 | 500 | ¾" | 230 Vac |
| VG425 AA1002 | 500 | 1" | 230 Vac |

VG400SA MANUAL RESET SOLENOID VALVES



Safety valve, normally open, fast opening, threaded connection

| Type | Pmax, mbar | Connection size | Supply voltage |
|--------------|------------|-----------------|----------------|
| VG415 SA1002 | 500 | ½" | 230 Vac |
| VG420 SA1005 | 500 | ¾" | 230 Vac |
| VG425 SA1000 | 500 | 1" | 230 Vac |

VG4000A1 MANUAL RESET SOLENOID VALVES



Class 'A' Safety valve, manually opened, normally closed, fast opening, threaded connection

| Type | Pmax, mbar | Connection size | Supply voltage |
|--------------|------------|-----------------|----------------|
| VG4032 A1006 | 500 | 1-¼" | 230 Vac |
| VG4040 A1009 | 500 | 1-½" | 230 Vac |
| VG4050 A1008 | 500 | 2" | 230 Vac |
| VG4065 A1006 | 360 | 2-½" | 230 Vac |
| VG4080 A1005 | 360 | 3" | 230 Vac |

VG4000A3 FLANGED MANUAL RESET SOLENOID VALVES



Class 'A' Safety valve, manually opened, normally closed, fast opening, flanged connection

| Type | Pmax, mbar | Connection size | Supply voltage |
|------------|------------|-----------------|----------------|
| VG4065 A30 | 360 | DN65 | 230 Vac |
| VG4080 A30 | 360 | DN80 | 230 Vac |
| VG4100 A30 | 360 | DN100 | 230 Vac |

Combination gas controls

VQ420 & VQ425 COMBINATION GAS CONTROLS



Combination gas valves with 2 class „A“ valves with options for minimum and maximum pressure switches, bypass/pilot/hi-low valves, as well as a Valve Proving System.

VQ420 connection size: 3/4", maximum inlet pressure: 360 mbar

| VQ420.. | Main valve 1 | Main valve 2 | Hi/low bypass | Vent valve | External pilot |
|-----------|--------------|--------------|---------------|---------------------|----------------|
| AA | fast | fast | - | - | - |
| AB | fast | slow | - | - | - |
| BA | fast | fast | fast | - | - |
| BB | fast | slow | fast | - | - |
| BC | fast | fast | slow | - | - |
| BD | fast | slow | slow | - | - |
| CB | fast | slow | - | yes with CPI switch | - |
| DB | fast | slow | fast | yes | - |
| EA | fast | fast | - | - | yes |
| EB | fast | slow | - | - | yes |
| FD | fast | slow | slow | - | yes |
| JB | fast | slow | - | yes | yes |

VQ425 connection size: 1", maximum inlet pressure: 360 mbar

| VQ425.. | Main valve 1 | Main valve 2 | Hi/low bypass | Vent valve | External pilot |
|-----------|--------------|--------------|---------------|------------|----------------|
| AA | fast | fast | - | - | - |
| AB | fast | slow | - | - | - |
| BA | fast | fast | fast | - | - |
| BB | fast | slow | fast | - | - |
| BC | fast | fast | slow | - | - |
| BD | fast | slow | slow | - | - |
| CA | fast | fast | - | yes | - |
| CB | fast | slow | - | yes | - |
| EA | fast | fast | - | - | yes |
| EB | fast | slow | - | - | yes |
| FA | fast | fast | fast | - | yes |
| FB | fast | slow | fast | - | yes |
| GB | fast | slow | fast | - | internal |
| JB | fast | slow | - | yes | yes |

Combination gas controls

VQ440 & VQ450 COMBINATION GAS CONTROLS



Combination gas valves with 2 class „A“ valves with options for minimum and maximum pressure switches, bypass/pilot/hi-low valves, as well as a Valve Proving System.

VQ440 connection size: 1-½", maximum inlet pressure: 200 mbar

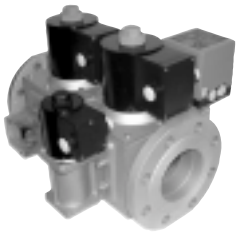
| VQ440.. | Main valve 1 | Main valve 2 | Hi/low bypass | Vent valve | External pilot |
|-----------|--------------|--------------|---------------|---------------------|----------------|
| AA | fast | fast | - | - | - |
| AB | fast | slow | - | - | - |
| BA | fast | fast | fast | - | - |
| | fast | slow | fast | - | - |
| BC | fast | fast | slow | - | - |
| BD | fast | slow | slow | - | - |
| CB | fast | slow | - | yes | - |
| DD | fast | slow | slow | yes | - |
| EA | fast | fast | - | - | yes |
| EB | fast | slow | - | - | yes |
| FA | fast | fast | fast | - | yes |
| FB | fast | slow | fast | - | yes |
| GA | fast | fast | fast | - | internal |
| GC | fast | fast | slow | - | internal |
| JB | fast | slow | - | yes with CPI switch | yes |

VQ450 connection size: 2", maximum inlet pressure: 200 mbar

| VQ450.. | Main valve 1 | Main valve 2 | Hi/low bypass | Vent valve | External pilot |
|-----------|--------------|--------------|---------------|------------|----------------|
| AA | fast | fast | - | - | - |
| AB | fast | slow | - | - | - |
| BA | fast | fast | fast | - | - |
| BB | fast | slow | fast | - | - |
| BC | fast | fast | slow | - | - |
| BD | fast | slow | slow | - | - |
| CA | fast | fast | - | - | - |
| CB | fast | slow | - | yes | - |
| EA | fast | fast | - | - | yes |
| EB | fast | slow | - | - | yes |
| FB | fast | slow | fast | - | yes |

Combination gas controls

VQ465 & VQ480 COMBINATION GAS CONTROLS



Combination gasvalves with 2 class „A“ valves with options for minimum and maximum pressure switches, bypass/pilot/hi-low valves, as well as a Valve Proving System.

VQ465 connection size: 2-1/2", maximum inlet pressure: 200 mbar

| VQ465.. | Main valve 1 | Main valve 2 | Hi/low bypass | Vent valve | External pilot |
|-----------|--------------|--------------|---------------|------------|----------------|
| AA | fast | fast | - | - | - |
| AB | fast | slow* | - | - | - |
| BA | fast | fast | fast | - | - |
| BB | fast | slow* | fast | - | - |
| BC | fast | fast | slow | - | - |
| BD | fast | slow* | slow | - | - |
| Cx | fast | fast/slow | - | yes | - |
| Ex | fast | fast/slow | - | - | yes |
| Fx | fast | fast/slow | yes | - | yes |
| Gx | fast | fast/slow | yes | - | internal |
| Hx | - | fast/slow | yes | - | - |
| Jx | fast | fast/slow | - | yes | yes |

VQ480 connection size: 3", maximum inlet pressure: 200 mbar

| VQ480.. | Main valve 1 | Main valve 2 | Hi/low bypass | Vent valve | External pilot |
|-----------|--------------|--------------|---------------|------------|----------------|
| AA | fast | fast | - | - | - |
| AB | fast | slow* | - | - | - |
| BA | fast | fast | fast | - | - |
| BB | fast | slow* | fast | - | - |
| BC | fast | fast | slow | - | - |
| BD | fast | slow* | slow | - | - |
| Cx | fast | fast/slow | - | yes | - |
| Ex | fast | fast/slow | - | - | yes |
| Fx | fast | fast/slow | yes | - | yes |
| Gx | fast | fast/slow | yes | - | internal |
| Hx | - | fast/slow | yes | - | - |
| Jx | fast | fast/slow | - | yes | yes |

* In case of slow opening, the fluid power actuator has to be purchased separately.

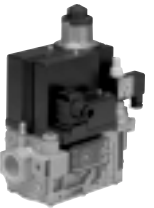
Combination gas controls

VR400 COMBINATION GAS CONTROLS WITH PRESSURE REGULATOR



Combination Gas Valves with 2 class „A“ closing force safety valves and one servo pressure regulated control valve, including fine mess strainer at inletside. Versions for Direct Burner Ignition (DBI) and Intermittent Pilot (IP). Options for minimum and maximum pressure switches.

| Type | Pmax, mbar | Connection size | Supply voltage |
|---------|------------|-----------------|----------------|
| VR415.. | 200 | ½" | 230 Vac |
| VR420.. | 200 | ¾" | 230 Vac |
| VR425.. | 200 | 1" | 230 Vac |
| VR432.. | 200 | Big Bore 1" | 230 Vac |
| VR434.. | 200 | 1-¼" | 230 Vac |



With On/Off standard pressure regulator (3 to 37 mbar)

| | |
|----------|----------------------------------|
| VR4xx AA | <i>Fast opening DBI versions</i> |
| VR4xx AB | <i>Slow opening DBI versions</i> |
| VR4xx AE | <i>Fast opening IP versions</i> |
| VR4xx AF | <i>Slow opening IP versions</i> |

With High/Low pressure regulator (4 to 37 mbar)

| | |
|----------|----------------------------------|
| VR4xx PA | <i>Fast opening DBI versions</i> |
| VR4xx PB | <i>Slow opening DBI versions</i> |
| VR4xx PE | <i>Fast opening IP versions</i> |
| VR4xx PF | <i>Slow opening IP versions</i> |

With „modureg“ regulator (3 to 37mbar), allows electrical modulation of the outlet pressure. To be used with QM100A1009 modureg driver

| | |
|----------|----------------------------------|
| VR4xx MA | <i>Fast opening DBI versions</i> |
| VR4xx MB | <i>Slow opening DBI versions</i> |
| VR4xx ME | <i>Fast opening IP versions</i> |

With Gas/air 1:1 regulator and fast opening second valve, for applications of 150...590 kW output

| | |
|----------|---------------------|
| VR4xx VA | <i>DBI versions</i> |
| VR4xx VE | <i>IP versions</i> |

VRB COMBINATION GAS CONTROLS WITH PRESSURE REGULATOR

Combination Gas Valves with 2 class „B“ closing force safety valves and one servo pressure regulated control valve, including fine mess strainer at inletside. Versions for Direct Burner Ignition (DBI) and Intermittent Pilot (IP).

| Type | Pmax, mbar | Connection size | Supply voltage |
|--------------|------------|-----------------|----------------|
| VRB25 PA1205 | 200 | 1" | 230 Vac |

Motorized throttle valves

VT4000A MOTORIZED THROTTLE GAS VALVES



Using MT4000 or MF4000 Series servo motor as rotation actuator with standard on/off floating contacts. Stroke time and supply voltage are depending on motor model.

| Type | Pmax, mbar | Connection size | Supply voltage |
|--------------|------------|-----------------|----------------|
| VT4025 A1009 | 360 | 1" | 230 Vac |
| VT4050 A1007 | 360 | 2" | 230 Vac |

VT5000M1 MOTORIZED THROTTLE GAS VALVES

Throttle Valve with adaptor plate to accomodate Mod IV or MF4000 motors. Stroke time and supply voltage are depending on motor model.

| Type | Pmax, mbar | Connection size | Supply voltage |
|------------------------------------|------------|-----------------|----------------|
| VT5025 M1005 (with Mod IV adaptor) | 360 | 1" | 230 Vac |
| VT5025 M1013 (with MF4000 adaptor) | 360 | 1" | 230 Vac |
| VT5050 M1003 (with Mod IV adaptor) | 360 | 2" | 230 Vac |
| VT5050 M011 (with MF4000 adaptor) | 360 | 2" | 230 Vac |

VT5000M2 MOTORIZED THROTTLE GAS VALVES

Throttle Valve with adaptor plate to accomodate LKS160 motors. Stroke time and supply voltage are depending on motor model.

| Type | Pmax, mbar | Connection size | Supply voltage |
|--------------|------------|-----------------|----------------|
| VT5025 M2003 | 360 | 1" | 230 Vac |
| VT5050 M2001 | 360 | 2" | 230 Vac |

V5197 FIRING RATE GAS VALVES



Throttle valve with adaptor plate accomodate Mod IV or MF4000 motors. Stroke time and supply voltage are depending on motor model.

| Type | Pmax, mbar | Connection size | Supply voltage |
|-------------|------------|-----------------|----------------|
| V5197 A1029 | 1000 | DN65 | 230 Vac |
| V5197 A1037 | 1000 | DN80 | 230 Vac |

Butterfly Valves

VF5000A MANUALLY OPERATED BUTTERFLY VALVES



Manually operated flanged valve, with option to mount MT4000 or MF4000 Series servo motors.

| Type | Pmax, mbar | Connection size |
|--------------|------------|-----------------|
| VF5025 A3007 | 500 | DN25 |
| VF5032 A3003 | 500 | DN32 |
| VF5040 A3006 | 500 | DN40 |
| VF5050 A3005 | 500 | DN50 |
| VF5065 A3003 | 500 | DN65 |
| VF5080 A3002 | 500 | DN80 |
| VF5100 A3008 | 500 | DN100 |
| VF5125 A3005 | 500 | DN125 |
| VF5150 A3003 | 500 | DN150 |

VF5000R MANUALLY OPERATED BUTTERFLY VALVES

Manually operated flanged valve, with reduced capacity and option to mount MT4000 or MF4000 Series servo motors.

| Type | Pmax, mbar | Connection size |
|--------------|------------|-----------------|
| VF5025 R3009 | 500 | DN20 |
| VF5032 R3005 | 500 | DN25 |
| VF5040 R3008 | 500 | DN32 |
| VF5050 R3007 | 500 | DN40 |
| VF5065 R3005 | 500 | DN50 |
| VF5080 R3004 | 500 | DN65 |
| VF5100 R3000 | 500 | DN80 |
| VF5125 R3007 | 500 | DN100 |
| VF5150 R3005 | 500 | DN125 |

Gas pressure regulators

HUP(F) GAS PRESSURE REGULATORS



Spring loaded gas pressure regulator with inlet pressure compensation and zero shut-off and possibility of incorporated filter.



| Type – with filter | Type – without filter | Connection | Connection size | Pmax, mbar |
|--------------------|-----------------------|------------|-----------------|------------|
| HUPF015 B150 | HUP015 B150 | threaded | ½" | 1000 |
| HUPF020 B150 | HUP020 B150 | threaded | ¾" | 1000 |
| HUPF025 B150 | HUP025 B150 | threaded | 1" | 1000 |
| HUPF032 B150 | HUP032 B150 | threaded | 1-¼" | 1000 |
| HUPF040 B150 | HUP040 B150 | threaded | 1-½" | 1000 |
| HUPF050 B150 | HUP050 B150 | threaded | 2" | 1000 |
| - | HUP040 B350 | flanged | DN40 | 1000 |
| - | HUP050 B350 | flanged | DN50 | 1000 |
| HUPF065 B350 | HUP065 B350 | flanged | DN65 | 1000 |
| HUPF080 B350 | HUP080 B350 | flanged | DN80 | 1000 |
| HUPF100 B350 | HUP100 B350 | flanged | DN100 | 1000 |

REPLACEMENT CARTRIDGE FILTERS FOR HUPF GAS PRESSURE REGULATORS

| Type | Regulator types |
|--------------|---------------------------------------|
| KTFL31150/C1 | HUPF015B150, HUPF020B150, HUPF025B150 |
| KTFL31153/C1 | HUPF032B150, HUPF040B150 |
| KTFL31155/C1 | HUPF050B150 |
| KTFL31156/C1 | HUPF065B350, HUPF080B350 |
| KTFL31158/C1 | HUPF100B350 |

SPRING SELECTION MATRIX – HRSPXXX

| Type | Green 5-13 mbar | Red 7-20 mbar | White 10-30 mbar | Yellow 25-55 mbar | Blue 30-70 mbar | Black 60-110 mbar | Violet 110-150 mbar | Orange 140-350 mbar | Pink 350-500 mbar |
|--------------------------|-----------------------|---------------------|------------------------|-------------------------|-----------------------|-------------------------|---------------------------|---------------------------|-------------------------|
| HUP(F)015/020 HUPF025 | 150M1 | 150M2 | 150M3 | 150M4 | 150M5 | 150M6 | 150M7 | 150M8 | 150M9 |
| HUP025 | 152M1 | 152M2 | 152M3 | 152M4 | 152M5 | 152M6 | 152M7 | 152M8 | 152M9 |
| HUP(F)032/040 | 153M1 | 153M2 | 153M3 | 153M4 | 153M5 | 153M6 | 153M7 | 153M8 | 153M9 |
| HUP(F)050 | 155M1 | 155M2 | 155M3 | 155M4 | 155M5 | 155M6 | 155M7 | 155M8 | 155M9 |
| HUP(F)065/080 | 156M1 | 156M2 | 156M3 | 156M4 | 156M5 | 156M6 | 156M7 | 156M8 | 156M9 |
| HUP(F)100 | 158M1 | 158M2 | 158M3 | 158M4 | 158M5 | 158M6 | 158M7 | 158M8 | 158M9 |

Gas filters

HUF GAS FILTERS



Gas filter with filter element consisting of 2 long life Viledon P15/500S DIN F017/82 filter panels.

| Type | Connection | Connection size | Pmax, mbar |
|-------------|------------|-----------------|------------|
| HUF015 B110 | threaded | ½" | 2000 |
| HUF020 B110 | threaded | ¾" | 2000 |
| HUF025 B110 | threaded | 1" | 2000 |
| HUF032 B110 | threaded | 1-¼" | 2000 |
| HUF040 B110 | threaded | 1-½" | 2000 |
| HUF025 B340 | flanged | DN 25 | 2000 |
| HUF032 B340 | flanged | DN 32 | 2000 |
| HUF040 B340 | flanged | DN40 | 2000 |
| HUF050 B340 | flanged | DN50 | 2000 |
| HUF065 B340 | flanged | DN65 | 2000 |
| HUF080 B340 | flanged | DN80 | 2000 |
| HUF100 B340 | flanged | DN100 | 2000 |
| HUF150 B340 | flanged | DN150 | 2000 |



REPLACEMENT CARTRIDGE FILTERS FOR HUF GAS FILTERS

| Type | Filter types |
|--------------|--|
| KTFL10201/C1 | HUF015B110, HUF020B110, HUF025B340 |
| KTFL10203/C1 | HUF025B110, HUF032B110, HUF032B340, HUF040B110, HUF040B340 |
| KTFL10206/C1 | HUF050B110, HUF050B340 |
| KTFL10207/C1 | HUF065B340, HUF080B340 |
| KTFL10209/C1 | HUF100B340 |
| KTFL10210/C1 | HUF150B340 |

Flexible tubings

HUG FLEXIBLE TUBINGS

Stainless steel flexible tubings for stress-free gastrain installation



| Type | Connection | Connection size | Pmax, mbar |
|-------------|------------|-----------------|------------|
| HUG015 B110 | threaded | ½" | 2500 |
| HUG020 B110 | threaded | ¾" | 2500 |
| HUG025 B110 | threaded | 1" | 2500 |
| HUG032 B110 | threaded | 1-¼" | 2500 |
| HUG040 B110 | threaded | 1-½" | 2500 |
| HUG050 B110 | threaded | 2" | 2500 |
| HUG065 B110 | flanged | 2-½" | 2500 |
| HUG050 B310 | flanged | DN50 | 2500 |
| HUG065 B310 | flanged | DN65 | 2500 |
| HUG080 B310 | flanged | DN80 | 2500 |
| HUG100 B310 | flanged | DN100 | 2500 |

Pressure switches

C6097A PRESSURE SWITCHES



Gas pressure switch „stand alone“ model with 1/4" Rp connection at the bottom, with PG11 connection for electrical wiring

| Type | Operating range, mbar | Nominal operating differential, mbar | Pmax, mbar |
|-------------|-----------------------|--------------------------------------|------------|
| C6097 A2110 | 1...10 | 0,4 | 200 |
| C6097 A2210 | 2,5...50 | 0,6 | 300 |
| C6097 A2310 | 30...150 | 2,8 | 500 |
| C6097 A2410 | 100...500 | 7,0 | 600 |

C6045D PRESSURE SWITCHES

Gas pressure switch „stand alone“ model with 1/4" Rp connection at the bottom, with PG11 connection for electrical wiring

| Type | Operating range, mbar | Nominal operating differential, mbar | Pmax, mbar |
|--------------------|-----------------------|--------------------------------------|------------|
| C6045 D1019 | 5...50 | 1,2-2,5 | 200 |
| C6045 D1027 | 15...150 | 3,5-10 | 200 |
| C6045 D1043 | 0,2...3 | 0,3-0,5 | 100 |
| C6045 D1050 | 1...10 | 0,5-1 | 100 |

Servo motors, valve actuators

MT4000 SERVO MOTORS FOR AIR DAMPERS AND VF5000 BUTTERFLY VALVES



Servo motors to control and govern air lock of gaseous and liquid fuel burners

| Type | Description |
|---------|---|
| MT4000A | For combustion air dampers and VF5000 butterfly valves. External signals for modulation required. Stroke timing on 90°: 6, 24 or 48 sec., left or right rotation |
| MT4000B | For combustion air dampers and VF5000 butterfly valves. Including relay for one external modulation input. Stroke timing on 90°: 6, 12 or 24 sec., left or right rotation |
| MT4001A | For air dampers in gas burners. To be used with full featured ignition controllers and 3-wire thermostats. Stroke timing on 90°: 6 sec. (left rotation), 24 sec. (right rotation) |
| MT4001B | For air dampers in gas burners. With low fire adjustment switch. To be used with full featured ignition controllers and 2-wire thermostats. Stroke timing on 90°: 6, 12, 24 or 30 sec., left or right rotation |
| MT4001C | For air dampers in gas burners. To be used with Satronic TMG 740 ignition controller. Stroke timing on 90°: 6 sec. (left rotation) |
| MT4002B | For air dampers in oil burners. Including relay for 2-wire thermostat connection. With low fire adjustment switch. Left or right rotation |
| MT4003C | Intelligent servo motor for air dampers in gas burners. To be used with on/off ignition controllers. The unit includes high/low function during pre-purge and ,run' position. Including relay for 2-wire thermostat connection and positioning switch. Stroke timing on 90°: 6 sec. (left or right rotation) |
| MT4004A | For air dampers in gas burners. To be used with full featured ignition controller: Satronic DMG 972. Stroke timing on 90°: 12 or 24 sec. (right rotation) |

MF4000 HEAVY DUTY SERVO MOTORS FOR BUTTERFLY AND THROTTLE VALVES



Servo motors for general purpose applications and for VF5000 butterfly valves.

| Type | Description |
|---------|---|
| MF4000A | Floating adjustment with 3 free standard switches. External signals for modulation required. Stroke timing on 90°: 15, 30 or 60 sec. |
| MF4000B | Floating adjustment with 3 free standard switches. With internal relay for ON/OFF adjustment. Stroke timing on 90°: 15, 30 or 60 sec. |
| MF4000P | Floating adjustment with 3 free standard switches and 1 or 2 feedback potentiometer(s). External signals for modulation required. |

Burner control systems

7800 SERIES BURNER PROGRAMMERS



- Universal burner programmers with modular construction.
- Self-checking relay module with selectable purgecards.
- With plug-in flame signal amplifier - R78xx series which can be standard or self-checking versions.
- Prepurge time can be selected between 2 sec. and 30 min. by using the proper ST7800A purge cards.
- First safety time: 5 or 3 sec.
- Internal non-volatile memory stores the last 6 failures.
- Easily understandable message visualisation in the optional S7800A keyboard display module.
- Basic function indication through 5 LEDs.
- Modbus communication through the S7810M modul.

EC7800 RELAY MODULES FOR 230VAC POWER SUPPLY

| Type | Description |
|---------|--|
| EC7810A | For single fuel atmospheric burner applications. |
| EC7820A | For single fuel fan assisted atmospheric burner applications. |
| EC7830A | For combination or single fuel ON/OFF power burner applications. |
| EC7850A | For combination or single fuel modulating power burner applications. |
| EC7890A | For atmospheric burners without prepurge |

Q7800 SUBBASES FOR WALL OR PANEL MOUNTING

| Type | Description |
|-------------|------------------------------------|
| Q7800 A1005 | For mounting in cabinet - standard |
| Q7800 B1003 | For mounting on burner or wall |

ST7800 PREPURGE CARDS

| Type | Description | Type | Description |
|--------------|-------------|--------------|-------------|
| ST7800 A1013 | 7 sec. | ST7800 A1088 | 4 min. |
| ST7800 A1021 | 10 sec. | ST7800 A1096 | 6 min. |
| ST7800 A1039 | 30 sec. | ST7800 A1104 | 9 min. |
| ST7800 A1047 | 40 sec. | ST7800 A1112 | 12 min. |
| ST7800 A1054 | 60 sec. | ST7800 A1120 | 15 min. |
| ST7800 A1062 | 90 sec. | ST7800 A1138 | 22 min. |
| ST7800 A1070 | 2,5 min. | ST7800 A1146 | 30 min. |

Burner control systems

R7800 AMPLIFIERS FOR FLAME SENSORS

| Type | Description | FFRT | Type of flame sensor |
|---|---------------|--------|--|
| UV flame detector amplifiers | | | |
| R7847 C1005 | self-checking | 2 sec. | Ñ7012E/F |
| R7849 A1023 | standard | 2 sec. | Ñ7027A, Ñ7035A, Ñ7044 |
| R7849 A1015 | standard | 1 sec. | |
| R7849 B1013 | self-checking | 1 sec. | Ñ7027A, Ñ7035A, Ñ7044 |
| R7849 B1021 | self-checking | 2 sec. | |
| R7851 B1000 | self-checking | 1 sec. | C7927, C7961 |
| R7861 A1026 | self-checking | 1 sec. | Ñ7061 |
| R7861 A1034 | self-checking | 2 sec. | Ñ7061 |
| R7886 A1001 | self-checking | 2 sec. | Ñ7076 |
| Amplifiers for ionisation electrodes | | | |
| R7847 A 033 | standard | 2 sec | electrodes |
| R7847 A1025 | standard | 1 sec | Ñ7005, Ñ7008, Ñ7009, Q179; electrodes |
| R7847 B1023 | self-checking | 1 sec | |
| R7847 A1074 | self-checking | 1 sec | C7012A/C; electrodes |
| R7847 B1031 | self-checking | 3 sec | electrodes |

S7800 KEYBOARD DISPLAY MODULES

| Type | Display language | Type | Display language |
|---------------|------------------|---------------|------------------|
| S 7800 A 1001 | English | S 7800 A 1068 | Spanish |
| S 7800 A 1035 | French | S 7800 A 1118 | Japanese |
| S 7800 A 1043 | German | S 7800 A 1176 | Portuguese |
| S 7800 A 1050 | Italian | S 7800 A 1009 | Chinese |

S7810/20 REMOTE COMMUNICATION MODULES

| Type | Description |
|---------------|---|
| S 7810 A 1009 | Databus module for remote mounting of keyboard display with serial communication. |
| S 7820 A 1007 | Remote reset module. |
| S 7810 M 1029 | Serial communication Modbus modul. |

Flame detector

MINIPEEPER® UV FLAME SENSORS



| Type | Description |
|---|---|
| Minipeeper® UV flame sensors with straight viewing | |
| C7027 A1049 | Compact flame sensor, -18...+102°C, ½" NPT, 2,4m cable |
| C7027 A1064 | Compact flame sensor, -40...+102°C, ½" NPT, 2,4m cable |
| C7035 A1023 | Flame sensor with replaceable UV tube, -18...+121°C, 1" NPT, 1,8m cable |
| C7035 A1031 | Flame sensor with replaceable UV tube, -40...+121°C, 1" NPT, 1,8m cable |
| Flame sensors with straight or side viewing | |
| C7044 A1006 | Compact flame sensor, -18...+102°C, ½" NPT, 1,8m cable |
| C7927 A1008 | Compact solid state flame sensor, -20...+60°C, ½" NPT, 1,2m cable |

SELF-CHECKING UV FLAME SENSORS



| Type | Description |
|-------------|---|
| C7061 A1020 | -40...+70°C, ¾" NPT flange, supply voltage: 230V or 110V |
| C7961 A | Solid state flame sensors |
| C7076 A1031 | Adjustable sensitivity, -40...+70°C |
| C7061 F1003 | Explosion-proof self/checking flame sensor, -20...+70°C |
| C7076 F1027 | Explosion-proof self/checking flame sensor with adjustable sensitivity, -20...+70°C |

IONISATION ELECTRODES

| Type | Description |
|-------------|--|
| C7008 A1000 | Electrode, 152 mm long, diameter 22 mm |
| C7008 A1018 | Electrode, 305 mm long, diameter 22 mm |
| C7008 A1034 | Electrode, 612 mm long, diameter 22 mm |
| C7009 A1025 | Mini-electrode, cuttable 305 mm long, diameter 10 mm |

FLAME SENSOR & AMPLIFIER SELECTION CHART

| Type | Standard 7800 Series | Self-checking | Standard R4348B | Self-checking |
|--------------------|-------------------------|---------------|--------------------|---------------|
| 2 sec FFRT. | | | | |
| C7027/35/44 | R7849A1023 | - | R7323B1026 | - |
| C7061 | - | R7861A1034 | - | R7061A1016 |
| C7076 | - | R7886A1001 | - | R7476A1007 |
| Ionisation | R7847A1033 | R7847B1031 | R7321B1028 | R7247B1011 |
| 1 sec FFRT. | | | | |
| C7027/35/44 | R7849A1049 | - | | |
| C7061 | - | R7861A1034 | | |
| C7076 | - | R7886A1001 | | |
| Ionisation | R7847A1058 | R7849B1049 | | |

CONTROLINKS™ fuel-air ratio controls

R7999 FUEL-AIR RATIO CONTROL UNIT



High precision ratio control without mechanical links, with the following advantages

- 0.1% accuracy, by using independent fuel-air ratio curves
- reduced installation cost
- Simpler and faster operation, without mechanical links
- New safety methods, like feedback potentiometer circuit.

ML7999 UNIVERSAL PARALLEL SERVOMOTOR



For air dampers, throttle valves, flugas recirculation dampers

The servomotor has feedback to the R7999 unit through a precision potentiometer circuit to achieve repositioning, thus providing optimal burner capacity.

ZM7999 INSTALLATION SOFTWARE PACKAGE

With a Windows-compatible online installation guide.

The software has a descriptive help function to follow adjustment step by step, and a monitoring function to show the fault history.

Valve proving systems

A4021A ELECTRONIC VALVE PROVING SYSTEM



Microprocessor based universal valve proving system. Stages of operation and test results are visualised through LEDs. Can be used on any pressure, depending on the pressure range, allowed by the system pressure switch. Can be used to any pressure allowed by the selected pressure switch.

| Type | Description |
|-------------|---|
| A4021 A1002 | Electronic valve proving system, supply voltage 230V/50Hz |
| A4021 A1010 | Electronic valve proving system, supply voltage 110V/50Hz |

Accessories

| | |
|------------|--|
| ZL030001 | subbase for mounting the VPS |
| 1030002020 | Mounting bracket for VQ combination valves |
| KTVPS01 | Kit for mounting on VQ valves. Consists of a A4021 VPS unit, a pressure switch and a mounting bracket. |

Servo motors, valve actuators

LKS SERVO MOTORS FOR AIR DAMPERS

Servo motors for general use for combustion air dampers.



| Type | Description |
|--------|---|
| LKS118 | For small burners with simple air damper control (open/close) Stroke timing: 5 sec., 0,6 Nm |
| LKS131 | For 1 or 2-stage oil and gas burners with or without fully closing damper. Stroke timing: 5, 15 or 38 sec., 0,6 Nm |
| LKS160 | For air dampers on multi-stage or modulating oil and gas burners with fully closing dampers. Stroke timing: 3...65 sec., 1,5...3,0 Nm |
| LKS170 | For direct coupled air dampers on multi-stage or modulating oil and gas burners with fully closing dampers. Stroke timing: 5...30 sec., 1,2...2,8 Nm |
| LKS310 | For air dampers with higher torque and industrial applications. Stroke timing: 3, 5...30 sec., 3,5...15,0 Nm |

MODUTROL IV SERVO MOTORS

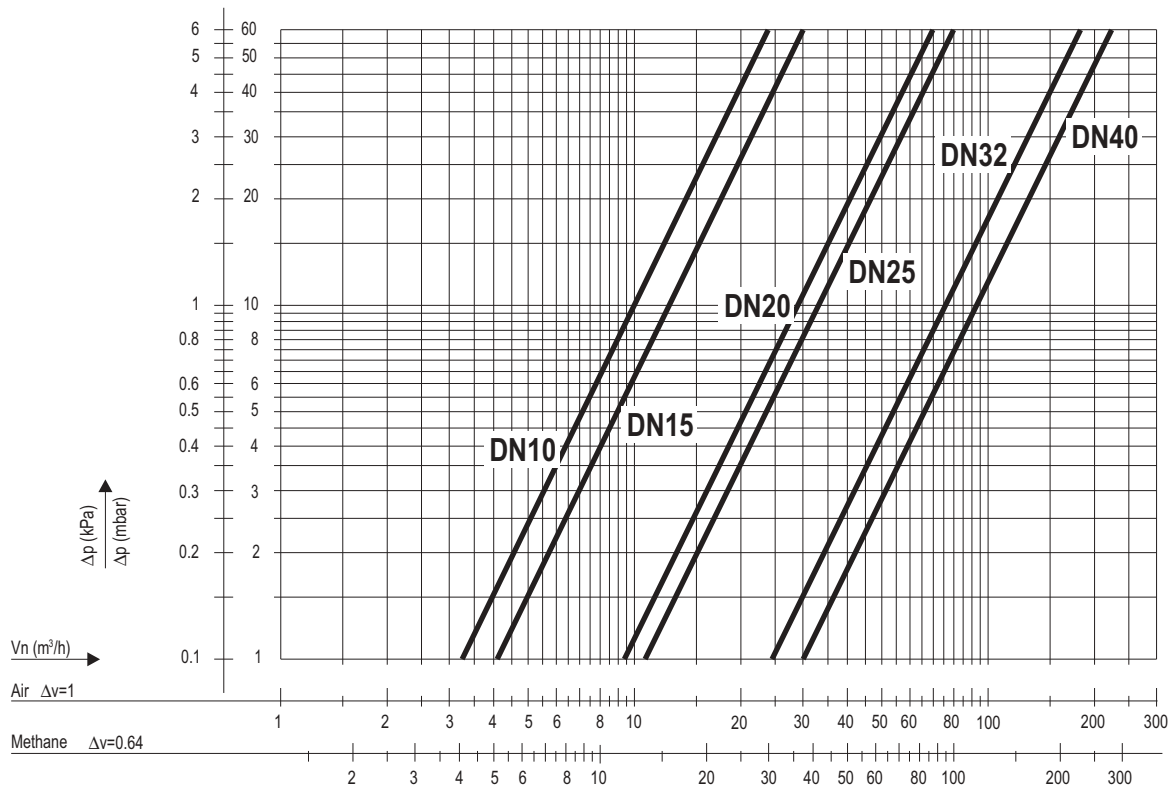
Industrial actuator motors for valves and air dampers.



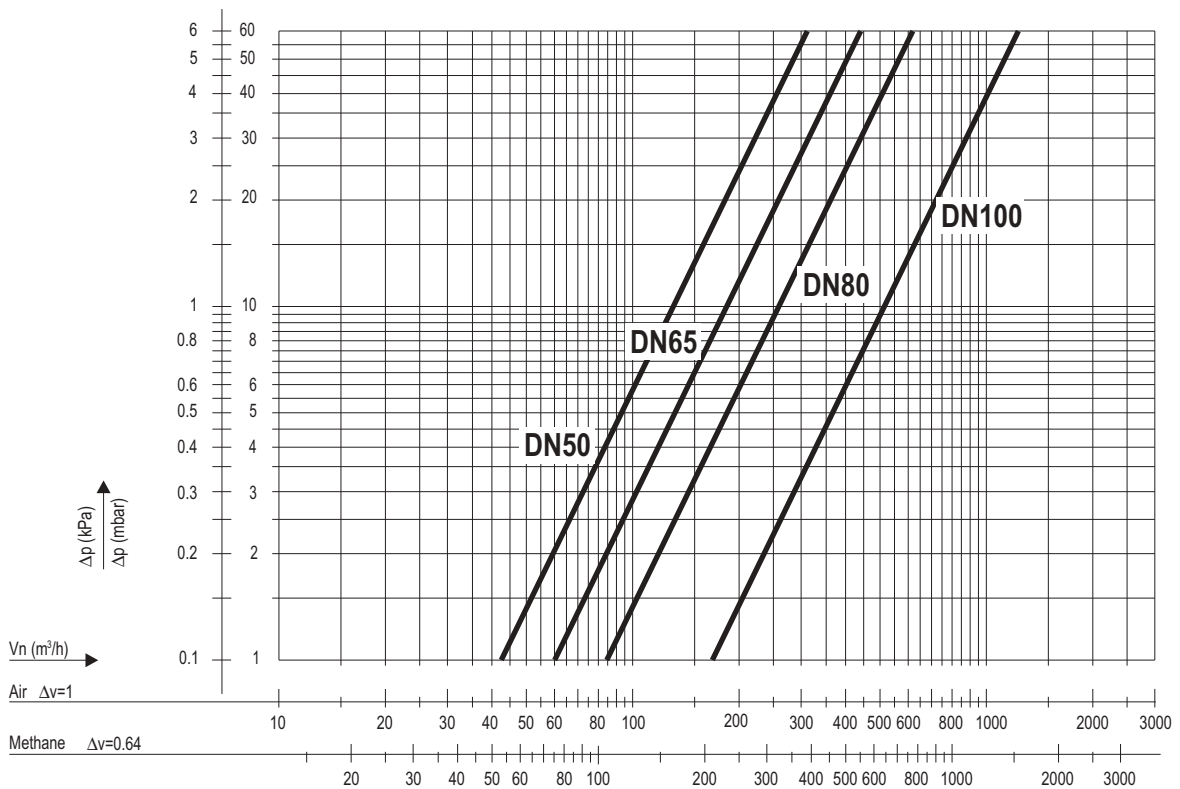
| Type | Description |
|-------------------------------|--|
| M4185/6, M8185 | Two position, spring-return motors. Stroke timing: 30...60 sec. |
| M6184, M6194 | Reversing, 3-wire spdt or floating control motors. Stroke timing: 15...240 sec. |
| M6284, M6294 | Reversing, 3-wire floating control motors with feedback potentiometer. Used with controllers that provide a spdt output. Stroke timing: 30...240 sec. |
| M6285/6 | Spring return motors with isolated feedback potentiometer, used with spdt or floating controls. Stroke timing: 30 or 60 sec. |
| M7164, M7185 | Proportional motors used with a modulationg dc voltage source. Stroke timing: 30 or 60 sec. |
| M7284/5/6, M7294 | Proportional motors used with a modulationg 2-10Vdc or 4-20mA input signal. Stroke timing: 15, 30, 60 or 120 sec. |
| M9164, M9174, M9184, M9194 | Reversing, proportional motors Stroke timing: 15...240 sec. |
| M9175, M9185/6 | Reversing, proportional, spring return motors Stroke timing: 30...60 sec. |

Capacity curves

VE4000 SOLENOID VALVES, DN10 - DN40

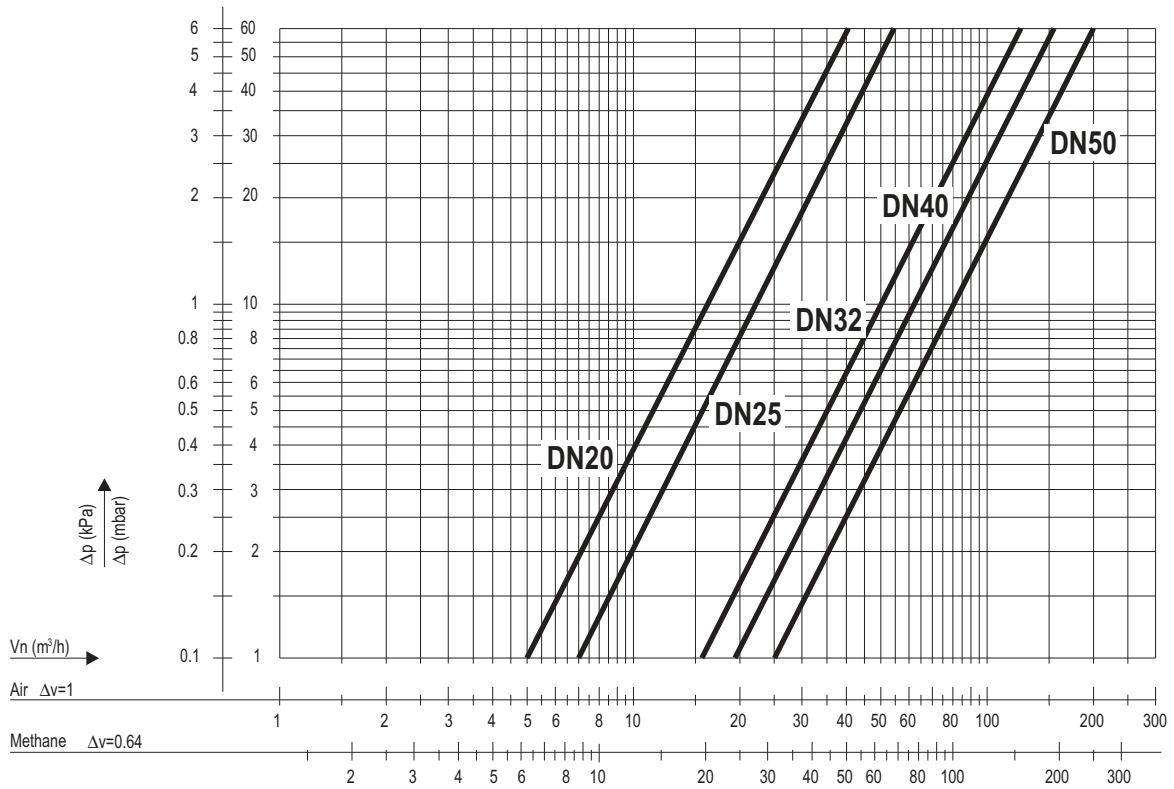


VE4000 SOLENOID VALVES, DN20 - DN100

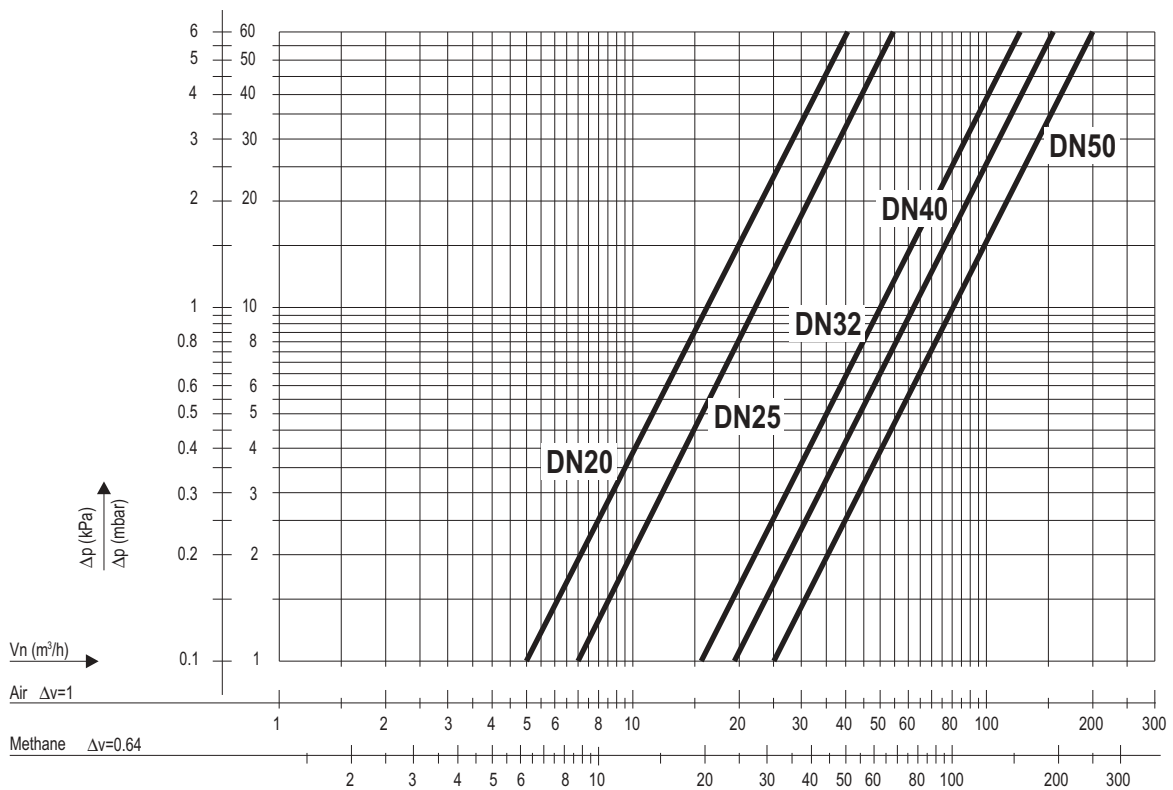


Capacity curves

VE5000 GASVALVES, DN65 - DN100

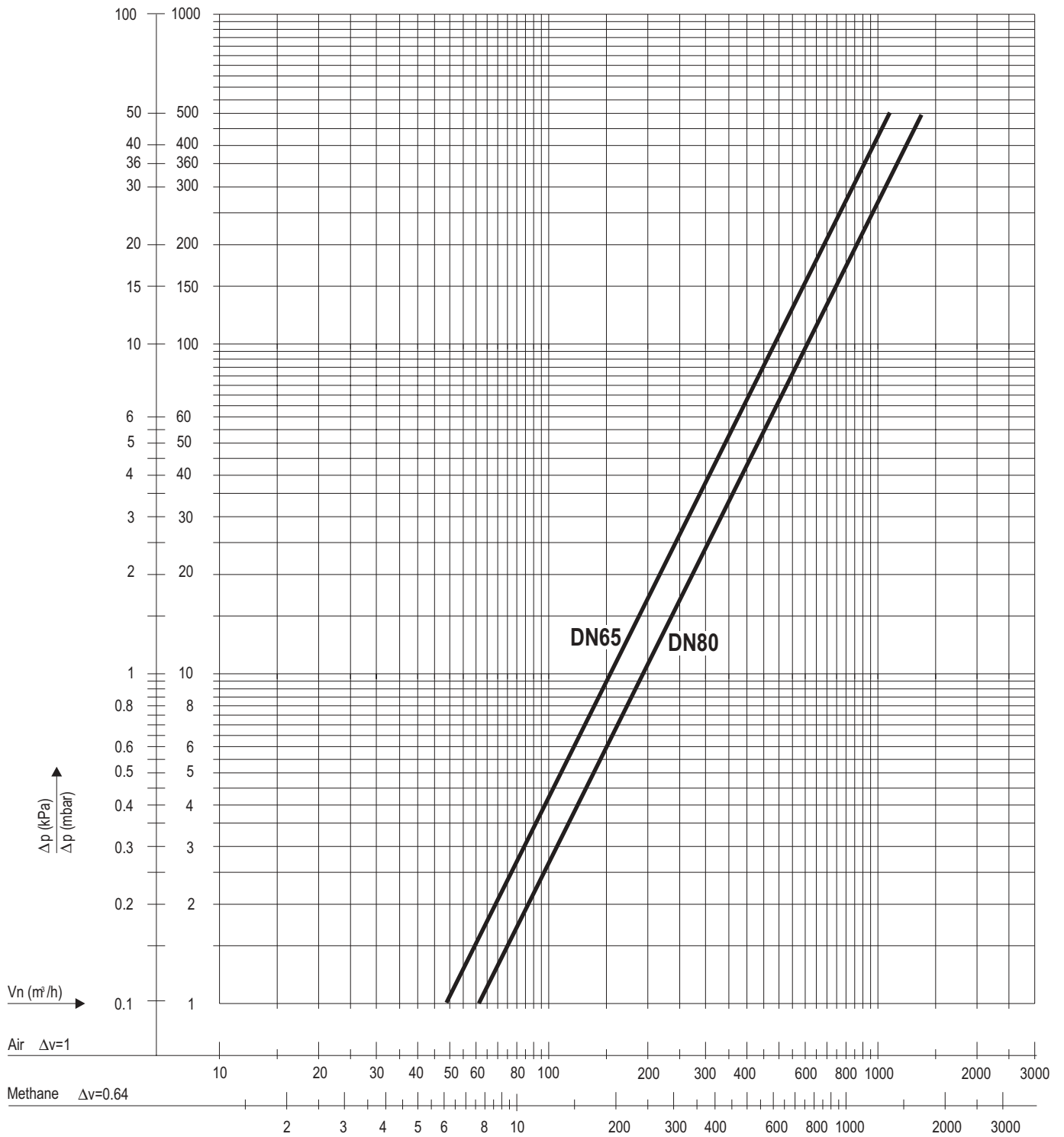


VQ400 COMBINATION GAS CONTROLS, DN20 - DN50



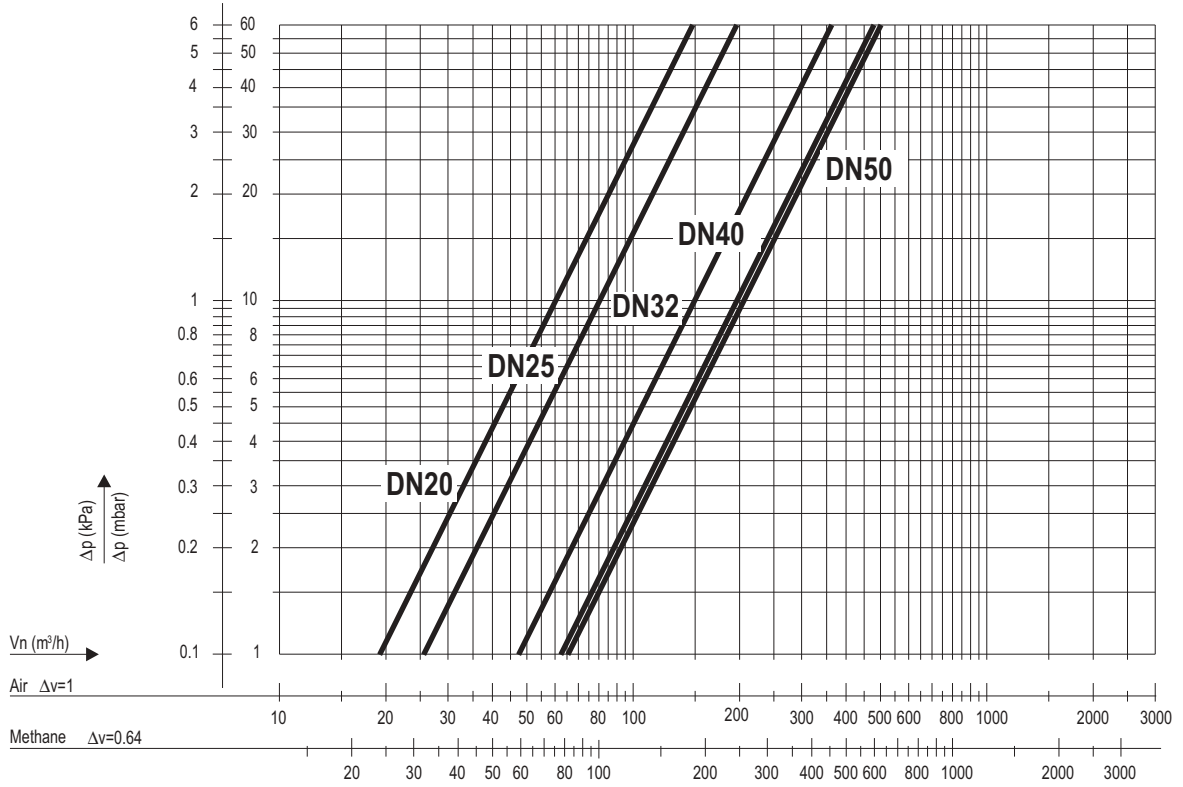
Capacity curves

VE400 COMBINATION GAS CONTROLS, DN65 AND DN100



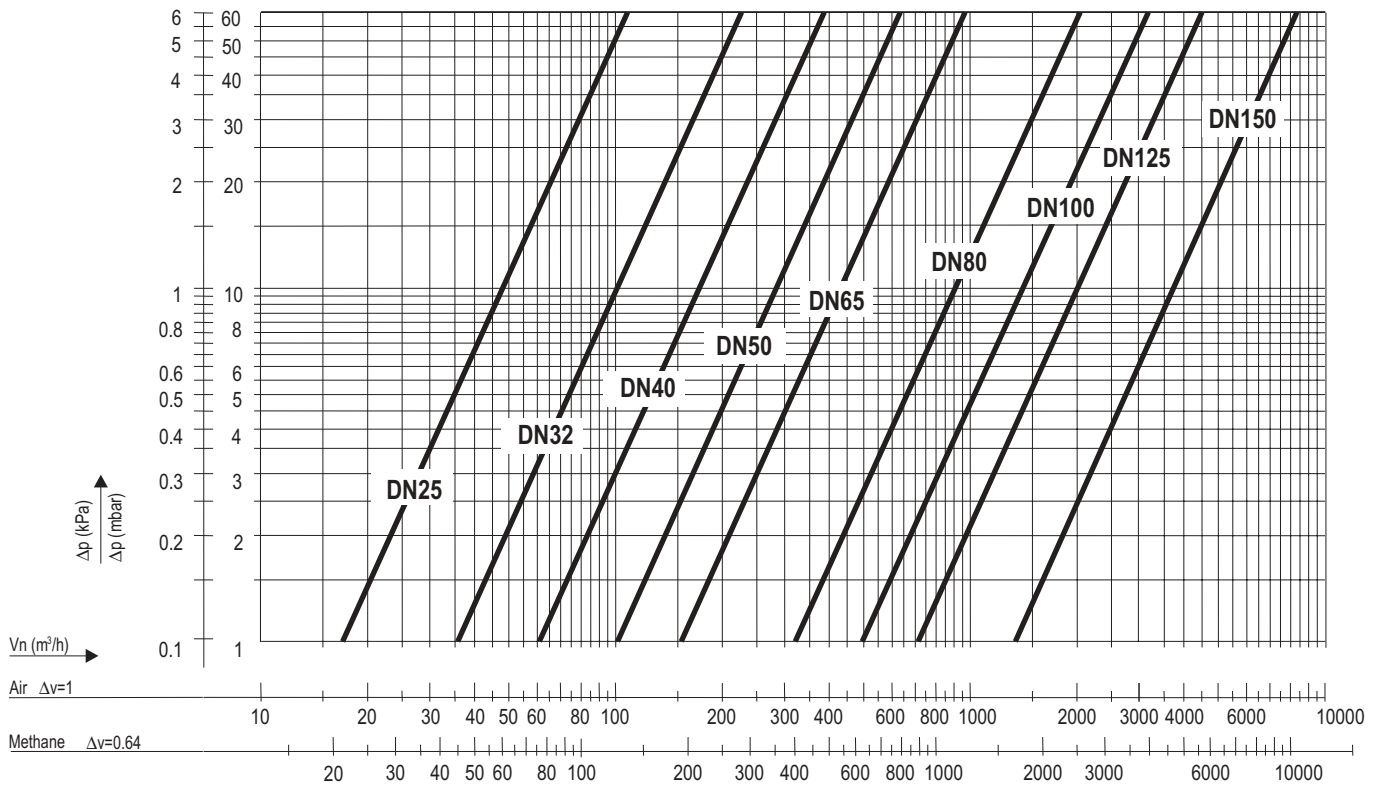
Capacity curves

VT4000 THROTTLE VALVES, DN20 - DN50

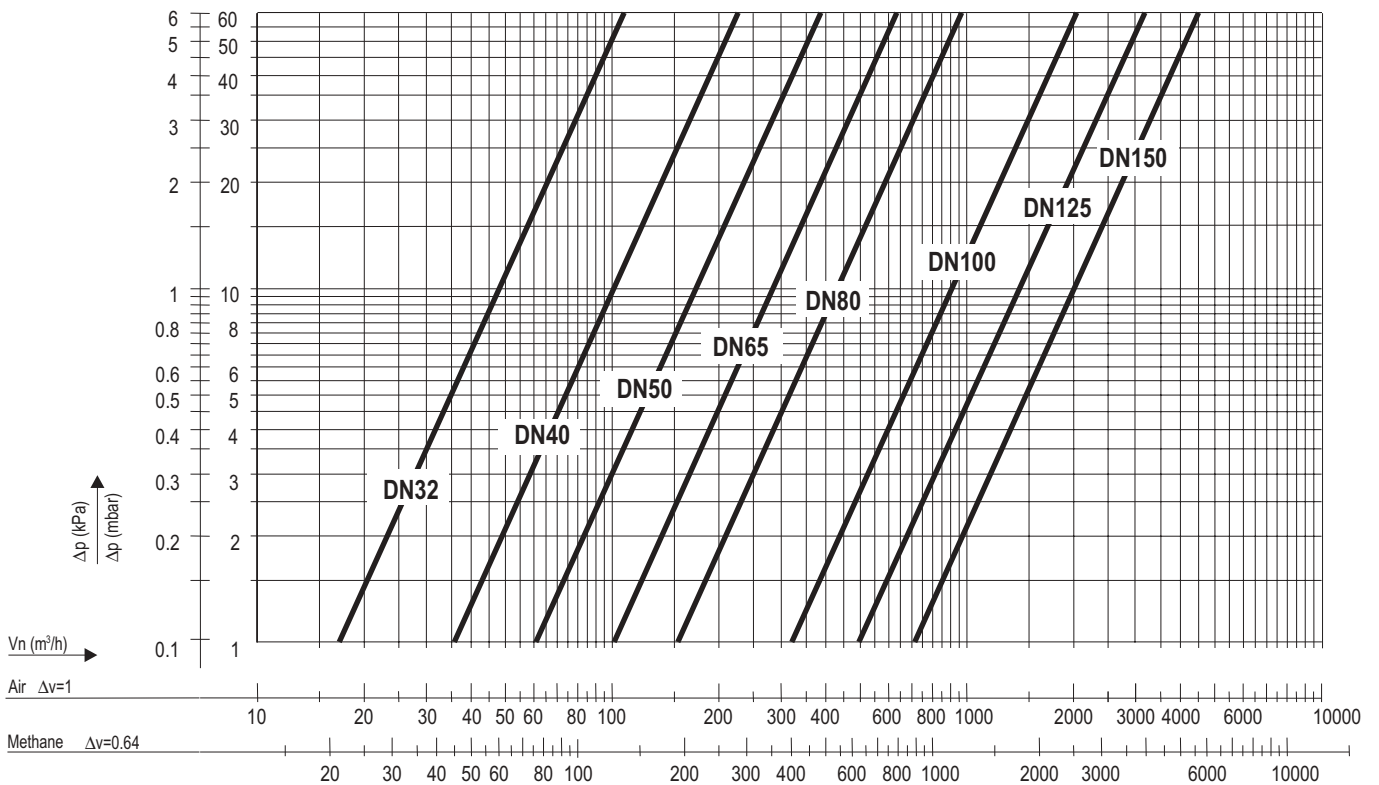


Capacity curves

VF5000A BUTTERFLY VALVES, DN25 - DN150

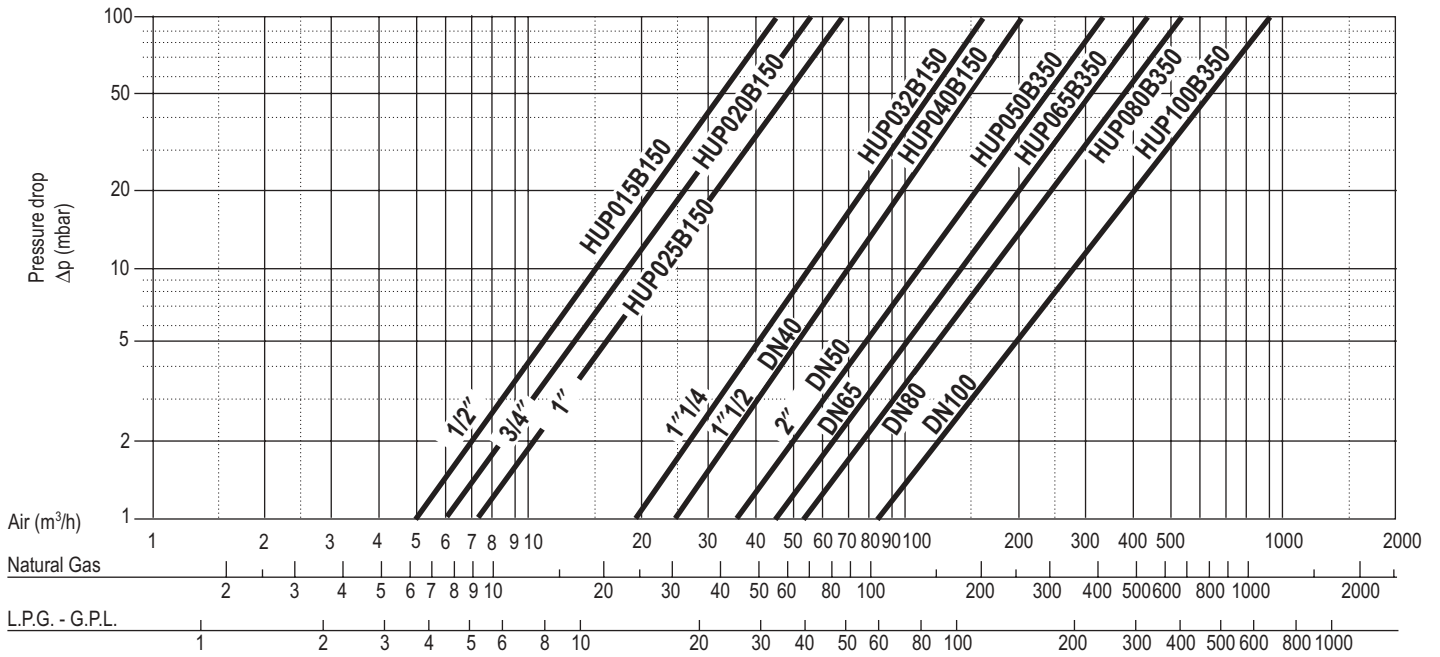


VF5000R BUTTERFLY VALVES, DN32 - DN150

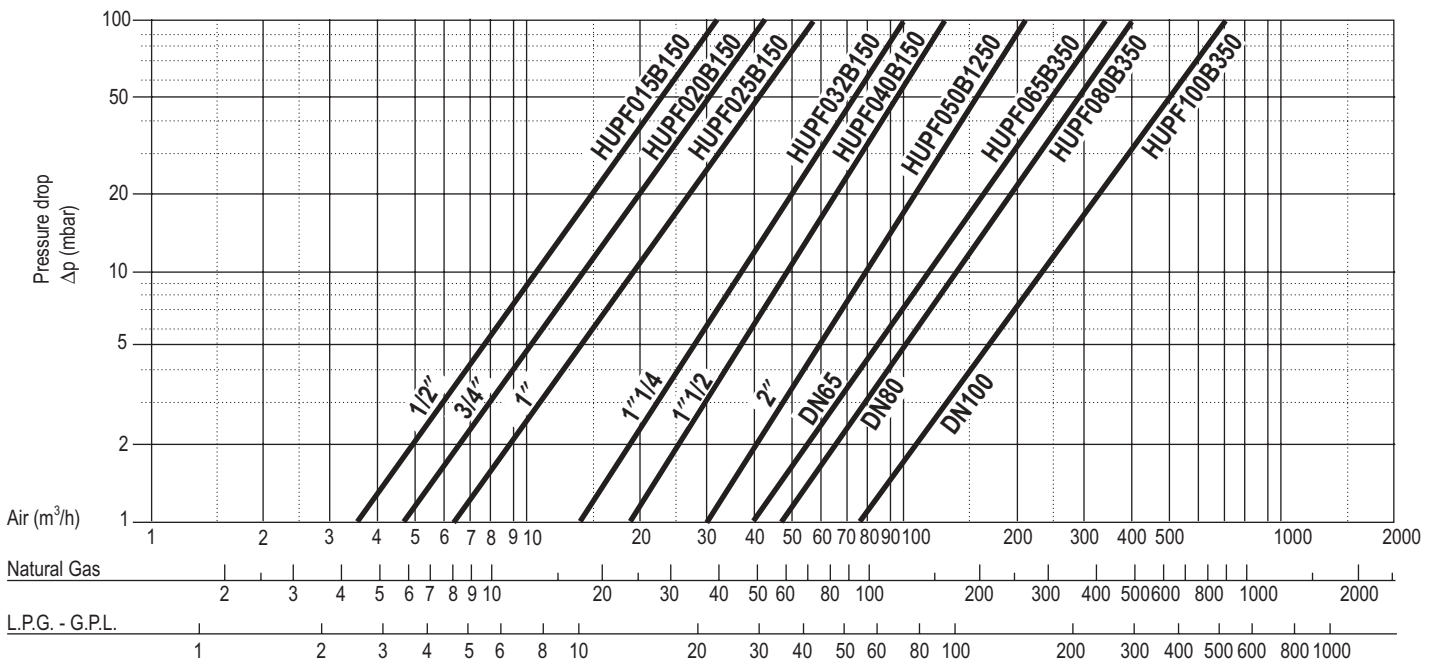


Capacity curves

HUP GAS PRESSURE REGULATORS WITHOUT FILTER, DN15 - DN100



HUPF GAS PRESSURE REGULATORS WITH INCORPORATED FILTER, DN15 - DN100



Capacity curves

HUF GAS FILTERS, DN15 - DN100

