

Tecofi 

VALVE MANUFACTURER - FRANCE

www.tecofi.fr

TECFLY BUTTERFLY VALVE

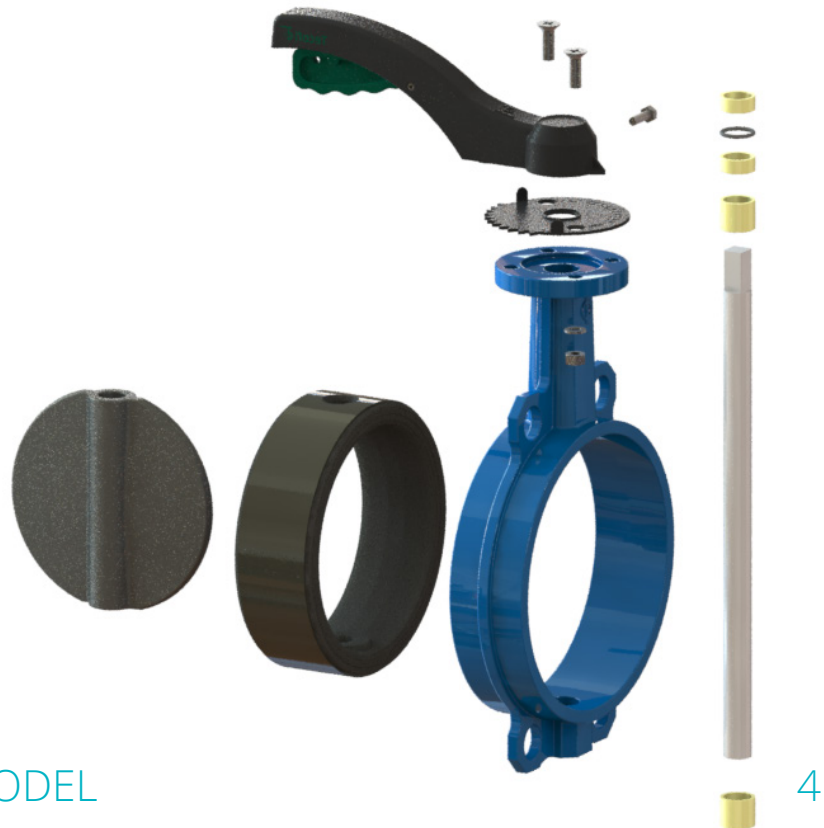
VPG4442 / VPG4448 / VPG4449

Technical passport



Concentric Butterfly Valve





1. TECFLY RANGE - VPG MODEL

- 1.1. Application
- 1.2. Mounting
- 1.3. Product approvals
- 1.4. Approvals and standards
- 1.5. Marking and coating
- 1.6. Sealing and dimensions of the liner
- 1.7. Technical characteristics

4
4
4
5
5
6
7
8

2. TECFLY - VPG MODEL BETWEEN FLANGES (WAFER)

- 2.1. Construction
- 2.2. Construction type
- 2.3. Dimension and mounting design

11
11
12

3. TECFLY - MODEL VPG THREADED TYPE (LUG)

- 3.1. Construction
- 3.2. Construction type
- 3.3. Dimensions and mounting design

14
14
15

4. CODING	17
5. MOUNTING FEATURES ACTUATORS	18
5.1 ISO 5211 mounting plate	18
5.2 Operating torque	18
5.3 Dimensions of ISO 5211 mounting plate	18
6. OPERATING ELEMENTS OF THE TECFLY VPG MODEL	19
6.1 Manual operating elements	19
Handle	19
Handle accessories	20
Manual gearbox	21
Accessories for manual gearbox	22
6.2 Auxiliary energy actuators	23
TECOFI pneumatic actuators	23
Double acting actuator - 1/4T	24
Single acting actuator - 1/4T	26
Accessories for pneumatic actuators	28
Electric actuators	30
1/4T 20/230V single-phase electric actuator	31
1/4T 20-230V single-phase actuator performance	33
Wiring diagram for 1/4T 20-230V single-phase actuator	33
TECOFI 1/4T electric actuator	34
TECOFI actuator performances	36
Wiring diagrams of TECOFI actuator	36
1/4T electric actuator PROFOX single-phase 230V - AUMA®	37
PROFOX single-phase 230V - AUMA® actuator performance	39
Wiring diagrams of PROFOX single-phase 230V - AUMA®	39
1/4T electric actuator AQ 230V (single-phase) or 400V (three-phase) - BERNARD CONTROLS®	40
Performances of AQ 230V (single-phase) or 400V (three-phase) actuator - BERNARD CONTROLS®	42
Wiring diagram for AQ 230 (single-phase) or 400 (three-phase) actuator - BERNARD CONTROLS®	43

TECFLY RANGE - VPG MODEL

TECFLY range VPG model

TECFLY range (VPG model) consists of two types of centered butterfly valve: between flanges (wafer) and threaded type (lug). Their main function is to shut off and/or regulate the flow of fluids. They are all equipped with a mounting plate for motorization according to ISO 5211, which facilitates the adaptation of various types of actuators, such as manual actuators (handle and gearbox) and auxiliary energy actuators (pneumatic and electric).



1.1. Application



Water treatment, wastewater treatment, irrigation, seawater desalination / reverse osmosis*



Bulk handling, pneumatic conveying, swimming pool and spa industry, mechanical engineering, pneumatic conveying, shipbuilding, fire protection, power generation



HVAC, cooling circuits



Biogas production, biorefinery*



Pulp and Cellulose Industries



Chemical treatment*, industrial processes*



Vinicultural



Mining



Sugar



Agri-food



Oil and gas industries*

* Consult us for the analysis of your condition of use.

Fluids

Water in closed circuits, cooling water, fire water, lightly contaminated water, sea water, diluted acids, strong acids, condensates, detergents, mineral oils, actuator lubrication oils, hydrocarbons, air, etc.

Contre argument

Not recommended for use on steam.

1.2. Mounting

Between flanges (wafer) : flange mounting according to EN 1092-1 and 2, ASME B16.5 class 150.

Threaded tyê (lug) : mounting with screws on flanges according to EN 1092-1 and 2.

Operating temperatures and pressures

Maximum operating pressure: 16 bar / 10 bar for threaded type (lug)
(6 bar when used on air network)

Operating temperatures:

VPG with Aluminum Bronze butterfly

• HEAT EPDM sleeve: -10°C / +130°C

VPG with Ductile Iron butterfly

• HEAT EPDM sleeve: -10°C / +130°C

• NBR sleeve: -10°C / +80°C

VPG with 316 Stainless Steel butterfly

• ACS EPDM sleeve: -10°C / +110°C

• FPM sleeve: -10°C / +170°C

TECFLY RANGE - VPG MODEL

1.3. Products approvals

Manufactured in accordance with the requirements of the European Directive 2014/68/EU «Pressure Equipment» module H. (Gases and Liquids of Group 1 and 2).



On request, ATEX compliance according to the requirements of the European Directive 2014/34/EU «Equipment and protective systems intended for use in potentially in potentially explosive atmospheres» as mechanical (non-electrical) equipment of category 2 or 3. (Gas and dust for zones 1, 2, 21 and 22).



sur demande

Compliance with EAC certification.



Compliance with the French drinking water approval ACS "Attestation de Conformité Sanitaire" under N° 22 ACC LY 475.



Compliance with the UK Drinking Water Approval Scheme WRAS "Water Regulations Advisory Scheme".



Drinking water approval compliance in Malaysia "National Water Services Commission".



1.4. Approvals and standards

(Table 1)

Type	Between flanges (wafer)	Threaded type (lug)		
DN	DN32/40-300	DN40-150	DN200-300	
ISO PN connection	PN10/16 // ASA150	PN10/16	PN10	PN16
Conception	Complies with the EN 593 standard.			
Face to face	NF EN 558 serie 20, ISO 5272 serie 20.			
Standards of connections	• ISO PN10/16 according to EN1092-1 and 2 • ASME B16.5 Classe 150 • GOST PN10/16	• ISO PN10/16 according to EN1092-1 and 2 • GOST PN10/16	• ISO PN10 according to EN1092-1 and 2 • GOST PN10	• ISO PN16 according to EN1092-1 and 2 • GOST PN16
Testing standards	Hydraulic tests carried out according to EN12266-1, DIN 3230 and ISO 5208.			
Test pressure	• Body: 24 bar • Seat: 17,6 bar	• Body: 24 bar • Seat: 17,6 bar	• Body: 15 bar • Seat: 11 bar	• Body: 24 bar • Seat: 17,6 bar

TECFLY RANGE - VPG MODEL

1.5. Marking and coating

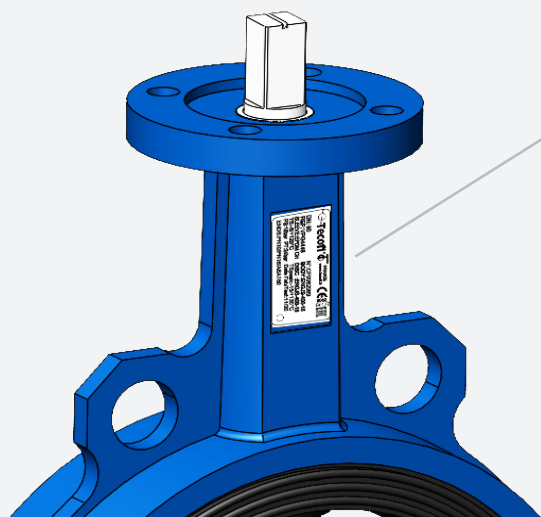
Marking plate according to the requirements of the CE Directive

The TECFLY model VPG, like all "pressure equipment" used in the European Union countries, is in conformity with the CE Directive.

A CE plate with the information required by the European Directives is applied to the valve. The valve must not be disassembled by the user. The marking must not be defaced, altered or even modified.

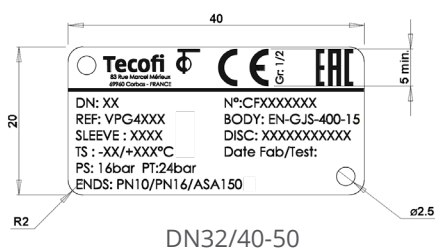
The presence of this marking means that the product complies with all the obligations incumbent on the manufacturer under the Directives applying to the product and requiring its use.

The user must ensure that the plate is permanently visible.

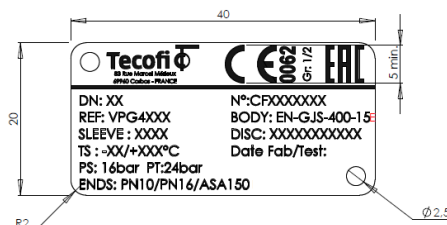


The marking plate made of Stainless Steel is riveted on the neck of the valve with the following indications:

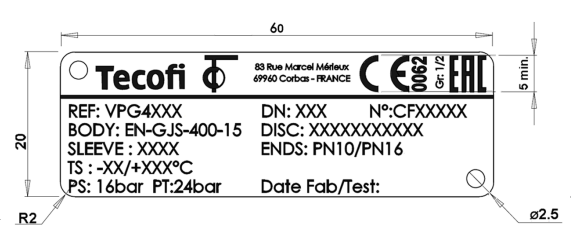
- Year of manufacture
- Group of fluids
- Nominal diameter
- Butterfly material
- Test conditions
- CE and PED compliance
- Product number (reference)
- Body material
- Sleeve material
- Serial identification number
- Operating pressure
- Operating temperature
- Connection



DN32/40-50



DN65-200



DN250-300

TECFLY RANGE - VPG MODEL

Electrostatic epoxy powder coating RAL 5015, thickness 150 µm.

The body of the TECFLY model VPG is coated with a high quality thermosetting epoxy powder paint in accordance with the GSK process requirements:

- density: 1.30-1.50 g/cm³ ISO 8130-2
- gel time at 200°C - ISO 8130-6

The aim is to provide good corrosion protection on all TECFLY butterfly valves.

The powder coating is applied in one layer by electrostatic spraying on the surface of the valves previously heated.

Coating procedure

- 1 Pre-cleaning: the surface is cleaned of oil, grease, salt and other impurities.
- 2 Sandblasting: molding sand, rust and sharp edges are removed with angular steel shot. Graphite is removed from the blasting material in accordance with NACE No. 2 / SSPC-10 / ISO Sa 2.5. The inking profile (Ø 60 µm) is stored for a maximum of 4 hours before preheating.
- 3 Preheating: a uniform temperature is ensured in the component avoiding any oxidation.
- 4 Coating application: immediately after heating, the coating process is carried out without loss of part temperature. The coating is carried out in the shortest possible time in a single pass without interruption.
- 5 Curing of the coating: the curing is ensured by the heat contained in the object. To verify the complete hardening, a test with methyl isobutyl ketone (MIBK) is performed. This product is put in contact with the surface of the object for a period of 30 seconds, the hardening is confirmed if no change visible to the naked eye on the coating is observed.

1.6. Sealing and dimension of the sleeve

- ✓ Reinforced with a thick layer of resin.
- ✓ Perfect upstream/downstream sealing.
- ✓ Low coefficient of friction in contact with the disc resulting in a considerably reduced operating force (low torque).
- ✓ Grooved sleeve for a better contact on the seal surface while valve installation.



Available
sleeve
materials

EPDM CH (Ethylene-Propylene-Diene-Monomere) : excellent resistance to outdoor aging (UV, weathering, ozone), very good compatibility with water, including sea water and diluted acids.

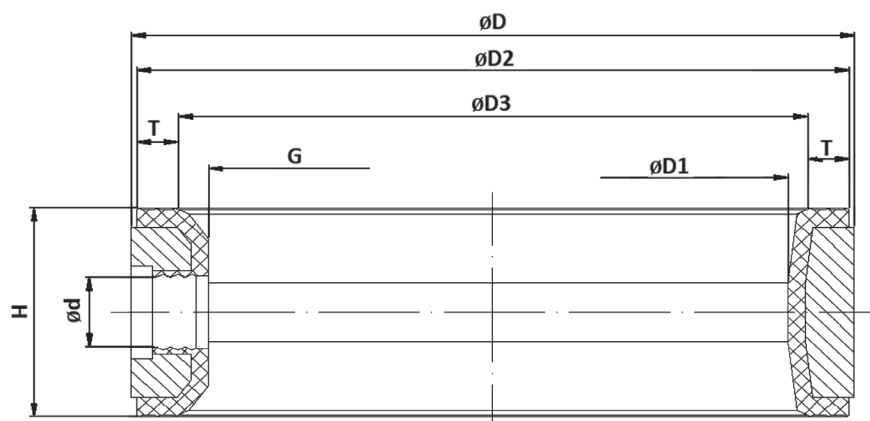
EPDM ACS (Ethylene-Propylene-Diene-Monomere) : complies with the use for drinking water.

Nitril (NBR) : Generic name given to butadiene-acrylonitril copolymers which are synthetic elastomers. They have excellent mechanical properties and a very good resistance to oils and petroleum derivatives. However, their prolonged exposure to outside atmospheres is not recommended.

FKM (Viton®) : synthetic fluorocarbon elastomer with very good thermal and chemical resistance (mineral oils and greases, household gases, fuels, solvents, acids). It is highly resistant to UV, ozone and outdoor conditions.

TECFLY RANGE - VPG MODEL

Dimensions of the sleeve



(Table 2)

Dimensions of the sleeve									
DN		H	Ød	ØD	ØD1	ØD2	ØD3	G	T
mm	inch								
32/40	1"1/4 / 1"1/2	36	11.80	70	41.5	66	45	37.2	10.5
50	2"	46.1	11.80	76.30	51	73.5	53.5	45	10
65	2"1/2	49.1	11.80	93	62.8	89	67	57.9	11
80	3"	49	11.80	106	77.3	102	82	73.8	10
100	4"	55.3	15.00	135	102.5	132.5	106.9	96.6	12.8
125	5"	58.8	18.15	159	121.8	156.8	126	115.3	5.4
150	6"	59.6	18.15	188.4	154.2	185	157	146.3	14
200	8"	64.1	21.30	238.2	200.9	234	207	193.7	13.5
250	10"	71.8	27.70	292.4	248.9	288	256	241	16
300	12"	81.5	30.90	299.9	299.9	340	306	290	17

1.7. Technical characteristics

Terms of service

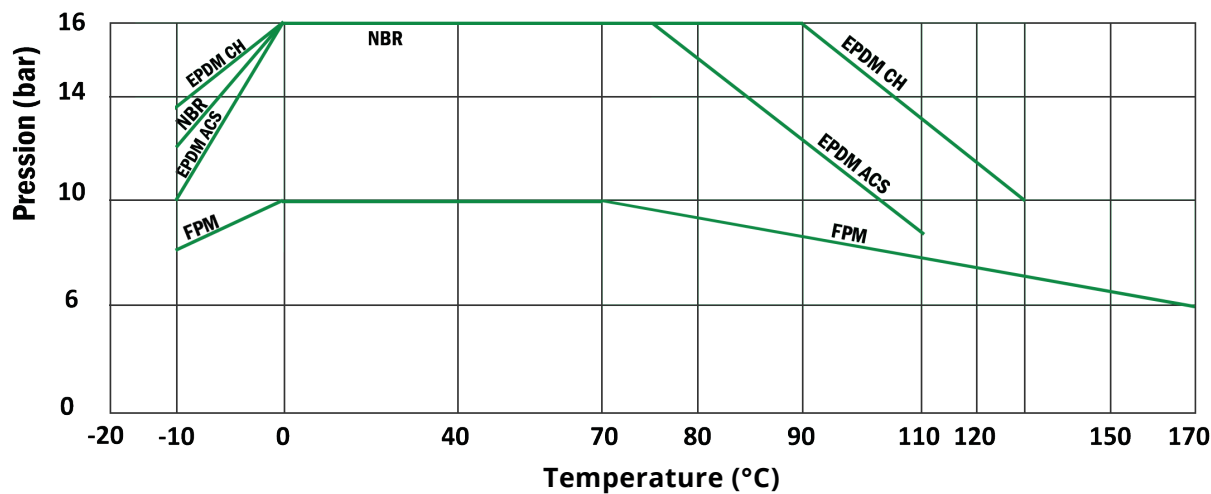
(Table 3)

TECFLY - VPG model	Smooth ears (wafer) / Threaded ears (lug)			
Sleeve material	EPDM CH	EPDM ACS	NBR	FPM
Minimum operating T°	-10°C	-10° C	-10°C	-10°C
Maximum operating T°	+130°C	+110°C	+80°C	+170°C
For more details, see the pressure/temperature diagram				
Operating pressure	TECFLY VPG model between flanges (wafer) DN40 to DN300 16 bar, except VITON sleeve 10 bar			
	TECFLY VPG model threaded type (lug) DN40 to DN150 16 bar, except VITON sleeve 10 bar			
	TECFLY VPG model threaded type (lug) PN10 from DN200 to DN300 10 bar			
	TECFLY VPG model threaded type (lug) PN16 from DN200 to DN300 16 bar, except VITON sleeve			
Use in vacuum	0.2 bar absolute pressure (approx. -0.8 bar relative pressure)*			
Maxi. speed (eau)	1,8 - 3 m/s according to working conditions			

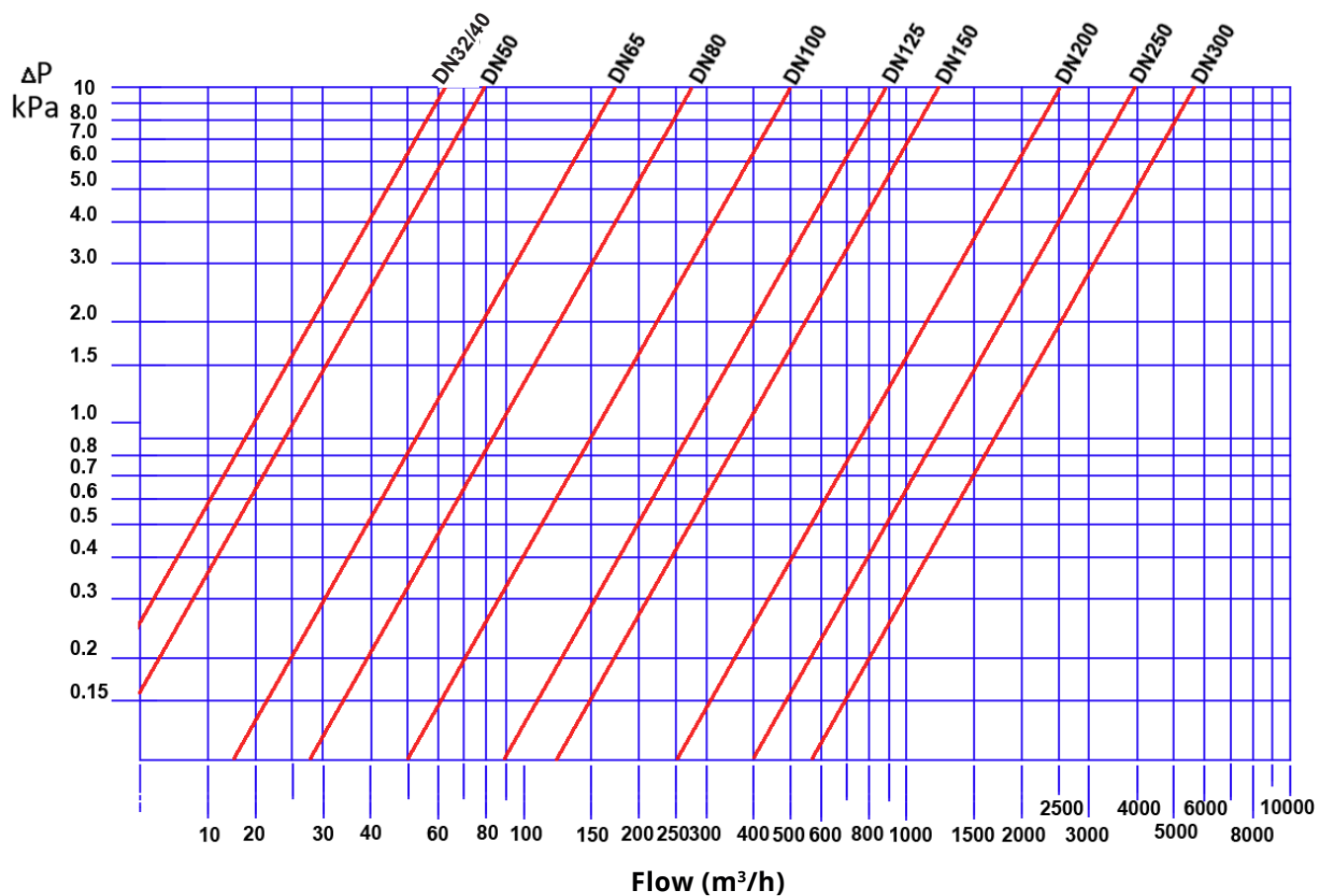
* Tests carried out under vacuum with testing of valves in the open position for a minimum of 10 minutes.

TECFLY RANGE - VPG MODEL

Pressure/temperature diagram



Pressure loss diagram

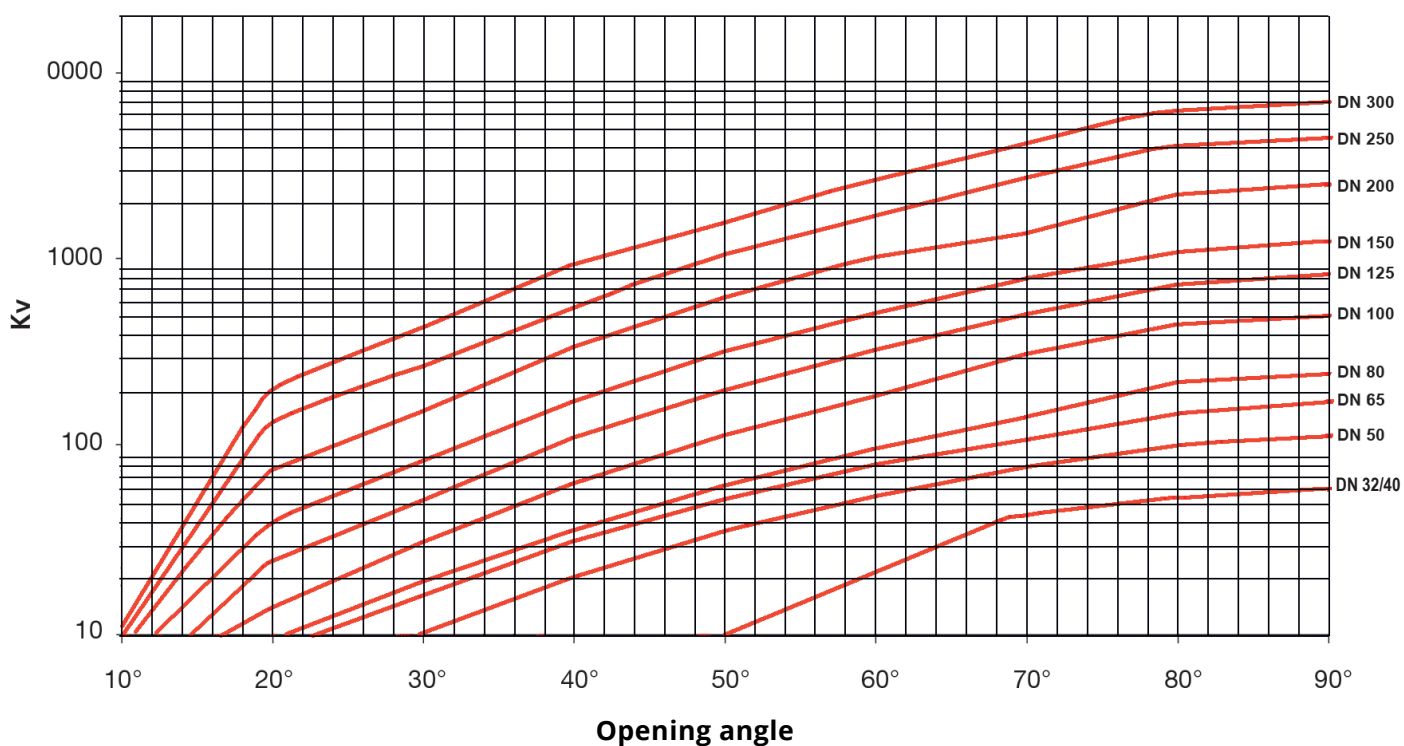


TECFLY RANGE - VPG MODEL

Flow coefficient

(Table 4)

DN		Kv								
mm	inch	10°	20°	30°	40°	50°	60°	70°	80°	90°
32/40	1"1/4 / 1"1/2	0,0	0,0	0,1	1,0	10,0	20,0	45,0	55,0	60,0
50	2"	0,0	2,6	10,3	20,5	38,5	54,7	77,0	106,9	115,4
65	2"1/2	0,1	5,1	17,1	31,6	55,6	83,8	123	174	188
80	3"	0,2	7,7	19,4	33,3	59,9	99,2	156	235	258
100	4"	0,4	14,5	30,8	66,7	119	197	311	467	513
125	5"	0,7	24,8	52,2	114	203	335	530	795	874
150	6"	1,7	38,5	81,2	175	313	517	819	1229	1350
200	8"	2,6	76,1	161	349	622	1028	1627	2440	2681
250	10"	3,4	129	274	593	1058	1750	2770	4154	4566
300	12"	4,3	200	423	917	1634	2704	4279	6418	7054



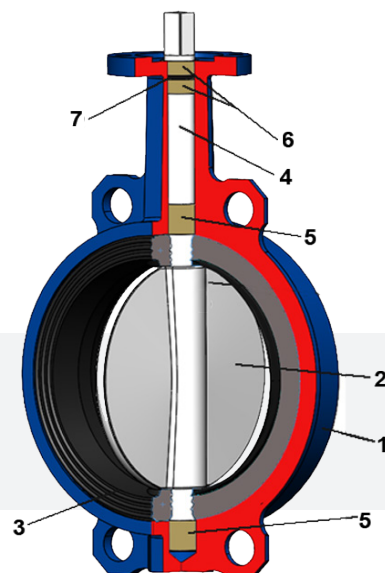
TECFLY - VPG MODEL BETWEEN FLANGES (WAFER)

TECFLY VPG MODEL BETWEEN FLANGES (WAFER)

VPG4442-00 / VPG4448-00 / VPG4449-00*

The TECFLY VPG model between flanges (wafer) allows the connection according to the standards EN 1092-1 and 2 ISO PN10, ISO PN16, ASME B16.5 class 150 and GOST PN10/16.

*Coding p.17

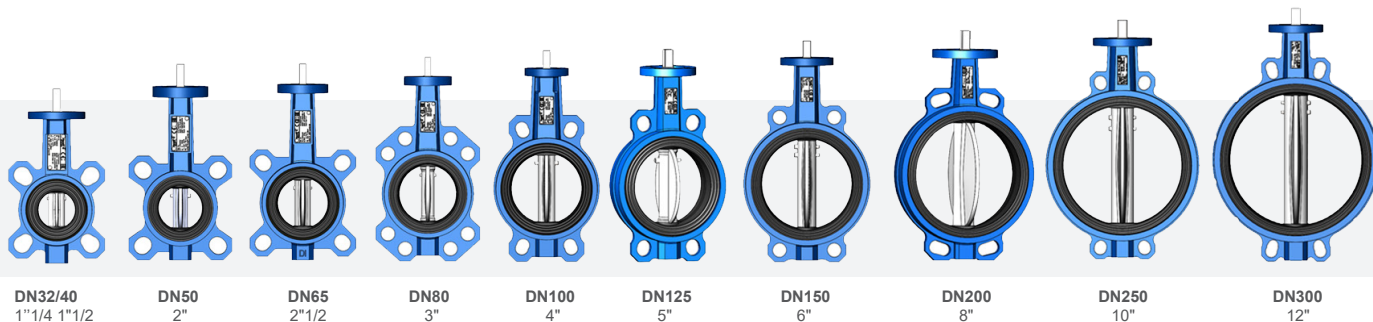


2.1. Construction

(Table 5)

Rep.	Quantity	Designation	Material	DIN	ASTM	BS
1	1	Body	Ductile Iron EN-GJS-400-15	GGG40	A536 65-45-12	EN-JS1030
2	1	Butterfly	Ductile Iron EN-GJS-400-15 + Nickel	GGG40	A536 65-45-12	EN-JS1030
			Stainless Steel 316	G-X6CrNiMo 18 10	A182-F316	CF8M
			Aluminum Bronze			
3	1	Sleeve	EPDM CH on Ductile Iron or Aluminum Bronze butterfly as standard (stainless steel butterfly on request)			
			EPDM ACS on Stainless Steel butterfly as standard			
			Nitril (NBR) on Ductile Iron butterfly (or Inox on request)			
			FPM (type Viton®) on Stainless Steel as standard			
4	1	Stem	Stainless Steel 420	1.4021	AISI420	X20Cr13
5	2	Bushing	PTFE			
6	2	Bushing	PTFE			
7	1	O-ring seal	Nitril			NBR

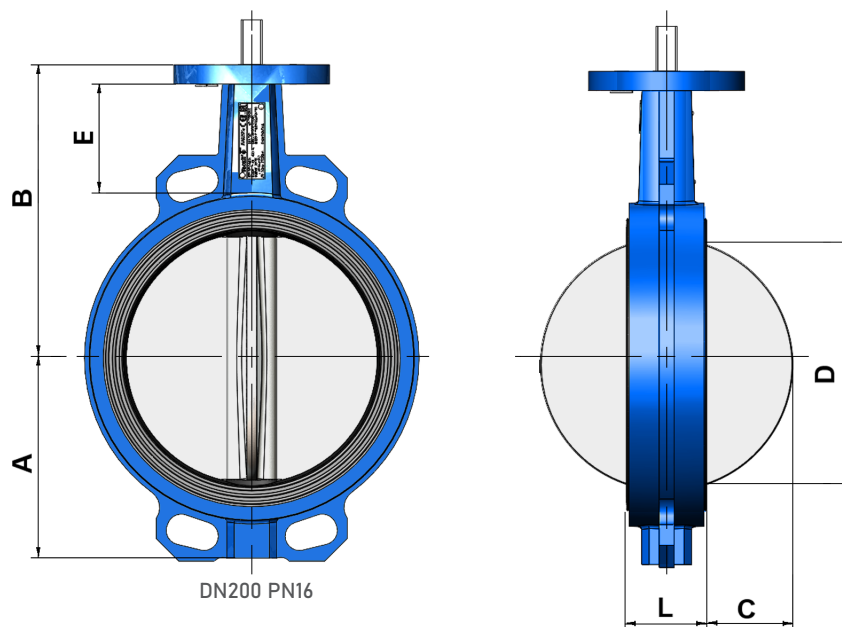
2.2. Construction types



TECFLY - VPG MODEL BETWEEN FLANGES (WAFER)

2.3. Dimensions and mounting design

VPG4442-00 / VPG4448-00 / VPG4449-00



(Table 6)

DN		PN10 / PN16 / ASME B16.5 classe 150						
		A	B	C	D	E	L	Weight* (kg)
mm	inch							VPG4442-00/VPG4448-00/VPG4449-00
32/40	1"1/4 / 1"1/2	60	120	5	29	62	33	1,27
50	2"	60	140	5	31	84.5	43	1,82
65	2"1/2	72	150	10	46	87.5	45	1,99
80	3"	81	158	17	64	87	45	2,67
100	4"	108	176	26.5	91	90.5	52	3,86
125	5"	121	190	34.75	111	86.5	56	5,73
150	6"	131	211	49.5	144	96	56	6,79
200	8"	163	235	71.5	194	90	60	11,48
250	10"	198	267	92.7	242	93	68	17,88
300	12"	231	305	112.5	292	102	78	27,98

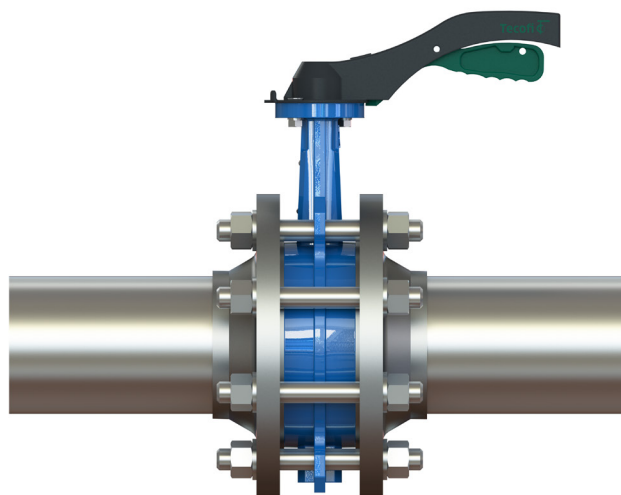
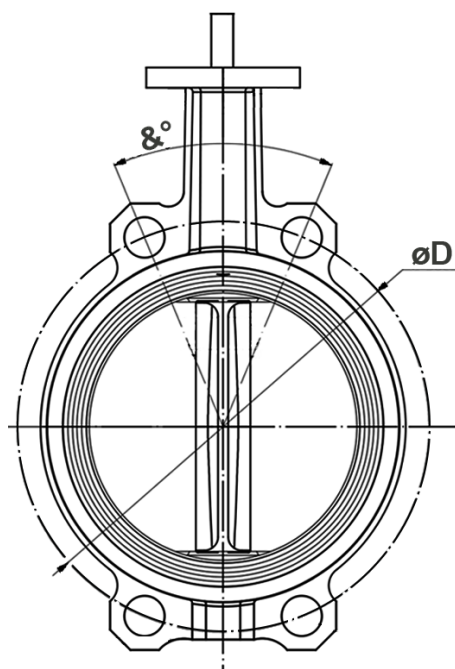
* Weight of bare shaft valves (without actuator) given as an indication.

⚠ Take into account the dimensions of the throttle valve clearance (C and D) in case of installation on PVC/HDPE pipe.

TECFLY - VPG MODEL BETWEEN FLANGES (WAFER)

Connection dimensions DN32/40-300

VPG4442-00 / VPG4448-00 / VPG4449-00



(Table 7)

DN		PN10			PN16			ASME B16.5 classe 150 GOST PN10/16		
mm	inch	ØK	&°	Tie rods*	ØD	&°	Tie rods*	ØD	&°	Tie rods*
32/40	1"1/4 / 1"1/2	110	90	4-M16	110	90	4-M16	98.4	90	4-M14
50	2"	125	90	4-M16	125	90	4-M16	120.5	90	4-M16
65	2"1/2	145	90	4-M16	145	90	4-M16	139.7	90	4-M16
80	3"	160	45	8-M16	160	45	8-M16	152.4	90	4-M16
100	4"	180	45	8-M16	180	45	8-M16	190.5	45	8-M16
125	5"	210	45	8-M16	210	45	8-M16	215.9	45	8-M20
150	6"	240	45	8-M20	240	45	8-M20	241.3	45	8-M20
200	8"	295	30	8-M20	295	45	12-M20	298.4	30	12-M20
250	10"	350	30	12-M20	355	30	12-M20	362	30	12-M24
300	12"	400	30	12-M20	410	30	12-M20	431.8	30	12-M24

* Dimensions of tie rods to be used for flange mounting.

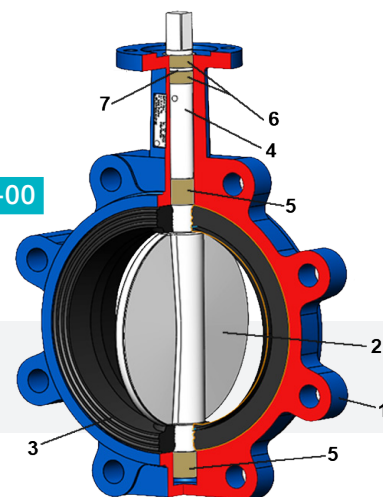
TECFLY - VPG MODEL THREADED TYPE (LUG)

TECFLY MODEL VPG THREADED TYPE (LUG)

VP4642-00 / VP4602-00 VP4648-00 / VP4608-00 VP4649-00 / VP4609-00

3.1. Construction

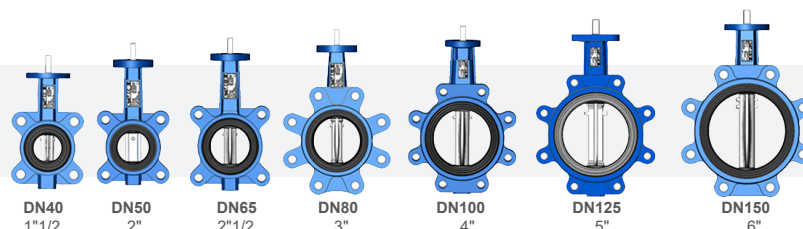
Threaded lug type allowing screw mounting.
End of line mounting possible with a counter flange.



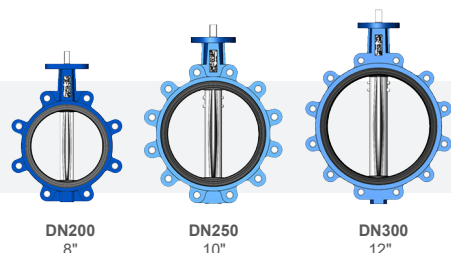
(Tableau 8)

Rep.	Quantity	Designation	Material	DIN	ASTM	BS
1	1	Body	Ductile Iron EN-GJS-400-15	GGG40	A536 65-45-12	EN-JS1030
2	1	Butterfly	Ductile Iron EN-GJS-400-15 + Nickel	GGG40	A536 65-45-12	EN-JS1030
			Stainless Steel 316	G-X6CrNiMo 18 10	A182-F316	CF8M
			Aluminum Bronze			
3	1	Manchette	EPDM CH on Ductile Iron or Aluminum Bronze butterfly as standard (Stainless Steel butterfly on request)			
			EPDM ACS on Stainless Steel butterfly as standard			
			Nitril (NBR) on Ductile Iron butterfly (Stainless Steel butterfly on request)			
			FPM (type Viton®) on Stainless Steel butterfly as standard			
4	1	Stem	Inox 420	1.4021	AISI 420	X20Cr13
5	2	Bushing	PTFE			
6	2	Bushing	PTFE			
7	1	O ring	Nitril (NBR)			

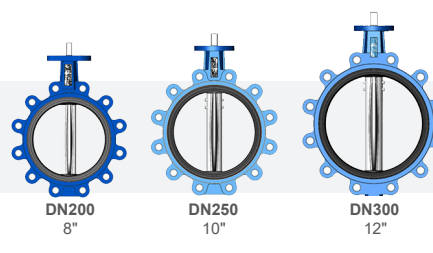
3.2. Construction type



PN10/16



PN10



PN16

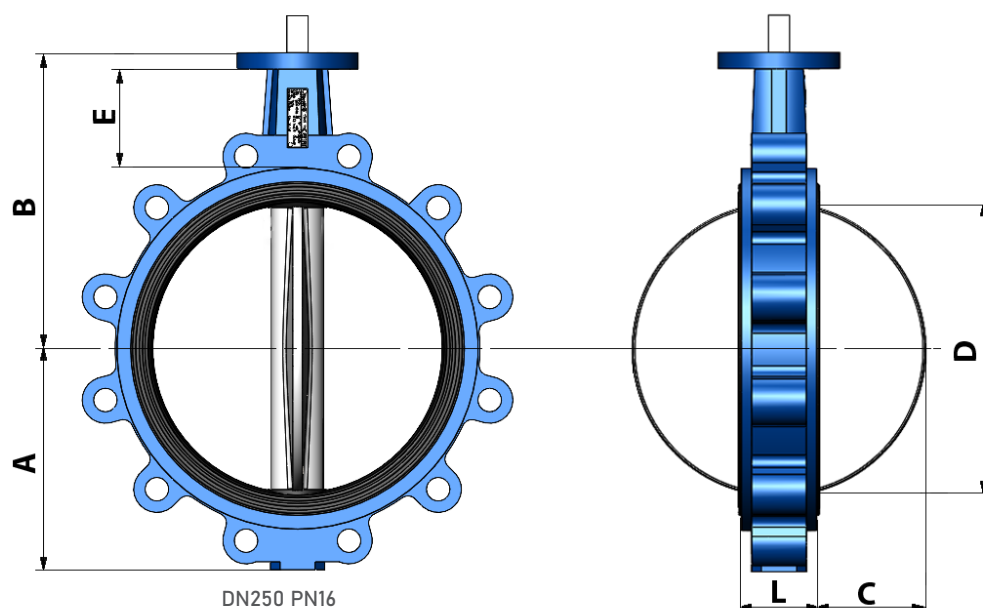
TECFLY - VPG MODEL THREADED TYPE (LUG)

VPG4642-00 / VPG4602-00

VPG4648-00 / VPG4608-00

VPG4649-00 / VPG4609-00

3.3. Dimensions and mounting design



(Table 9)

DN		A	B	C	D	E	L	Weight* (kg)	
mm	inch							VPG4642-00 VPG4648-00 VPG4649-00	VPG4602-00 VPG4608-00 VPG4609-00
40	1"1/2	60	120	5	29	62	33	1,65	-
50	2"	60	140	5	31	84.5	43	2,19	-
65	2"1/2	72.5	150	10	46	87.5	45	2,69	-
80	3"	91	156	17	64	87	45	3,85	-
100	4"	108	175	26.5	91	90.5	52	4,9	-
125	5"	121	190	34.75	111	86.5	54.5	7,1	-
150	6"	131	211	49.5	144	96	56	9,03	-
200	8"	163	235	71.5	194	90	60	15,16	14.9
250	10"	198	265	92.7	242	93	65.6	22,82	22,65
300	12"	231	305	112.5	292	102	77	34,48	34,48



Take into account the dimensions of the throttle valve clearance (C and D) in case of installation on PVC/HDPE pipe.

* Weight of bare shaft valves (without actuator) given as an indication

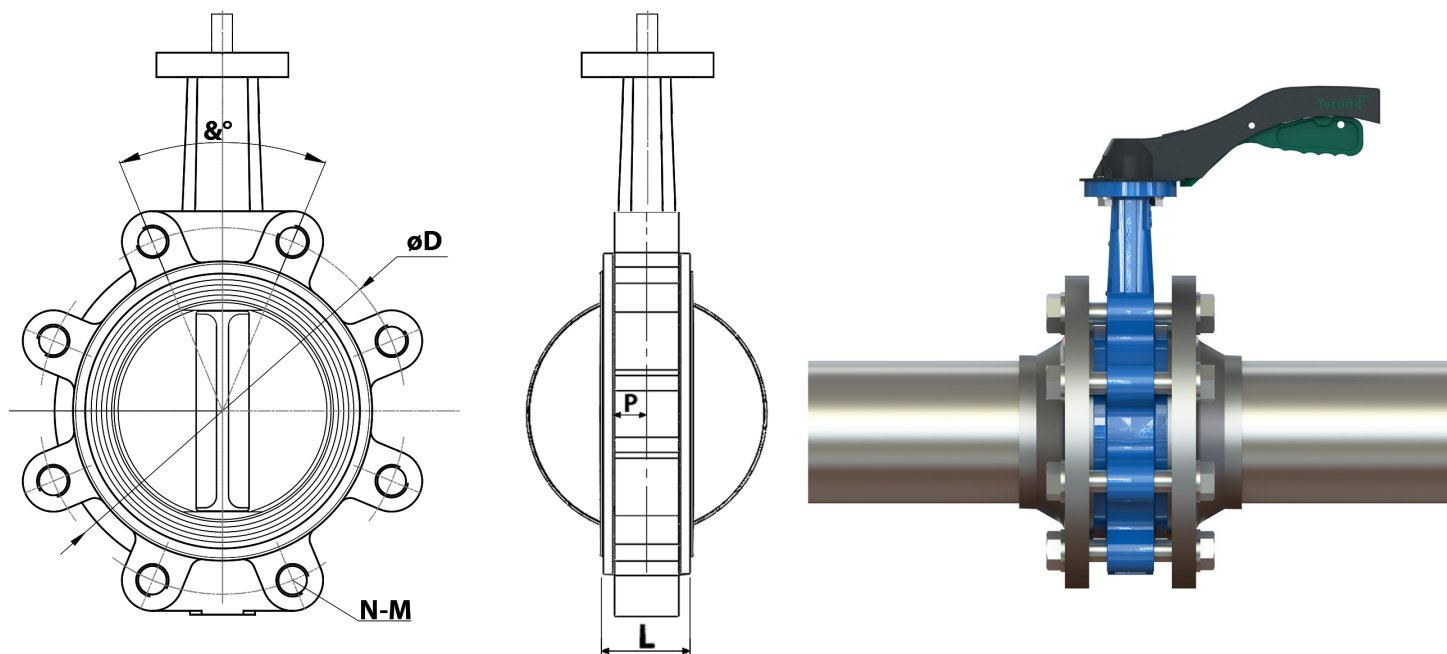
TECFLY - VPG MODEL THREADED TYPE (LUG)

VPG4642-00 / VPG4602-00

VPG4648-00 / VPG4608-00

VPG4649-00 / VPG4609-00

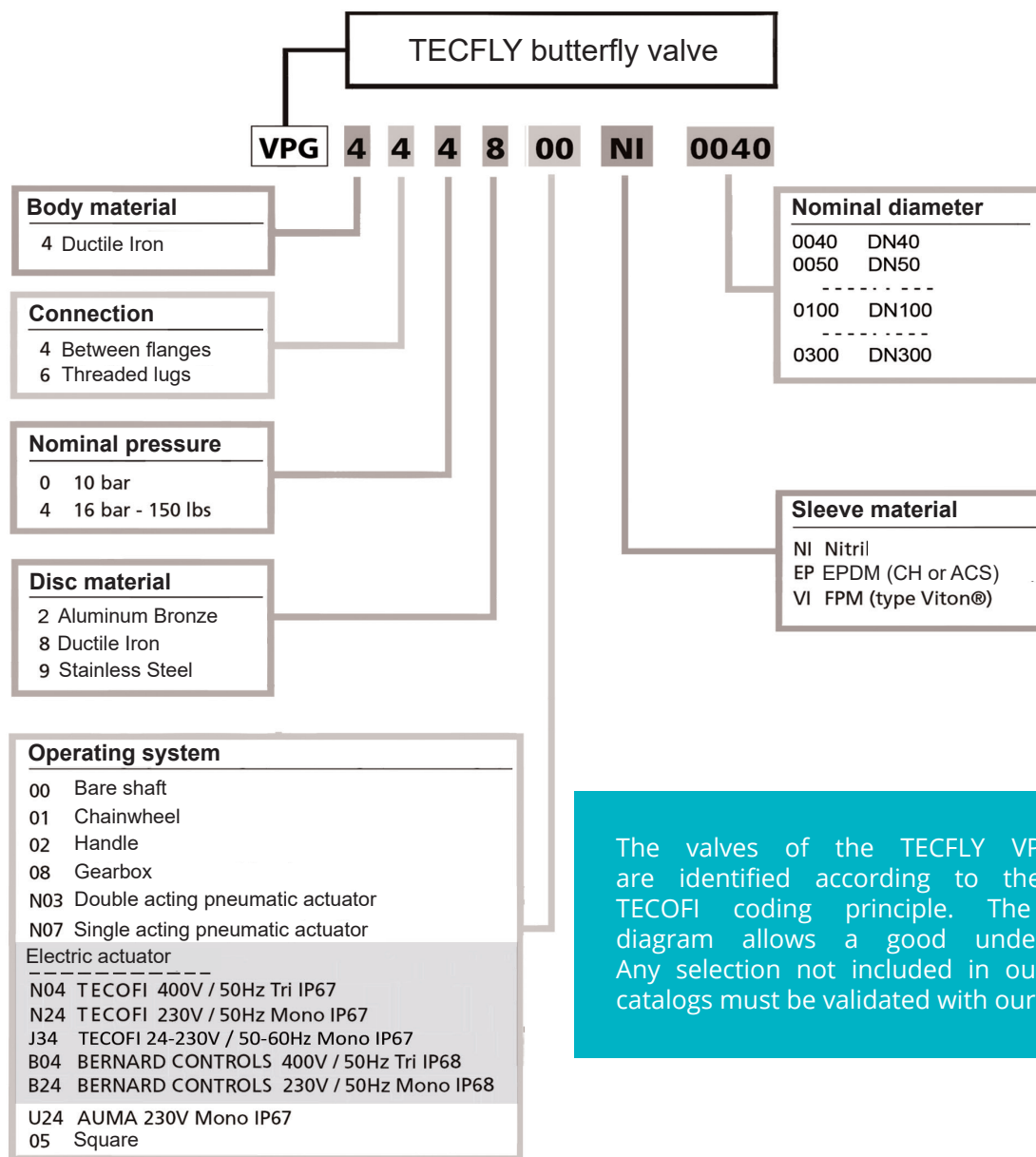
Connection dimensions DN40-300



(Table 10)

DN		L	P		ØD	&°	N-M	Screw (number)	ØD	&°	N-M	Screw (number)
mm	inch		PN10	PN16	PN10				PN16			
40	1"1/2	33	13.5	13.5	110	90	4-M16	8	110	90	4-M16	8
50	2"	43	16.5	16.5	125	90	4-M16	8	125	90	4-M16	8
65	2"1/2	45	16.5	16.5	145	90	4-M16	8	145	90	4-M16	8
80	3"	45	16.5	16.5	160	45	8-M16	16	160	45	8-M16	16
100	4"	52	16.5	16.5	180	45	8-M16	16	180	45	8-M16	16
125	5"	54.5	18.5	18.5	210	45	8-M16	16	210	45	8-M16	16
150	6"	56	20.5	20.5	240	45	8-M20	16	240	45	8-M20	16
200	8"	60	22.5	23	295	45	8-M20	16	295	30	12-M20	24
250	10"	65.6	25	25	350	30	12-M20	24	355	30	12-M20	24
300	12"	77	25	28	400	30	12-M20	24	410	30	12-M20	24

CODING



The valves of the TECFLY VPG range are identified according to the general TECOFI coding principle. The present diagram allows a good understanding. Any selection not included in our product catalogs must be validated with our services.

4.1. Coding examples

VPG4448-00EP0065 TECFLY model VPG between flanges (wafer), body Ductile Iron, PN16 flange mounting with tie rods, maximum working pressure 16 bar, Ductile Iron butterfly, bare shaft, EPDM heat seal, DN65.

VPG4448-02NI0125 TECFLY model VPG between flanges (wafer) Ductile Iron, PN16 flange mounting with tie rods, maximum working pressure 16 bar, Ductile Iron butterfly, handle operated, Nitril sleeve, DN125.

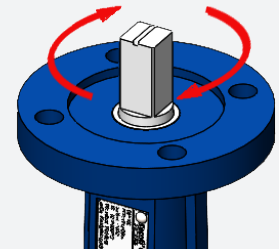
VPG4649-00VI0050 TECFLY model VPG threaded type (lug), Ductile Iron, PN16 flange mounting, maximum working pressure 10 bar, Stainless Steel butterfly, bare shaft, FPM liner (Viton® type), DN50.

VPG4609-02EP0200 TECFLY model VPG threaded type (lug), Ductile Iron, PN10 flange mounting, maximum working pressure 10 bar, Stainless Steel butterfly, operated by handle, ACS EPDM sleeve, DN200.

MOUNTING FEATURES ACTUATORS

5.1 ISO 5211 mounting plate

TECFLY Model VPG butterfly valves have identical wafer and lug connection on each DN. They meet the ISO 5211 standard, which facilitates the adaptation of manual actuators (handle and handwheel) and auxiliary energy actuators, such as pneumatic actuators and electric actuators.



5.2 Operating torque

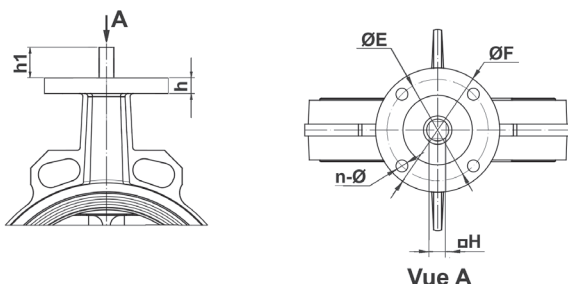
(Table 11)

DN		Differential pressure					
mm	inch	ΔP 0-5 bar		ΔP 10 bar		ΔP 16 bar	
		Measured torque (Nm)	Torque with safety coef. (Nm)	Measured torque (Nm)	Torque with safety coef. (Nm)	Measured torque (Nm)	Torque with safety coef. (Nm)
32/40	1"1/4 / 1"1/2	10	13	12	15,6	12	15,6
50	2"	13	16,9	14	18,2	16	20,8
65	2"1/2	14	18,2	16	20,8	18	23,4
80	3"	21	27,3	22	28,6	25	32,5
100	4"	35	45,5	37	48,1	42	54,6
125	5"	55	71,5	60	78	65	84,5
150	6"	85	110,5	95	123,5	110	143
200	8"	160	208	180	234	200	260
250	10"	250	325	290	377	330	429
300	12"	370	481	430	559	500	650

When sizing the actuator, it is advisable to use the torque values with safety factor according to the selected differential pressure range. The safety torques in the table have been calculated with a 30% increase of the actual torques measured on the valves.

5.3 Dimensions of ISO 5211 mounting plate

(Table 12)

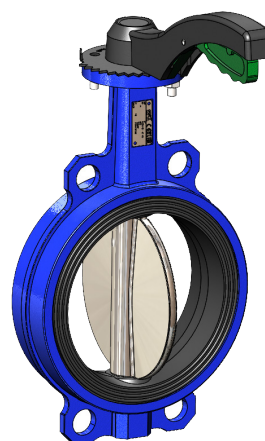
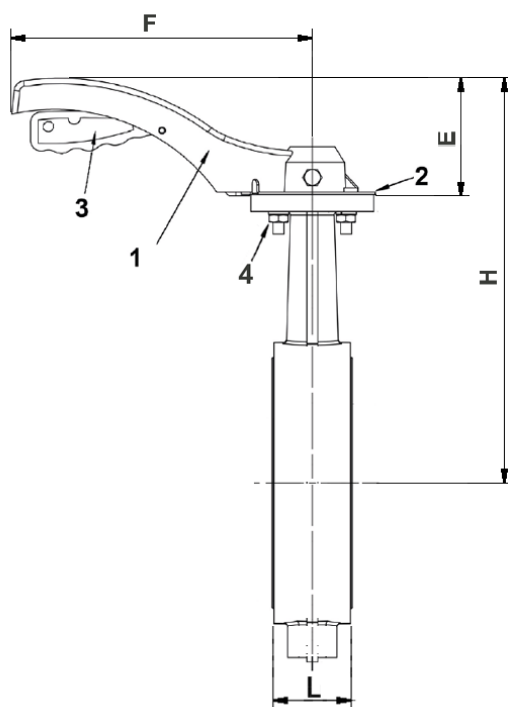


DN		ISO 5211 mounting plate	n-Ø	h1	h	ØE	ØF	p-H
mm	inch							
40	1"1/2	F05	4-Ø7	26	8	50	65	9
50	2"	F05	4-Ø7	26	12	50	65	9
65	2"1/2	F05	4-Ø7	26	11	50	65	9
80	3"	F05	4-Ø7	26	12	50	65	9
100	4"	F05	4-Ø7	26	11	50	65	11
125	5"	F07	4-Ø10	28	12	70	90	14
150	6"	F07	4-Ø10	28	12	70	90	14
200	8"	F10	4-Ø12	38	15.5	102	125	17
250	10"	F10	4-Ø12	38	16	102	125	22

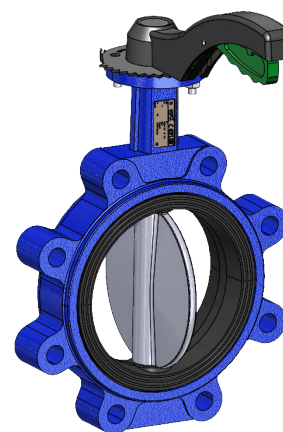
OPERATING ELEMENTS OF TECFLY VPG MODEL

6.1. Manual operating elements

Lockable handle



VPG4442-02
VPG4448-02
VPG4449-02



VPG4642-02 / VPG4602-02
VPG4648-02 / VPG4608-02
VPG4649-02 / VPG4609-02

Rep.	Description	Material	Coating
1	Handle	Aluminium (DN40-150) Ductile Iron (DN200-300)	Black epoxy paint thickness 70µm
2	Trigger	Plastic ABS	Epoxy paint RAL6024
3	Notched sector	Steel	Black epoxy paint thickness 70µm
4	Screw	Stainless Steel A2	

(Table 13)

Dimensions		DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300
		1"1.2	2"	2"1/2	3"	4"	5"	6"	8"	10"	12"
Handle reference		VPGPOIGN040080				VPGPOIGN100	VPGPOIGN125150		VPGPOIGN200	VPGPOIGN250	VPGPOIGN300
E		68	68	68	68	68	85	85	76	76	91
F		175	175	175	175	175	220	220	353	353	500
L		33	43	45	45	52	54,5	56	60	66	77
H		195	218	228	234	253	288	309	328	358	414
Weight (kg)	VPG4442-02*										
	VPG4448-02*	1,55	2,10	2,27	2,95	4,16	6,18	7,24	13,92	20,52	31,50
	VPG4449-02*	1,56	2,11	2,32	2,92	3,98	5,95	7,06	13,78	20,97	30,50
	VPG4642-02										
	VPG4648-02	1,90	2,46	2,97	3,97	5,06	7,43	9,42	17,55	25,29	38
	VPG4649-02										
	VPG4602-02	-	-	-	-	-	-	-	16,60	25,46	38
	VPG4608-02										
	VPG4609-02										

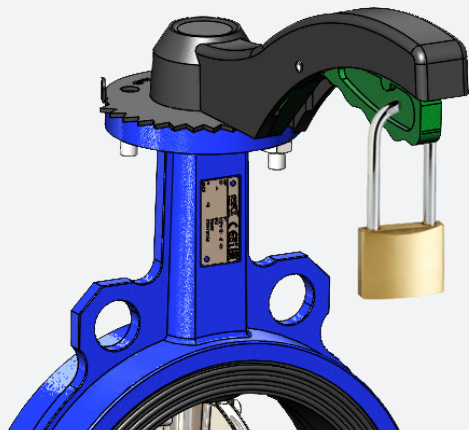
The manual operating forces of TECFLY VPG model with handle comply with the provisions of standard EN 12570.

Weights given as an indication

* Compatible with DN32 flange mounting for models between flanges (wafer).

OPERATING ELEMENTS OF TECFLY - VPG MODEL

Handle lockout

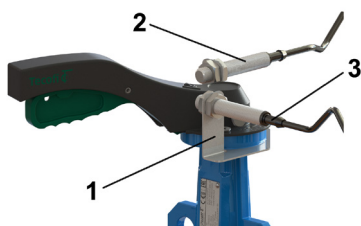


The padlock allows the handle to be locked in each of the 10 adjustment positions provided by the notched sector. The diameter of the padlock handle must be less than 5 mm for DN40-100 and 6 mm for DN125-300.



Handle accessories

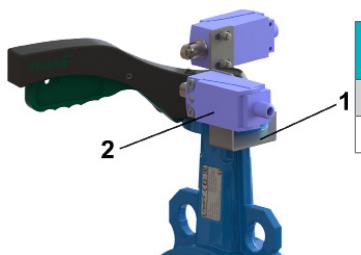
Inductive sensor kit XS612



Rep.	Description	Material	Q-ty
1	Support plate	Stainless steel 304	1
2	Inductive sensor	XS612	2
3	Pre-wired connector	Female M12 Length 2 m	2

DN		Ref
mm	inch	
DN32/40-100	1"1/4 / 1"1/2 - 4"	300140021
DN125-150	5" - 6"	300140022
DN200-300	8" - 12"	300160075

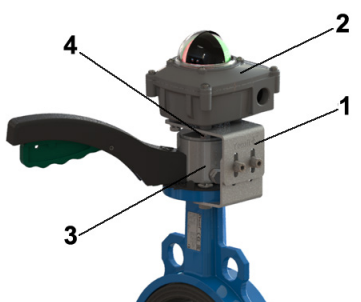
Mechanical limit switches kit XCKP 102



Rep.	Description	Material	Q-ty
1	Support plate	Inox 304	1
2	Contact	XCKP102	2

DN		Ref
mm	inch	
DN32/40-100	1"1/4 / 1"1/2 - 4"	300180076
DN125-150	5" - 6"	300180077
DN200-300	8" - 12"	300180078

Limit switch box kit



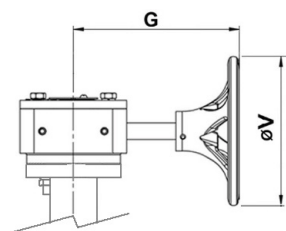
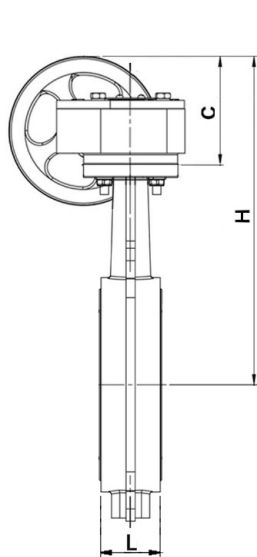
Rep.	Description	Material	Q-ty
1	Support plate	Stainless Steel 304	1
2	Limit switch IP68	Cast aluminium	1
3	Tube	Stainless Steel 304	1
4	Parts	Stainless Steel 304	1

DN		Ref
mm	inch	
DN32/40-100	1"1/4 / 1"1/2 - 4"	300220068
DN125-150	5" - 6"	300220069
DN200-300	8" - 12"	300220070

Autres types de contacts sur demande.

OPERATING ELEMENTS OF TECFLY - VPG MODEL

Manual gearbox



VPG4442-08

VPG4448-08

VPG4449-08



VPG4642-08 / VPG4602-08

VPG4648-08 / VPG4608-08

VPG4649-08 / VPG4609-08

Rep.	Description	Material	Coating
1	Gearbox	Ductile Iron	Black epoxy paint thickness 70µm
2	Handwheel	Iron	Black epoxy paint thickness 70µm
3	Stem	Stainlss Steel 410	
4	Screw	Stainless Steel A2	

(Table 14)

Dimensions		DN32/40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300
		1"1/4 / 1"1/2	2"	2"1/2	3"	4"	5"	6"	8"	10"	12"
Gearbox ref.		VGPREDUCT-F05					VGPREDUCT-F07		VGPREDUCT-F10		
G		160	160	160	160	160	160	160	232	232	232
C		112	116	115	116	115	115	115	208	208	208
ØV		150	150	150	150	150	150	150	300	300	300
L		33	43	45	45	52	54,5	56	60	65,60	77
H		232	244	255	264	280	291	315	428	459	496
Weight (kg)	VPG4442-08* VPG4448-08*	4,40	5,30	5,25	5,60	7,40	8,50	9,60	21,20	25,70	38,30
	VPG4449-08*	4,39	5,29	5,20	5,57	7,22	8,27	9,42	21,06	24,70	38,20
	VPG4642-08 VPG4648-08 VPG4649-08	5,47	6,05	6,25	7,04	9,16	10,88	12,65	25,49	34,73	52,30
	VPG4602-08 VPG4608-08 VPG4609-08	-	-	-	-	-	-	-	25,50	34,90	52,30

Dark black epoxy coated gearbox and steering wheel.

Weights given as an indication.

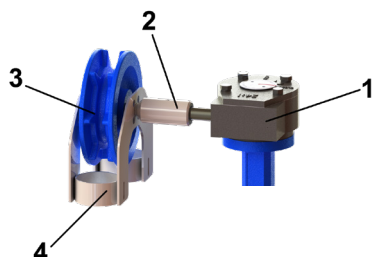
* Compatible for mounting between DN32 flanges for models between flanges (wafer).

OPERATING ELEMENTS OF TECFLY - VPG MODEL

Accessories for manual gearbox

Chainwheel kit

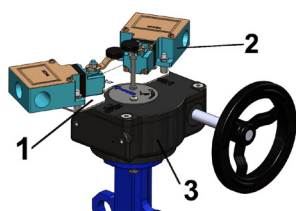
The chainwheel kit consists of a galvanized or stainless steel chainwheel and a chain guide. The length of the chain for maneuvering is adaptable to the needs of the site.



Rep.	Description	Material	Q-ty
1	TECOFI gearbox		1
2	Extension	Stainless Steel 304	1
3	Handwheel	Ductile Iron	1
4	Chain guide	Stainless Steel 304	1

DN		Ref
mm	inch	
DN32/40-100	1"1/4 / 1"1/2 - 4"	300190225
DN125-150	5" - 6"	300190226
DN200-300	8" - 12"	300190227

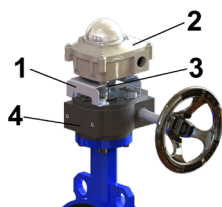
Mechanical limit switches kit XCKM 115



Rep.	Description	Material	Q-ty
1	Support plate	Stainless Steel 304	1
2	Contact	XCKM115	2
3	TECOFI gearbox		

DN		Ref
mm	inch	
DN32/40-150	1"1/4 / 1"1/2" - 6"	300180351
DN200-300	8" - 12"	300180352

Limit switch kit



Rep.	Description	Material	Q-ty
1	Support	Stainless Steel 304	1
2	Limit switch box IP68	Cast aluminum	1
3	Parts	Stainless Steel 304	1
4	TECOFI gearbox		1

DN		Ref
mm	inch	
DN32/40-150	1"1/4 / 1"1/2" - 6"	300190253
DN200-300	8" - 12"	300190254

Autres types de contact sur demande.

OPERATING ELEMENTS OF TECFLY - VPG MODEL

6.2. Auxiliary energy actuators

TECOFI pneumatic actuators

The pneumatic actuator is used to automatically operate valves using compressed air. Movement is achieved by powering one side of the actuator.

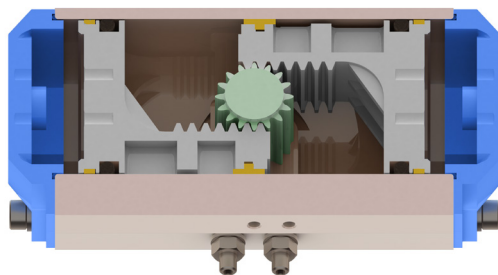
Depending on your application, you will need to determine whether you need a single-acting or double-acting actuator. The difference between the two technologies is how the actuator is able to return to its original position. The use of a spring allows the single-acting actuator to return to its original position. The movement of a double-acting actuator in either direction is controlled by the pressure applied alternately to each side of the pistons.



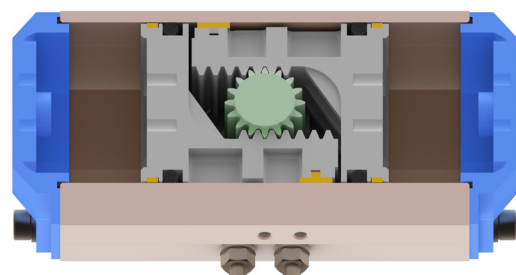
Actuators recommended for a DELTA P pressure of 16 bar (for motor air 6 bar), if the operating pressure in the pipe is different, contact the sales department for an optimized quotation. Possibility to optimize the choice of the actuator according to your conditions of use (supply pressure) and differential pressure.

- ✓ Ideal for ATEX zones (compressed air: limits the risk of explosion)
- ✓ Fast execution movement
- ✓ Ensures smooth speed control
- ✓ Large number of maneuvering cycles assured

Double acting actuator - 1/4T



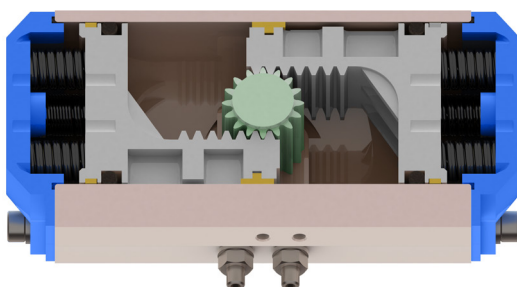
Position 1



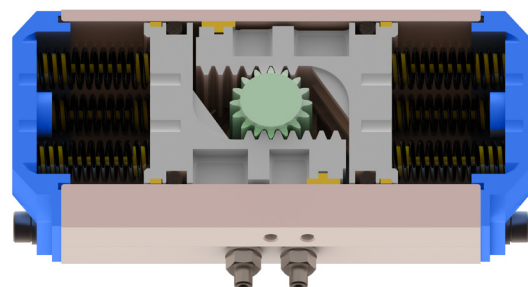
Position 2

Single acting actuator - 1/4T

For the same torque, the single acting actuator will be oversized compared to the double acting actuator. The force generated by the air on the piston must be sufficient to counteract the force exerted by the springs.



Opened position

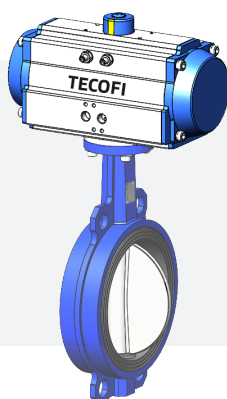
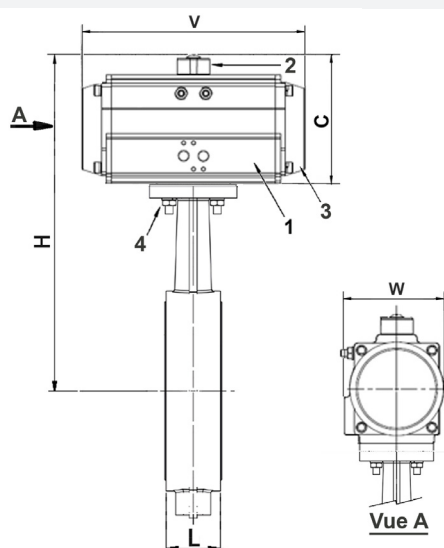


Closed position

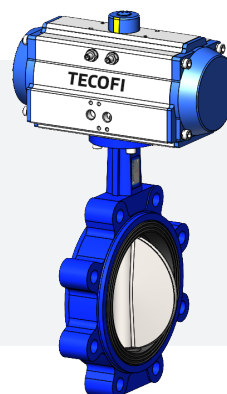
OPERATING ELEMENTS OF TECFLY - VPG MODEL

Double acting actuator - 1/4T

VDI/VDE 3845 Namur mounting plate for limit switches and visual position indicator.



VPG4442-N03
VPG4448-N03
VPG4449-N03



VPG4642-N03 / VPG4602-N03
VPG4648-N03 / VPG4608-N03
VPG4649-N03 / VPG4609-N03

Rep.	Description	Material	Coating
1	Actuator	Aluminum alloy extrusion	Hard anodized treatment
2	Position indicator	Plastic ABS	
3	Flask	Cast Aluminum	Epoxy paint thickness 120µm
4	Screw	Stainless Steel A2	

(Table 15)

Dimensions		DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300
		1"1.2	2"	2"1/2	3"	4"	5"	6"	8"	10"	12"
Actuator ref.		TDA-052	TDA-052	TDA-052	TDA-063	TDA-075	TDA-083	TDA-92	TDA-125	TDA-140	TDA-160
C		92	92	92	108	120	129	137	185	202	227
V		146	146	146	169	186	210	264	302	398	456
W		67,50	67,50	67,50	80,50	92	97	103	134,50	142	161
L		33	43	45	45	52	54,50	56	60	65,60	77
H		212	220	232	256	285	304	336	405	453	515
Weight (kg)	VPG4442-N03*	2,65	3,20	3,37	4,70	6,56	8,86	11,39	20,38	31,13	48,12
	VPG4448-N03*	2,66	3,21	3,42	4,67	6,38	8,63	11,21	20,24	31,58	47,12
	VPG4449-N03*	2,66	3,21	3,42	4,67	6,38	8,63	11,21	20,24	31,58	47,12
	VPG4642-N03 VPG4648-N03 VPG4649-N03	3	3,56	4,07	5,72	7,46	10,11	13,57	24,01	35,90	54,62
VPG4602-N03 VPG4608-N03 VPG4609-N03		-	-	-	-	-	-	-	23,06	36,07	54,62

The actuator recommendation corresponds to a maximum ΔP of 16 bar with an air supply of 6 bar.
Weights given as an indication.

* Compatible with DN32 flange mounting for models between flanges (wafer).

OPERATING ELEMENTS OF TECFLY - VPG MODEL

Operating time and air consumption of double acting pneumatic actuators

(Table 16)

Code actionneur	Air consumption (liter)		Operating time (seconde)	
	Opening (0°- 90°)	Closing (90°- 0°)	Opening (0°- 90°)	Closing (90°- 0°)
TDA-052	0,12	0,16	0,6	0,53
TDA-063	0,21	0,23	0,66	0,58
TDA-075	0,30	0,34	0,72	0,64
TDA-083	0,43	0,47	0,83	0,73
TDA-105	0,95	0,88	1,35	1,3
TDA-125	1,60	1,40	2,40	1,79
TDA-140	2,50	2,20	2,50	2,10
TDA-160	3,70	3,20	3,93	2,60

Data for **dry lubricated air** under normal operating conditions.

Double acting pneumatic actuator kit references

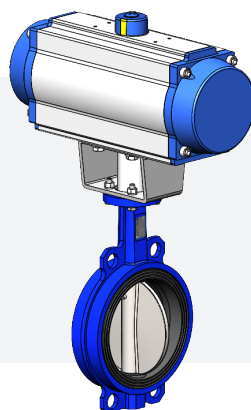
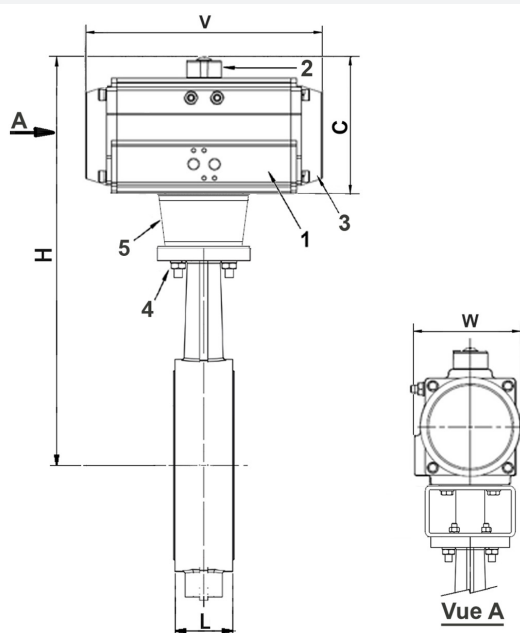
DN	inch	Actuator ref.	Ref. ΔP 16 bar
40*	1"1/2	TDA-052	300210144
50	2"	TDA-052	300210144
65	2"1/2	TDA-052	300210144
80	3"	TDA-063	300210145
100	4"	TDA-075	300210146
125	5"	TDA-083	300210147
150	6"	TDA-105	300210148
200	8"	TDA-125	300210149
250	10"	TDA-140	300210150
300	12"	TDA-160	300210151

* Compatible for flange mounting DN32 for models between flanges (wafer).

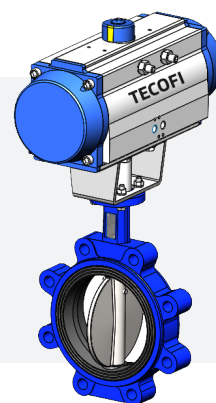
OPERATING ELEMENTS OF TECFLY - VPG MODEL

Single acting actuator

VIE/VDE 3845 Namur mounting plate actuator for limit switch bow and solenoid valve with visual position indicator.



VPG4442-N07
VPG4448-N07
VPG4449-N07



VPG4642-N07 / VPG4602-N07
VPG4648-N07 / VPG4608-N07
VPG4649-N07 / VPG4609-N07

Rep.	Description	Material	Coating
1	Actuator	Aluminum alloy extrusion	Hard anodized treatment
2	Position indicator	ABS plastic	
3	Flask	Cast Aluminum	Epoxy paint thickness 120µm
4	Screw	Stainless Steel A2	
5	Arcade	Stainless Steel	

(Table 17)

Dimensions		DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300
		1"1.2	2"	2"1/2	3"	4"	5"	6"	8"	10"	12"
Actuator ref.		TSR-063	TSR-083	TSR-083	TSR-083	TSR-105	TSR-125	TSR-140	TSR-160	TSR-190	TSR-240
C		128	128	149	157	170	202	282	249	330	355
V		169	169	210	264	272	302	398	456	534	536
W		80,50	80,50	91	103	116	134,50	142	161	189	210
L		33	43	45	45	52	54,5	56	60	65,60	77
H		248	256	289	305	335	377	481	469	581	653
Weight (kg)	VPG4442-N07*	3,52	5,62	5,79	6,47	11,01	16,14	22,84	35,98	53,63	108,68
	VPG4448-N07*										
	VPG4449-N07*	3,53	5,63	5,84	6,44	10,83	15,91	22,66	35,84	54,08	107,68
	VPG4642-N07	4,20	6,10	6,50	7,60	12,90	18	25,40	40,30	62,50	123
	VPG4648-N07										
	VPG4649-N07										
	VPG4602-N07	-	-	-	-	-	-	-	39,30	62,50	123
	VPG4608-N07										
	VPG4609-N07										

The actuator recommendation corresponds to a maximum ΔP of 16 bar with an air supply of 6 bar.

Weights given as an indication.

* Compatible for flange mounting DN32 for models between flanges (wafer).

OPERATING ELEMENTS OF TECFLY - VPG MODEL

Operating time and air consumption of simple acting pneumatic actuators

(Table 18)

Type	Set of spring	Operating direction	Operating time (seconde)	Air consumption (litre)
TSR063	12	0° - 90°	2,66	0,21
		90° - 0°	0,44	
TSR075	8	0° - 90°	2,66	0,30
		90° - 0°	0,60	
TSR083	11	0° - 90°	2,81	0,42
		90° - 0°	0,63	
TSR092	9	0° - 90°	2,95	0,64
		90° - 0°	0,80	
TSR105	12	0° - 90°	3,26	0,95
		90° - 0°	0,79	
TSR125	11	0° - 90°	4,34	1,60
		90° - 0°	1,10	
TSR140	9	0° - 90°	4,64	2,50
		90° - 0°	1,29	
TSR160	12	0° - 90°	4,84	3,70
		90° - 0°	1,65	
TSR190	12	0° - 90°	5,83	5,90
		90° - 0°	3,40	
TSR210	10	0° - 90°	8,46	7,50
		90° - 0°	4,54	
TSR240	9	0° - 90°	16,44	11
		90° - 0°	4,90	

Single acting pneumatic actuator kit references

DN	inch	Actuator ref.	Ref. ΔP 16 bar
40*	1 1/2	TSR-063	300210152
50	2"	TSR-083	300210153
65	2 1/2	TSR-083	300210153
80	3"	TSR-083	300210153
100	4"	TSR-105	300210154
125	5"	TSR-125	300210155
150	6"	TSR-140	300210156
200	8"	TSR-160	300210157
250	10"	TSR-190	300210158
300	12"	TSR-240	300210159

* Compatible for flange mounting DN32 for models between flanges (wafer).

OPERATING ELEMENTS OF TECFLY - VPG MODEL

Accessories for pneumatic actuators



The limit switch box to be mounted on the pneumatic actuator allows the feedback of information to the control unit and the easy and direct visualization of the valve position. Optional: inductive limit switch box (consult us).

TECOFI limit switch kit



Protection: IP68
Construction : Cast Aluminum
Position indicator: polycarbonate
Mounting on the whole range of 1/4T actuator (TDA/TSR)

Single and double acting actuator		Ref.
mm	inch	
DN32/40-300	1"1/4 / 1"1/2 - 12"	300180034



**Screws, axle and mounting bracket in A2 stainless steel included.
Easy to install and robust.**

Inductive TOPWORX limit switch box



TOPWORX
by
EMERSON

TVA series case
Resin case and cover
Protection: IP68
Standard visual display green
«open» / red «closed»
NAMUR shaft
M20 inlet connection to the
housing
Silicone seals

Non ATEX 2 inductive NAMUR 8V p+f NJ2-V3-N			
Double acting actuator		Single acting actuator	
Type	Ref.	Type	Ref.
TDA - 052	300200120 (30x80)	TSR-063	300200120
TDA - 052		TSR-063	
TDA - 063		TSR-083	
TDA - 063		TSR-092	
TDA - 083		TSR-105	
TDA - 083		TSR-125	
TDA - 092	300200121 (30x130)	TSR-140	300200121 (30x130)
TDA - 125		TSR-160	
TDA - 140		TSR-190	
TDA - 160		TSR-210	

ATEX ZONE 1 / T6 (Ex ia) 			
Double acting actuator		Simple acting actuator	
Type	Ref.	Type	Ref.
TDA - 052	300200122 (30x80)	TSR-063	300200122 (30x80)
TDA - 052		TSR-063	
TDA - 063		TSR-083	
TDA - 063		TSR-092	
TDA - 083		TSR-105	
TDA - 083		TSR-125	
TDA - 092	300200123 (30x130)	TSR-140	300200123 (30x130)
TDA - 125		TSR-160	
TDA - 140		TSR-190	
TDA - 160		TSR-210	



TOPWORX
by
EMERSON

TVL series enclosure
Tropicalized aluminium case and
cover
2 dry mechanical contacts:
15A-120VCA-SPDT
Protection: IP68

Double acting actuator	
Type	Ref.
TDA - 052	300200124 (30x80)
TDA - 052	
TDA - 063	
TDA - 063	
TDA - 083	
TDA - 083	
TDA - 092	300200125 (30x130)
TDA - 125	
TDA - 140	
TDA - 160	

Single acting actuator	
Type	Ref.
TSR-063	300200124 (30x80)
TSR-063	
TSR-083	
TSR-092	
TSR-105	300200125 (30x130)
TSR-125	
TSR-140	
TSR-160	
TSR-190	
TSR-210	

OPERATING ELEMENTS OF TECFLY - VPG MODEL

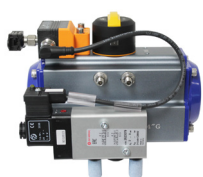
Double inductive detector kit - IFM®



The double inductive sensor mounted on a pneumatic actuator allows reliable monitoring of the valve position. The system is contactless, quick to install, self-cleaning and highly resistant to vibration and shock.

Single and double acting actuator		Ref.
mm	inch	
DN32/40-150	1"1/4 / 1"1/2" - 6"	300190336
DN200-300	8" - 12"	300190337

AS-interface automation kit



The dual sensor with solenoid connection reduces the number of cables needed to control the valve.

Single and double acting actuator		Ref.
mm	inch	
DN32/40-150	1"1/4 / 1"1/2" - 6"	401200030
DN200-300	8" - 12"	401200031

Digital positioner SIEMENS® for single and double acting actuator



Type : Electro-pneumatic for single acting cylinder TSR type or double acting cylinder TDA type
Operating temperature : -30°C/+80°C

Supply pressure : 1,4 to 7 bar

Housing : Macrolon®

IP66

Display : LCD screen

Control signal: 4 - 20 mA

Compressed air according to ISO 8573-1 CLASS 2

Includes stainless steel bracket for cylinder mounting, cylinder driver, screws, washer

DN		Double acting actuator			
		POSSIE-DE	POSSIE-DE + POSSIE-RE-COPIE 4-20MA	POSSIE-DE + POSSIE-FDC	POSSIE-DE + POSSIE-RECOPIE 4-20MA + POSSIE-FDC
mm	inch	Ref.	Ref.	Ref.	Ref.
32/40-150	1"1/4 / 1"1/2 - 6"	300180072	300180073	300200074	300200078
		Ex 300180074	Ex 300180075	Ex 300200076	Ex 300200080
200-300	8" - 12"	300180302	300180303	300200075	300200079
		Ex 300180304	Ex 300180305	Ex 300200077	Ex 300200081

DN		Single acting actuator			
		POSSIE-SE	POSSIE-SE + POSSIE-RE-COPIE 4-20MA	POSSIE-SE + POSSIE-FDC	POSSIE-SE + POSSIE-RECOPIE 4-20MA + POSSIE-FDC
mm	inch	Ref.	Ref.	Ref.	Ref.
32/40-100	1"1/4 / 1"1/2 - 4"	300200058	300200062	300200066	300200070
		Ex 300200060	Ex 300200064	Ex 300200068	Ex 300200072
125-300	5"-12"	300200059	300200063	300200067	300200071
		Ex 300200061	Ex 300200065	Ex 300200069	Ex 300200073

OPERATING ELEMENTS OF TECFLY - VPG MODEL

Electric actuator

The type of electric actuator must be suitable for the operating conditions and the correct recommendations.

In order to properly select your electric actuator, you must know:

- ✓ The maximum differential pressure, the working pressure, the installation environment: minimum and maximum outside temperature, installation conditions, permanent immersion (very humid, corrosive environment...)
- ✓ The nature of the site: industrial site, tertiary site, nuclear site, risk site (specify the level)...
- ✓ Technical operating criteria:

- ✓ Maximum operating torque required
 - control torque
- ✓ Valve movement: 1/4 turn
- ✓ Desired actuation time for 1/4T
- ✓ Bushing machining (square, flat, bore for 1/4 turn)
- ✓ Supply voltage
- ✓ Actuator service: on/off, positioning, regulation
- ✓ ISO valve mounting flange

The speed of the fluid flow can increase the operating torque.



Tecofi 
VALVE MANUFACTURER - FRANCE



auma[®]
Solutions for a world in motion




BERNARD[®]
CONTROLS

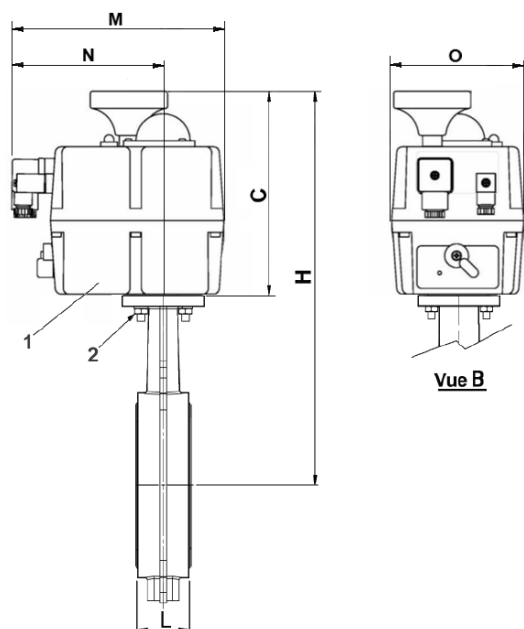
OPERATING ELEMENTS OF TECFLY - VPG MODEL

1/4T multi-voltage 24-230V single-phase electric actuator



Caractéristiques et fonctions des actionneurs

- ✓ Multi-voltage actuator 24-230V - 50/60Hz - 0/+5%
- ✓ Electronic torque limitation
- ✓ Stainless Steel external main shaft
- ✓ Steel and polyamide gearbox
- ✓ BSR battery safety return
- ✓ Position indicator
- ✓ Polyamide cam for internal adjustment
- ✓ Class B insulation (IEC 60034)
- ✓ Service : 75% S4 motor
- ✓ Ambient temperature: -20°C / +70°C
- ✓ Limit switch 4 SPST NO micro (2 motor stop et 2 confirmations)
- ✓ Protection class IP67
- ✓ Manual override



VPG4442-J34

VPG4448-J34

VPG4449-J34



VPG4642-J34 / VPG4602-J34

VPG4648-J34 / VPG4608-J34

VPG4649-J34 / VPG4609-J34

Rep.	Description	Material
1	Case	Anticorrosive polyamide plastic (PA6)
2	Mounting screw	Stainless Steel A2

OPERATING ELEMENTS OF TECFLY - VPG MODEL

(Table 27)

Dimensions electric actuators 1/4T multi-voltage 24-230V single-phase									
Dimensions		DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200
		1"1.2	2"	2"1/2	3"	4"	5"	6"	8"
Actuator ref.		T20J34	T20J34	T20J34	T35J34	T55J34	T85J34	T140J34	T300J34
C		169	169	169	169	196	196	254	254
M		181	181	181	181	181	181	235	135
N		130	130	130	130	130	130	128	128
O		110	110	110	110	110	110	214	214
L		33	43	45	45	52	54.5	56	60
H		289	309	319	327	372	386	465	489
Weight (kg)	VPG4442-J34* VPG4448-J34* VPG4449-J34*	3,07	3,62	3,79	4,47	6,26	8,73	11,99	16,68
	VPG4642-J34 VPG4648-J34 VPG4649-J34	3,45	3,99	4,49	5,65	7,30	10,10	14,23	20,36
	VPG4602-J34 VPG4608-J34 VPG4609-J34	-	-	-	-	-	-	-	20,10

Maximum differential pressure: 16 bar.

Weights given as an indication.

* Compatible for flange mounting DN32 for models between flanges (wafer).

1/4T multi-voltage 24-230V single-phase electric actuator kit

DN	inch	Actuator ref. 1 phase / 230V	Nomenclature ΔP 16 bar
40*	1"1/2	T20J34	300220144
50	2"	T20J34	300220144
65	2"1/2	T20J34	300220144
80	3"	T35J34	300220145
100	4"	T55J34	300220146
125	5"	T85J34	300220147
150	6"	T140J34	300220148
200	8"	T300J34	300220149

* Compatible for flange mounting DN32 for models between flanges (wafer).

OPERATING ELEMENTS OF TECFLY - VPG MODEL

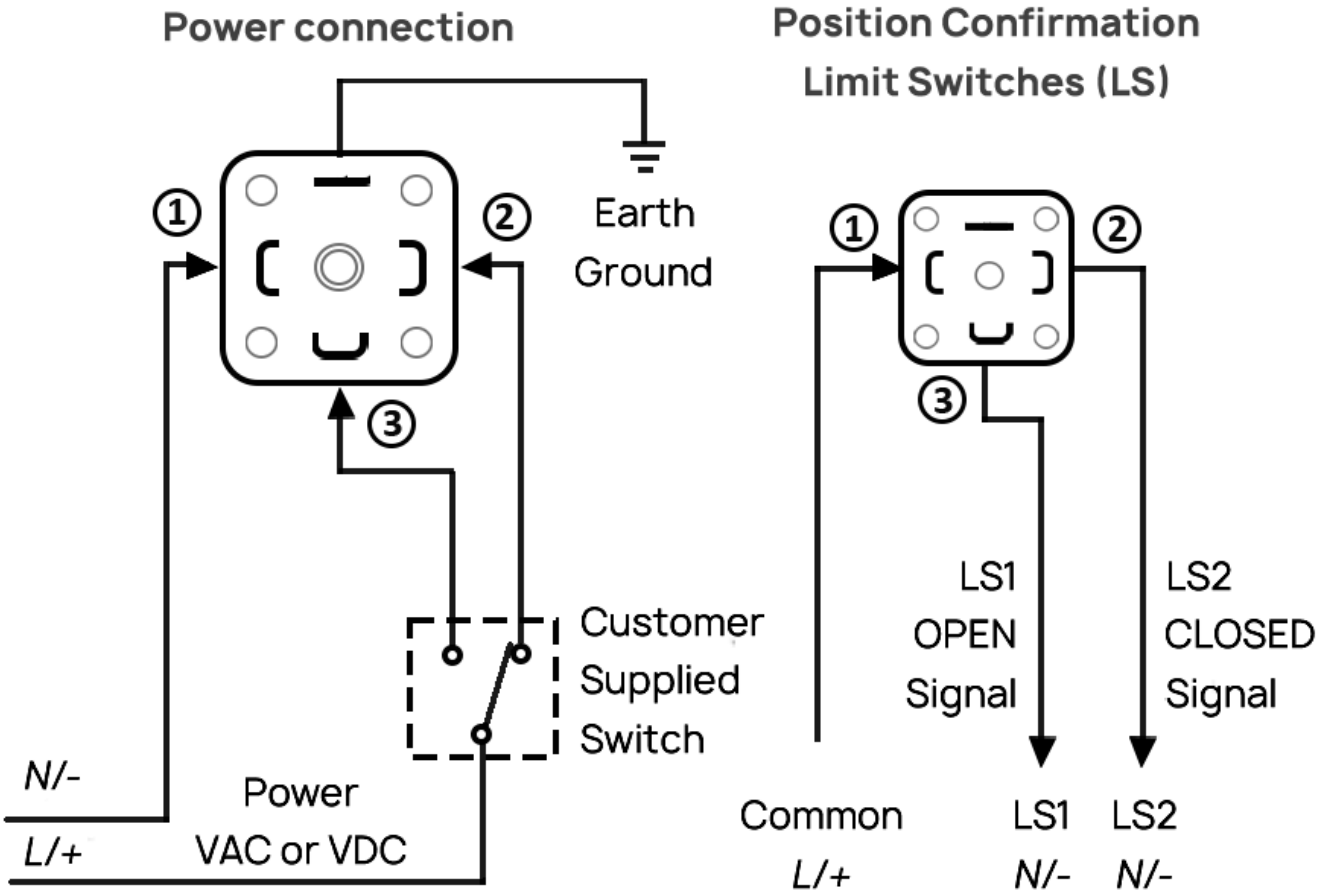
1/4T multi-voltage 24-230V single-phase electric actuators performance

(Table 28)

Codes vannes	Tension* : 24 - 230V Monophasé				
	Code actionneur	Cycle d'utilisation	Temps de manœuvre (sec./90°)	Couple maxi (Nm)	Puissance maximale électrique absorbée (VA)
VPG4442-J34	T20J34	0.75	9	20	46
VPG4642-J34					
VPG4602-J34	T55J34	0.75	13	55	47
VPG4448-J34					
VPG4449-J34	T85J34	0.75	29	85	46
VPG4648-J34					
VPG4649-J34	T300J34	0.75	58	300	113.5
VPG4608-J34					
VPG4609-J34					

* Voltage $\pm 10\%$, fréquence $\pm 5\%$

Wiring diagram for 1/4T multi-voltage 24-230V single-phase electric actuators



OPERATING ELEMENTS OF TECFLY - VPG MODEL

1/4T TECOFI® electric actuator

Tecofi 
VALVE MANUFACTURER - FRANCE



Features and functions of the actuator

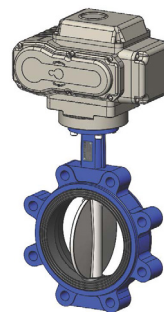
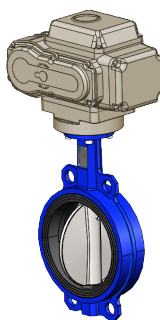
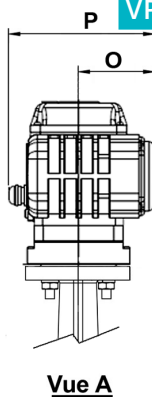
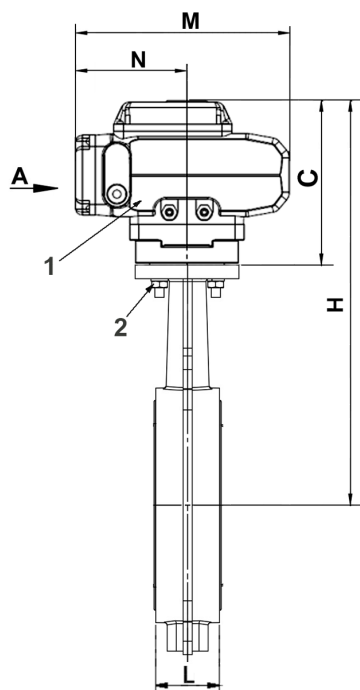
- ✓ Single or three phase actuator
- ✓ S2-35% service.
- ✓ Power supply: references N24 220V $\pm$ 10% / 50/60Hz / 1PH or references N04 400V $\pm$ 10% / 50/60Hz / 3PH
- ✓ Temperature: -30°C / +60°C

Benefits

- ✓ Lightweight : aluminum housing
- ✓ Compact: small size
- ✓ Fully equipped: position indicator, protection class IP67, 2 limit switches SPDT opening/closing, + 2 auxiliaries, mechanical stops
- ✓ Emergency manual control with Allen key
- ✓ Condensation resistant
- ✓ Heat protection
- ✓ Position indicator

Approvals and standards

Manufactured according to the requirements of the European Directive «Low voltage» n°2006/95/CE, the European Directive «Machinery» n°2006/42/CE, and the European Directive «Electromagnetic compatibility» n°2004/108/CE.



VPG4442-N24 / VPG4442-N04
VPG4448-N24 / VPG4448-N04
VPG4449-N24 / VPG4449-N04

VPG4642-N24 / VPG4602-N24
VPG4642-N04 / VPG4602-N04
VPG4648-N24 / VPG4608-N24
VPG4648-N04 / VPG4608-N04
VPG4649-N24 / VPG4609-N24
VPG4649-N04 / VPG4609-N04

Rep.	Description	Matière
1	TECOFI actuator (IP67)	Aluminum alloy casing
2	Mouting screw	Stainless Steel A2

OPERATING ELEMENTS OF TECFLY - VPG MODEL

(Table 19)

Dimensions of TECOFI electric actuators										
Dimensions	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300
	1"1.2	2"	2"1/2	3"	4"	5"	6"	8"	10"	12"
Actuator ref.	TEA-05	TEA-05	TEA-05	TEA-05	TEA-10	TEA-10	TEA-20	TEA-40	TEA-60	TEA-60
C	125	125	125	125	125	160	160	196	196	196
M	160	160	160	160	208	208	258	258	258	258
N	77	77	77	77	110	110	137	137	137	137
O	74	74	74	74	74	74	75	75	75	75
P	137	137	137	137	145	145	170	170	170	170
L	33	43	45	45	52	54.5	56	60	65.6	77
H	245	253	265	273	290	335	359	416	447	484
Weight (kg)	VPG4442-N24* VPG4442-N04* VPG4448-N24* VPG4448-N04* VPG4449-N24* VPG4449-N04*	3,47	4,02	4,19	4,87	7,86	9,73	13,79	19,28	25,68
	VPG4642-N24 VPG4642-N04 VPG4648-N24 VPG4648-N04 VPG4649-N24 VPG4649-N04	3,82	4,38	4,89	5,89	8,76	10,98	15,97	22,91	30,45
	VPG4602-N24 VPG4602-N04 VPG4608-N24 VPG4608-N04 VPG4609-N24 VPG4609-N04	-	-	-	-	-	-	21,96	30,45	42,28

Maximum differential pressure: 16 bar.

Weights given as an indication.

* Compatible for flange mounting DN32 for models between flanges (wafer).

TECOFI electric actuator kit

DN	inch	Actuator ref. 1 phase / 220V	Ref. ΔP 16 bar	DN	inch	Actuator ref. 3 phases / 400V	Ref. ΔP 16 bar
32/40	1"1/4 / 1"1/2	TEA-05-N24	300180194	32/40	1"1/4 / 1"1/2	TEA-05-N04	300180189
50	2"	TEA-05-N24	300180194	50	2"	TEA-05-N04	300180189
65	2"1/2	TEA-05-N24	300180194	65	2"1/2	TEA-05-N04	300180189
80	3"	TEA-05-N24	300180194	80	3"	TEA-05-N04	300180189
100	4"	TEA-10-N24	300180195	100	4"	TEA-10-N04	300180190
125	5"	TEA-10-N24	300210166	125	5"	TEA-10-N04	300210167
150	6"	TEA-20-N24	300180196	150	6"	TEA-20-N04	300180191
200	8"	TEA-40-N24	300180197	200	8"	TEA-40-N04	300180192
250	10"	TEA-60-N24	300180198	250	10"	TEA-60-N04	300180193
300	12"	TEA-60-N24	300180198	300	12"	TEA-60-N04	300180193

OPERATING ELEMENTS OF TECFLY - VPG MODEL

Performance of TECOFI actuators

(Table 20)

Voltage* : 220V 50-60Hz Single-phase					
TECFLY ref.	Actuator ref.	Maximum torque (Nm)	Operating time (sec./90°)	Power supply ² (kW)	Nominal current (A)
VPG4442-N24	TEA-05	50	20	0,02	2
VPG4448-N24	TEA-10	100	20	0,04	2,4
VPG4449-N24	TEA-20	200	20	0,04	8,5
VPG4642-N24	TEA-40	400	20	0,09	11,5
VPG4648-N24	TEA-60	600	30	0,09	11,8
VPG4649-N24					
VPG4602-N24					
VPG4608-N24					
VPG4609-N24					

* Voltage $\pm 10\%$, fréquence $\pm 2\%$

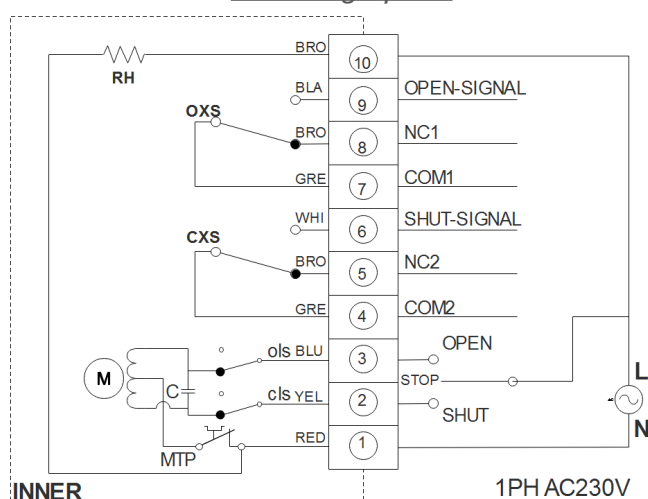
(Table 21)

Tension* : 400V 50-60Hz Triphasé					
TECFLY ref.	Actuator ref.	Maximum torque (Nm)	Operating time (sec./90°)	Power supply ² (kW)	Nominal current (A)
VPG4442-N04	TEA-05	50	20	0,01	0,15
VPG4448-N04	TEA-10	100	20	0,023	0,19
VPG4449-N04	TEA-20	200	20	0,04	0,25
VPG4648-N04	TEA-40	400	20	0,09	0,45
VPG4649-N04	TEA-60	600	30	0,09	0,46
VPG4602-N04					
VPG4608-N04					
VPG4609-N04					

* Voltage $\pm 10\%$, fréquence $\pm 2\%$

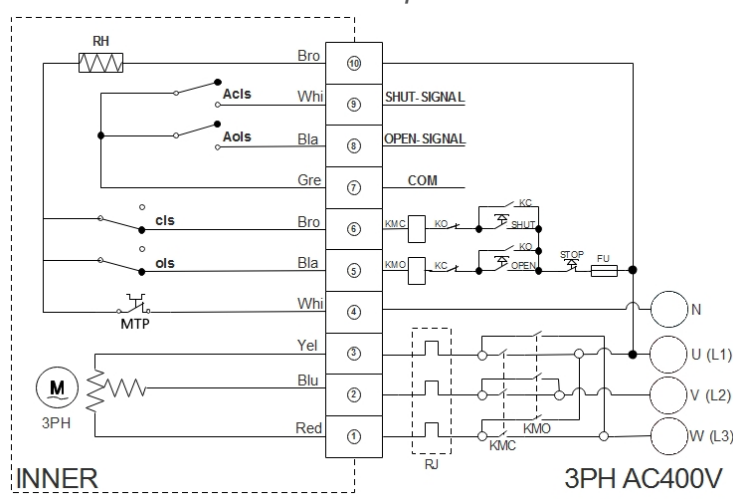
Wiring diagrams for TECOFI actuators

230V / Single-phase



VPG4442-N24 / VPG4642-N24 / VPG4602-N24
VPG4448-N24 / VPG4648-N24 / VPG4608-N24
VPG4449-N24 / VPG4649-N24 / VPG4609-N24

400V / Three-phase



VPG4442-N04 / VPG4648-N04 / VPG4602-N04
VPG4448-N04 / VPG4648-N04 / VPG4608-N04
VPG4449-N04 / VPG4649-N04 / VPG4609-N04

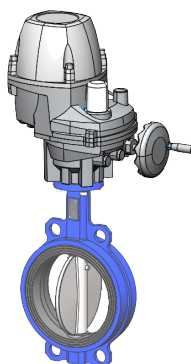
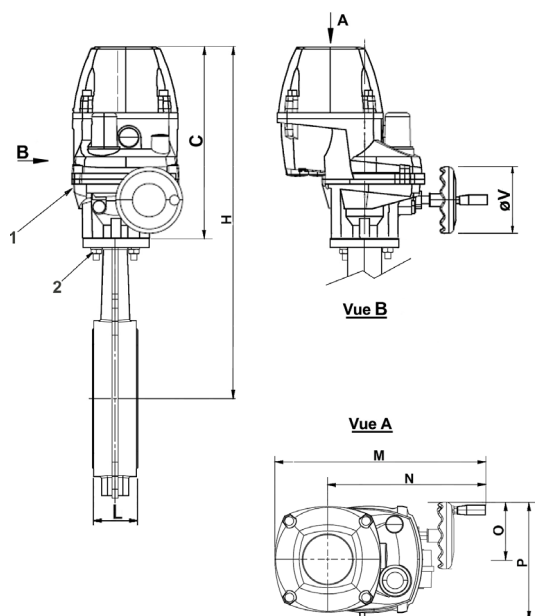
OPERATING ELEMENTS OF TECFLY - VPG MODEL

1/4T electric actuator model PROFOX single-phase - AUMA®

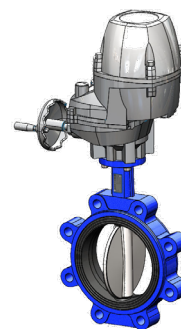


Actuator features and functions:

- ✓ Opening closing classes A and B according to EN 15714-2, short-time service S2-15 min.
- ✓ Insulation class F, tropicalized
- ✓ Swivel angle: $90^\circ \pm 15^\circ$
- ✓ Torque switching by electronic current measurement
- ✓ Adjustable tripping torques in 8 steps
- ✓ Manual emergency operation via handwheel (handwheel does not turn during electric operation)
- ✓ Position indicator
- ✓ 4-20Ma position feedback as standard
- ✓ Single-phase power supply: 100-240V / 50-60Hz multi-voltage motor (excess voltage plus or minus 10%, excess frequency plus or minus 5%)
- ✓ 2 limit switches
- ✓ Torque limiter for closed and open positions
- ✓ Torque monitoring over the entire stroke
- ✓ Torque bypass
- ✓ Speed control (specific speed programming for open and close operations)
- ✓ ISO mounting plate
- ✓ IP67 protection (IP68 optional)



VPG4442-U24
VPG4448-U24
VPG4449-U24



VPG4642-U24 / VPG4602-U24
VPG4648-U24 / VPG4608-U24
VPG4649-U24 / VPG4609-U24

Rep.	Description	Material
1	AUMA® PROFOX actuator	RAL 7035 // 70µm
2	Mounting screw	Stainless Steel A2

(Table 25)

Dimensions electric actuator AUMA® 1/4T PROFOX single-phase										
Dimensions	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300
	1"1.2	2"	2"1/2	3"	4"	5"	6"	8"	10"	12"
Actuator ref.	PF-Q80	PF-Q80	PF-Q80	PF-Q80	PF-Q150	PF-Q150	PF-Q150	PF-Q300	PF-Q300	PF-Q600
C	287	287	287	287	287	287	287	345	345	345
M	314	314	314	314	314	314	314	337	337	337
N	235	235	235	235	235	235	235	258	258	258
O	93,50	93,50	93,50	93,50	93,50	93,50	93,50	93,50	93,50	93,50
P	160	160	160	160	160	160	160	160	160	160
ØV	100	100	100	100	100	100	100	160	160	160
L	33	43	45	45	52	54,5	56	60	65,6	77
H	407	415	427	435	452	462	486	543	574	611
Weight (kg)	VPG4442-U24*									
	VPG4448-U24*	9,27	9,82	9,99	10,67	11,86	13,73	14,79	22,48	28,88
	VPG4449-U24*									
	VPG4642-U24									
	VPG4648-U24	9,65	10,19	10,69	11,85	12,90	15,10	17,03	26,16	33,82
	VPG4649-U24									
	VPG4602-U24	-	-	-	-	-	-	-	25,16	33,82
	VPG4608-U24									
	VPG4609-U24									

Maximum differential pressure: 16 bar.

Weights given as an indication.

* Compatible for flange mounting DN32 for models between flanges (wafer).

PROFOX single-phase electric actuator kit - AUMA®

DN	inch	Actuator ref. 1 phase / 230V	Ref. ΔP 16 bar
40	1"1/2	PF-Q80	300210169
50	2"	PF-Q80	300210169
65	2"1/2	PF-Q80	300210169
80	3"	PF-Q80	300210169
100	4"	PF-Q150	300220093
125	5"	PF-Q150	300220094
150	6"	PF-Q150	300220094
200	8"	PF-Q300	300210171
250	10"	PF-Q300	300210171
300	12"	PF-Q600	300210172

* Compatible for flange mounting DN32 for models between flanges (wafer).

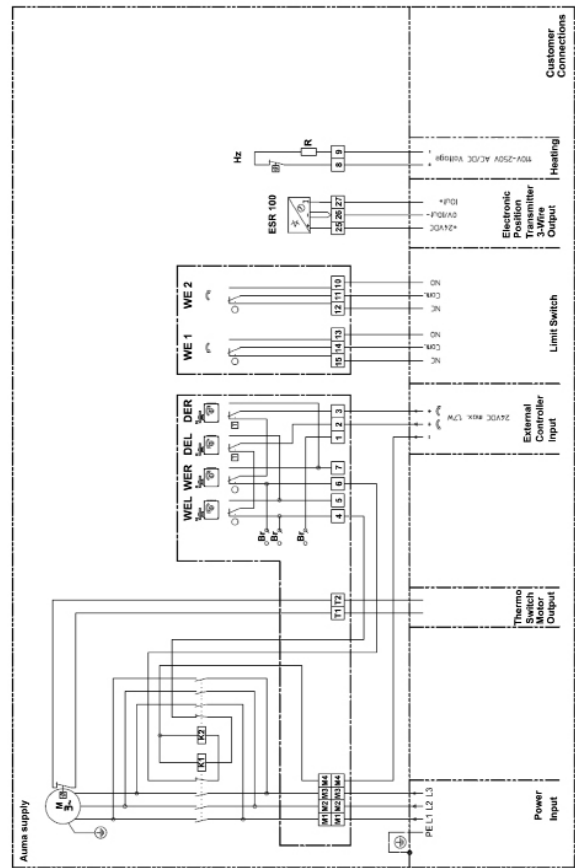
Performance of PROFOX single-phase actuators - AUMA®

(Table 26)

Voltage* : 230V 50 - 60Hz Single-phase								
TECFLY ref.	Actuator ref.	Supply voltage	Operating time (sec./90°)	Maxi. torque (Nm)	Modulated torque (Nm)	Voltage ² (kW)	Nominal current (A)	Starting current (A)
VPG4442-U24	PF-Q80	V1	16 - 160	32 - 80	40	22	0,20	0,30
		V2	8 - 80			33	0,30	0,50
		V3	4 - 40			52	0,40	0,80
VPG4448-U24	PF-Q150	V1	32 - 320	60 - 150	75	22	0,20	0,30
VPG4642-U24		V2	16 - 160			30	0,20	0,40
VPG4648-U24		V3	8 - 80			52	0,40	0,80
VPG4649-U24	PF-Q300	V1	63 - 630	120 - 300	150	22	0,20	0,30
VPG4602-U24		V2	45 - 450			30	0,20	0,40
VPG4608-U24		V3	22 - 220			44	0,30	0,70
VPG4609-U24	PF-Q600	V2	90 - 750	240 - 600	300	30	0,20	0,50
		V3	45 - 450			51	0,40	0,70

* Voltage ±10%, fréquence ±5%

Wiring diagram for PROFOX single-phase actuators - AUMA®



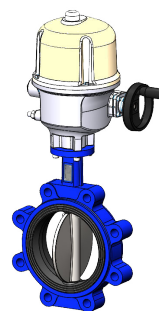
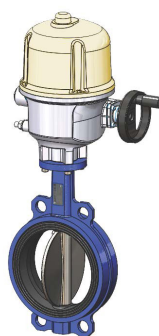
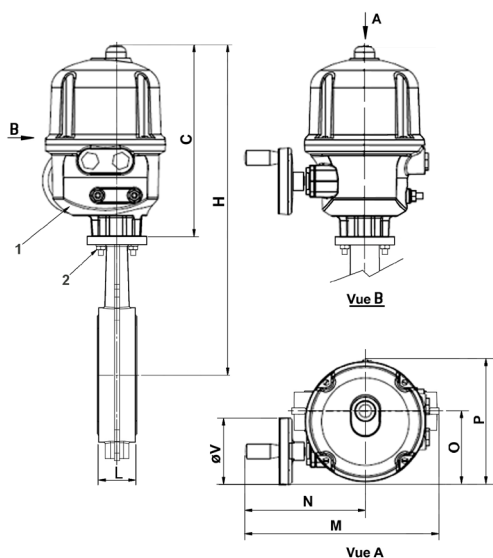
OPERATING ELEMENTS OF TECFLY - VPG MODEL

1/4T electric actuator model AQ - BERNARD CONTROLS®



Features and functions of the actuator

- ✓ Single-phase or three-phase actuator
- ✓ Open - Close Classes A according to EN 15714-2, service S4-30% up to 360 starts/hour
- ✓ Insulation class F with thermal protection included
- ✓ Cam-operated self-locking limit switches
- ✓ Limit switches actuated by adjustable camblock
- ✓ 2 SPDT switches as standard (open and close) + 2 auxiliary switches (for signaling)
- ✓ Torque limitation available from AQ25
- ✓ Manual automatic declutchable handwheel drive for setting and emergency operation
- ✓ Position indicator
- ✓ Alimentation: references B24 230V / 50Hz / 1PH or references B04 400V / 50Hz / 3PH
- ✓ Wiring entry: 2 x M20
- ✓ Temperature: -20° / +60° C
- ✓ Enclosure protection IP68 / NEMA 4X



VPG4442-B24 / VPG4442-B04
VPG4448-B24 / VPG4448-B04
VPG4449-B24 / VPG4449-B04

VPG4642-B24 / VPG4602-B24
VPG4642-B04 / VPG4602-B04
VPG4648-B24 / VPG4608-B24
VPG4648-B04 / VPG4608-B04
VPG4649-B24 / VPG4609-B24
VPG4649-B04 / VPG4609-B04

Rep.	Description	Material
1	AQ BERNARD CONTROLS® actuator	Aluminum casting / protection (C4 according to ISO 12944), powder coated in black and champagne
2	Mounting screw	Stainless Steel A2

OPERATING ELEMENTS OF TECFLY - VPG MODEL

(Table 22)

BERNARD CONTROLS® electric actuators dimensions 230V / 50Hz / 1PH and 400V / 50Hz / 3PH											
Dimensions		DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300
		1"1/2	2"	2"1/2	3"	4"	5"	6"	8"	10"	12"
Actuator code		AQ5_	AQ5_	AQ5_	AQ5_	AQ10_	AQ10_	AQ15_	AQ25_	AQ50_	AQ80_
C		286	286	286	286	286	286	286	317	328	365
M		280	280	280	280	280	280	280	379	427	427
N		184	184	184	184	184	184	184	262	310	310
O		100	100	100	100	100	100	100	138	174	200
P		184	184	184	184	184	184	184	224	260	286
ØV		100	100	100	100	100	100	100	125	200	200
L		33	43	45	45	52	54.5	56	60	65.6	77
H		406	414	426	434	451	461	485	537	579	653
Weight (kg)	VPG4442-B24* VPG4442-B04* VPG4448-B24* VPG4448-B04* VPG4449-B24* VPG4449-B04*	11,27	11,82	11,99	12,67	13,86	15,73	16,79	24,48	32,88	45,98
	VPG4642-B24 VPG4642-B04 VPG4648-B24 VPG4648-B04 VPG4649-B24 VPG4649-B04	11,62	12,18	12,69	13,69	14,76	16,98	18,97	28,11	37,65	52,48
	VPG4602-B24 VPG4602-B04 VPG4608-B24 VPG4608-B04 VPG4609-B24 VPG4609-B04	-	-	-	-	-	-	-	27,16	37,65	52,48

Maximum differential pressure: 16 bar.

Weights given as an indication.

* Compatible for flange mounting DN32 for models between flanges (wafer).

AQ electric actuator kit - BERNARD CONTROLS®

DN	inch	Actuator ref. 1 phase / 230V	Ref. ΔP 16 bar	Actuator ref. 3 phases / 400V	Ref. ΔP 16 bar
40	1"1/2	AQ5	300190064	AQ5	300190059
50	2"	AQ5	300190064	AQ5	300190059
65	2"1/2	AQ5	300190064	AQ5	300190059
80	3"	AQ5	300190064	AQ5	300190059
100	4"	AQ10	300190065	AQ10	300190060
125	5"	AQ10	300190065	AQ10	300190060
150	6"	AQ15	300190066	AQ15	300190061
200	8"	AQ25	300190067	AQ25	300190062
250	10"	AQ50	300190068	AQ50	300190063
300	12"	AQ80	300190220	AQ80	300190219

* Compatible for flange mounting DN32 for models between flanges (wafer).

OPERATING ELEMENTS OF TECFLY - VPG MODEL

Performance of single-phase AQ actuators - BERNARD CONTROLS®

(Table 23)

Voltage* : 230V 50-60Hz Single-phase						
TECFLY ref.	Actuator ref.	Maximum torque (Nm)	Operating time (sec./90°)	Power supply ² (kW)	Nominal current (A)	Starting current (A)
VPG4442-B24	AQ5_	50	13	0,02	0,6	0,7
VPG4448-B24	AQ10_	100	21	0,02	0,6	0,7
VPG4449-B24	AQ15_	150	25	0,02	0,8	1,1
VPG4642-B24	AQ25_	250	25	0,04	1,1	1,4
VPG4648-B24	AQ50_	500	30 / 45	0,06 / 0,04	1,2 / 1,1	1,7 / 1,4
VPG4649-B24	AQ80_	800	45	0,06	1,2	1,7
VPG4602-B24						
VPG4608-B24						
VPG4609-B24						

* Voltage $\pm 10\%$, fréquence $\pm 2\%$

Performances of AQ three-phase actuators - BERNARD CONTROLS®

(Table 24)

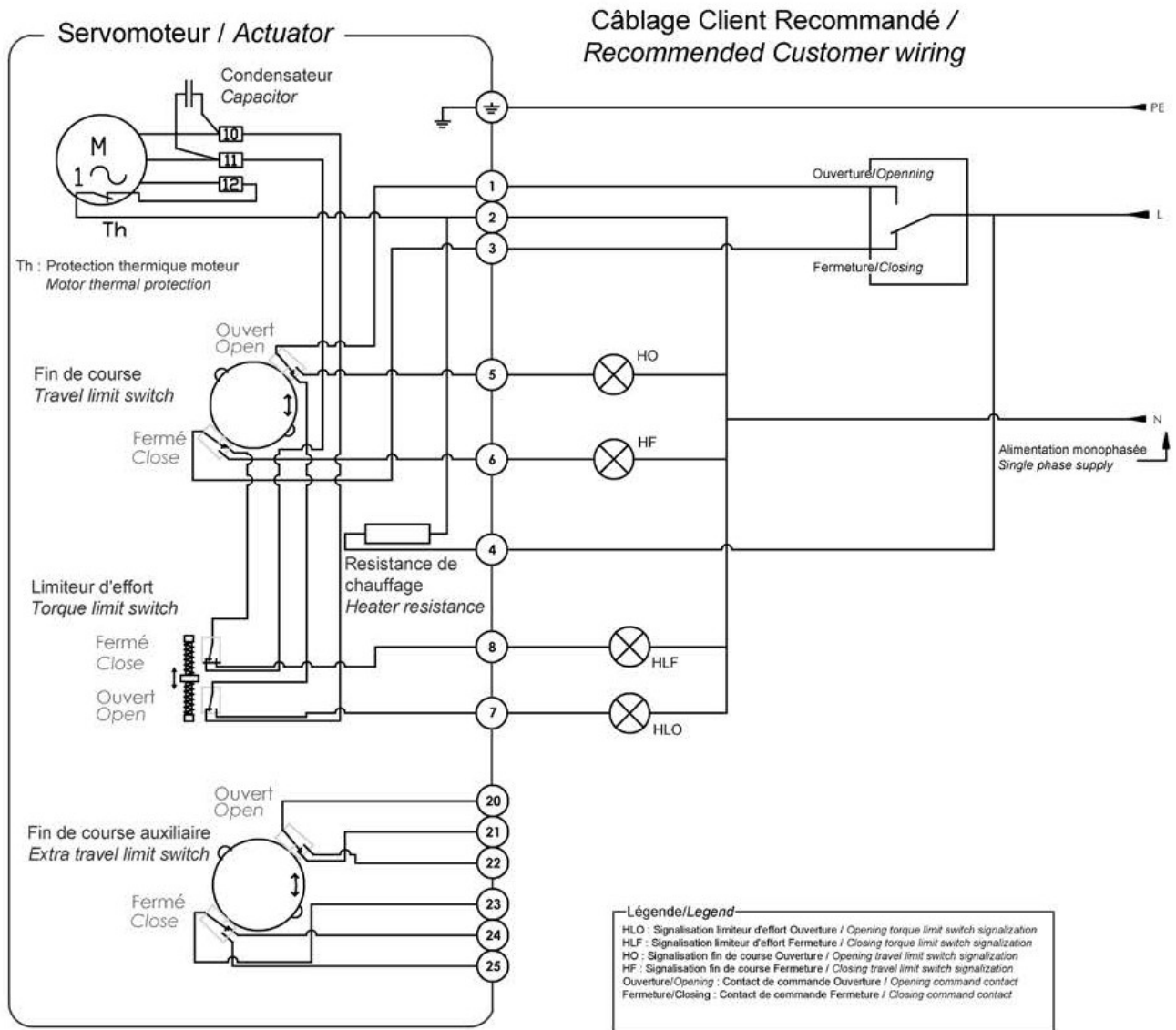
Voltage* : 400V 50-60Hz Three-phase						
TECFLY ref.	Actuator ref.	Maximum torque (Nm)	Operating time (sec./90°)	Power supply ² (kW)	Nominal current (A)	Starting current (A)
VPG4442-B04	AQ5_	50	16	0,02	0,24	0,4
VPG4448-B04	AQ10_	100	25	0,02	0,24	0,4
VPG4449-B04						
VPG4642-B04	AQ15_	150	30	0,02	0,24	0,4
VPG4648-B04	AQ25_	250	30	0,04	0,2	0,4
VPG4649-B04	AQ50_	500	35 / 55	0,06 / 0,04	0,4 / 0,2	0,7 / 0,4
VPG4602-B04	AQ80_	800	55	0,06	0,4	0,7
VPG4608-B04						
VPG4609-B04						

* Voltage $\pm 10\%$, fréquence $\pm 2\%$

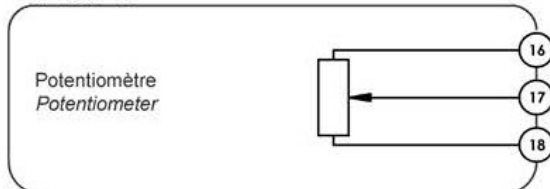
OPERATING ELEMENTS OF TECFLY - VPG MODEL

Wiring diagram for AQ actuators - BERNARD CONTROLS®

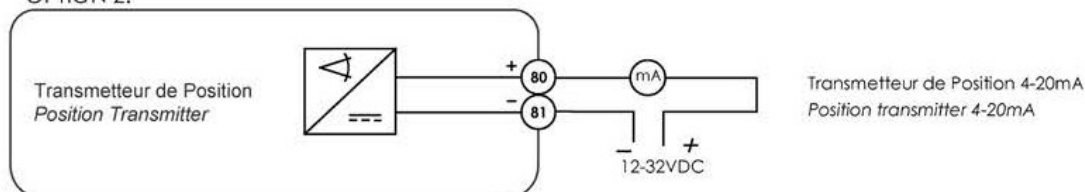
230V Single-phase



OPTION 1:

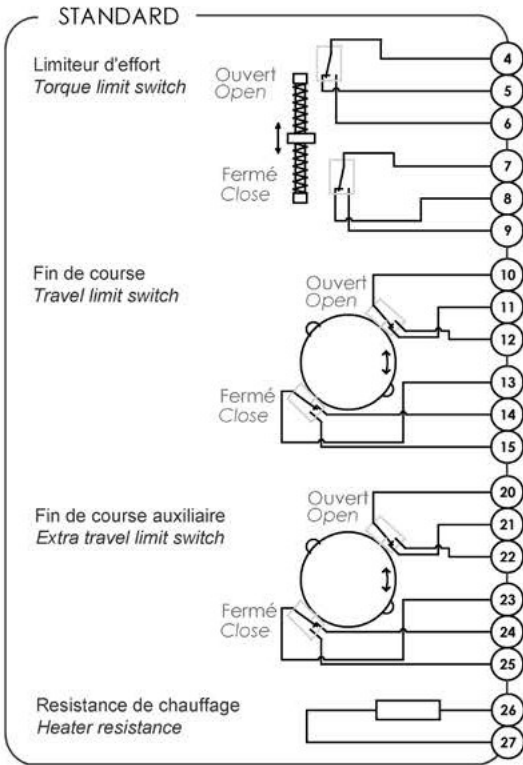


OPTION 2:

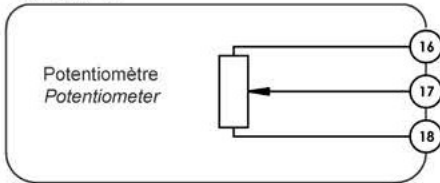


OPERATING ELEMENTS OF TECFLY - VPG MODEL

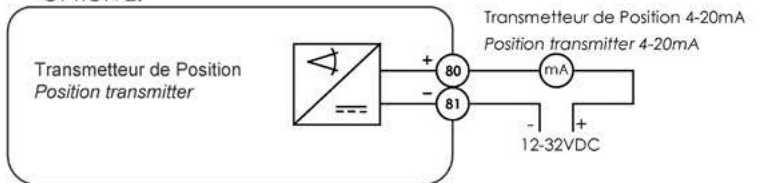
400V Three-phase



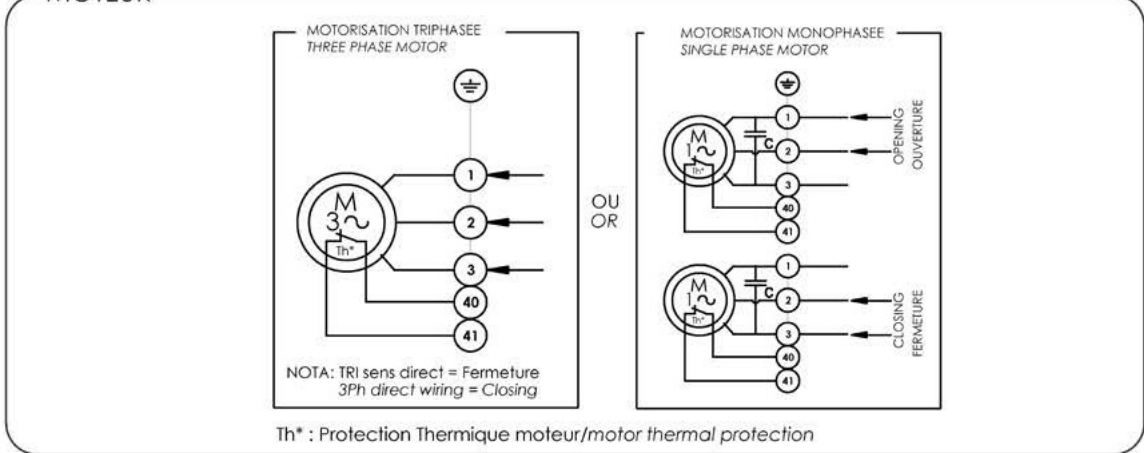
OPTION 1:



OPTION 2:

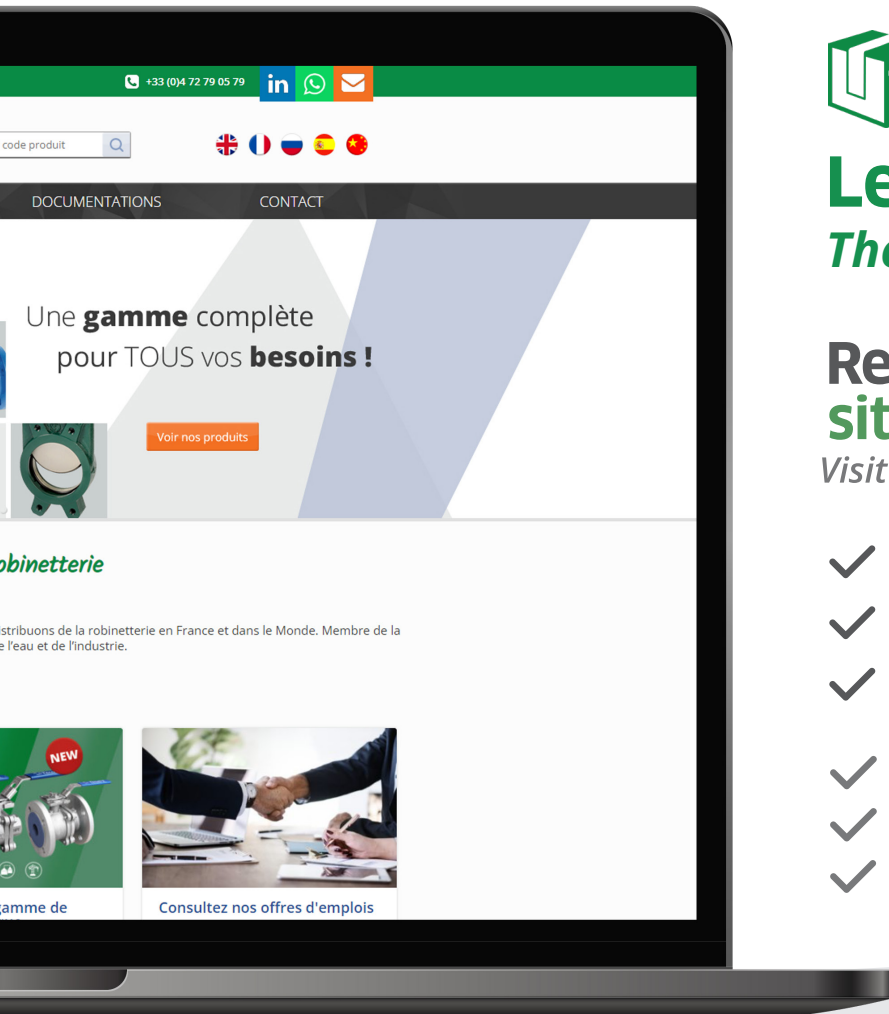


MOTEUR



Consultez nos stocks produits en temps réel !

Look up stock availability in real time!



Le stock en ligne

The Online Stock

Rendez-vous sur notre site web et retrouvez :

Visit our website and find:

- ✓ Notre documentation
- ✓ Nos fiches techniques
- ✓ Nos visuels 3D
- ✓ Our technical documentation
- ✓ Our technical datasheet
- ✓ Our 3D drawings

Our team is at your disposal to answer all your request of information or quotes!

Visit our Contact page to find the sales representative of your area.

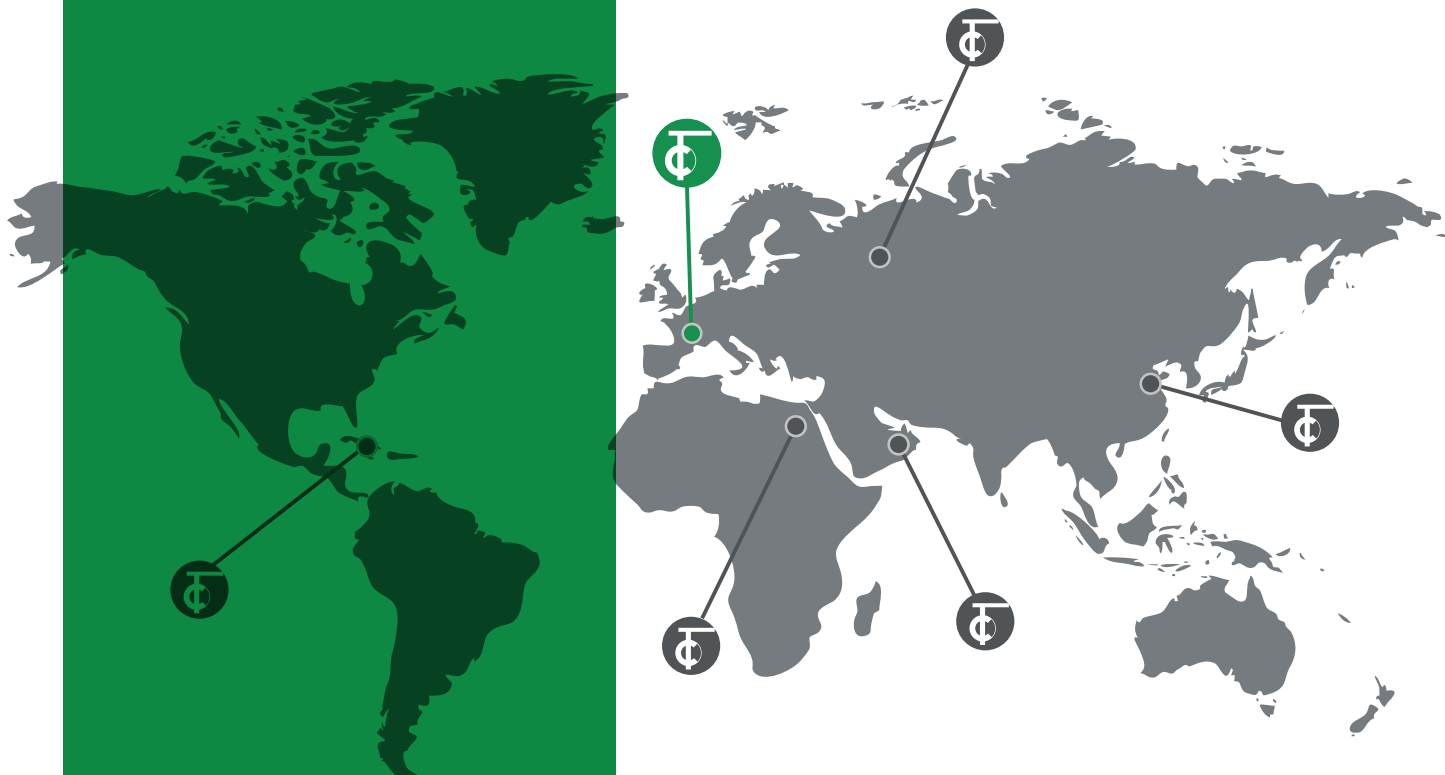
www.tecofi.fr



Retrouvez-nous sur LinkedIn
Follow us on LinkedIn

Tecofi

VALVE MANUFACTURER - FRANCE



TECOFI FRANCE

ADMINISTRATIF ET VENTE

Administrative and sales offices
8 rue Joseph Nicéphore Niépce
69740 GENAS - France

SIÈGE SOCIAL ET SITE DE FABRICATION

Headquarters and manufacturing plant
83 rue Marcel Mérieux
69960 CORBAS - FRANCE

T. +33 (0)4 72 79 05 79
F. +33 (0)4 78 90 19 19
sales@tecofi.fr

BESOIN D'UNE RÉPONSE RAPIDE ?

WhatsApp Chat 
+33 623 898 706

Founded in 1985 in the east of Lyon, TECOFI is an independent French valves manufacturer. We contribute to the supply of equipment dedicated to ecological transformation. Established in more than 110 countries via our subsidiaries and above all an extensive network of partners, our vocation is to bring our recognized know-how in fluid conditioning techniques and to improve the quality of water networks throughout the world. We have developed tailor-made solutions adapted to the evolving markets of sewage, water supply, pumping and desalination, and also in the HVAC, paper, industry and biogas sectors.