

Data sheet

# Butterfly valve with electrical actuator VFY-WA

Description



- Position indicator
- Torque limiter
- Complete installation from factory - ready for installation

**Main Data:**

- DN 25-350
- $k_{vs}$  40-8520 m<sup>3</sup>/h
- PN 16 (10)
- EPDM Liner
- Stainless steel or Epoxy coated disc
- Medium:
  - Circulation water, drinking water or chilled glycolic water up to 50 %
- Medium temperature:
  - 10 ... 120 °C (PA disc)
  - 10 ... 130 °C (SS disc)
- Nominal voltage:
  - 24 V; 50 Hz/60 Hz
  - 230 V; 50 Hz/60 Hz
- Control input signal: On/Off or 3-point
- Torque: 20-600 Nm
- Grade of enclosure: IP66/68
- Ambient temperature: -10 ... 55 °C
- Duty rating IEC34: cycle S4 (50 % )
- Approvals: **CE EAC**

**Features:**

- Spline driven one piece shaft connected to spherically machined disc allows high torque transmission i.e. quick response and minimum back-lash
- Long term reliability due to upper and lower anti-friction bearings
- Safe maintenance: shaft blow out protection with circlip
- Manual operation

Ordering

Type **VFY-WA 230 V**

Picture	DN	$k_{VS}$ (m <sup>3</sup> /h)	PN	Tmax (°C)	Opening time (s)	Disc	Code No.
	25	40	10	130	12	Stainless Steel	<b>082G7350</b>
	32/40	62	16				<b>082G7351</b>
	50	79					<b>082G7400</b>
	65	174					<b>082G7401</b>
	80	275					<b>082G7402</b>
	100	496					<b>082G7403</b>
	125	883					<b>082G7404</b>
	150	1212					<b>082G7405</b>
	200	2500					<b>082G7410</b>
	250	3948					<b>082G7412</b>
	300	5635					<b>082G7413</b>
	350	8520					<b>082G7409</b>
	50	79	16	120	38	Epoxy Coating	<b>065B8440</b>
	65	174					<b>065B8441</b>
	80	275					<b>065B8442</b>
	100	496					<b>065B8443</b>
	125	883					<b>065B8444</b>
	150	1212					<b>065B8445</b>
	200	2500					<b>065B8446</b>
	250	3948					<b>065B8447</b>
	300	5635					<b>065B8448</b>
	350	8520					<b>065B8449</b>

Ordering (continuous)

Type VFY-WA 24 V

Picture	DN	K <sub>vs</sub> (m <sup>3</sup> /h)	PN	T <sub>max</sub> (°C)	Opening time (s)	Disc	Code No.
	25	40	10	130	12	Stainless Steel	082G7361
	32/40	62	16				082G7362
	50	79	16	120		Epoxy Coating	065B8450
	65	174					065B8451
	80	275			7	065B8452	
	100	496			12	065B8453	
	125	883			12	065B8454	
	150	1212			12	065B8455	
	200	2500	60	065B8456			
	250	3948	60	065B8457			

Spare parts

Replacement actuator **AMB-Y**

Actuator type	for DN	Torque	Opening time (s)	Power consumption (W)	Supply voltage (V)	Code No.
ER20	25/32/40/50/65	20	12	15	230 V	082G7381
ER35	80	35	7	45		082G7382
ER60	100	60	12	45		082G7383
ER60	125-150	60	12	45		082G7415
VS150	200	150	30	45		082G7398
VS300	250	300	60	45		082G7386
VT600	300-350	600	38	250	082G7396	
ER20	25/32/40/50/65	20	12	15	24 V	082G7388
ER35	80	35	7	45		082G7389
ER60	100	60	12	45		082G7390
ER60	125-150	60	12	45		082G7414
VS150	200	150	30	45		082G7399
VS300	250	300	60	45		082G7393

Note:

Contact Danfoss sales organization regarding information about replacement actuators for VFY butterfly valves purchased before 01/2015.

Replacement Liner **VFY-W Liner**

DN	PN	Liner	Code No.
25	16	EPDM	065B7580
32/40			065B7581
50			065B7582
65			065B7583
80			065B7584
100			065B7585
125			065B7578
150			065B7579
200			065B7592
250			065B7593
300			065B7594
350			065B7591

Technical data

**Actuator**

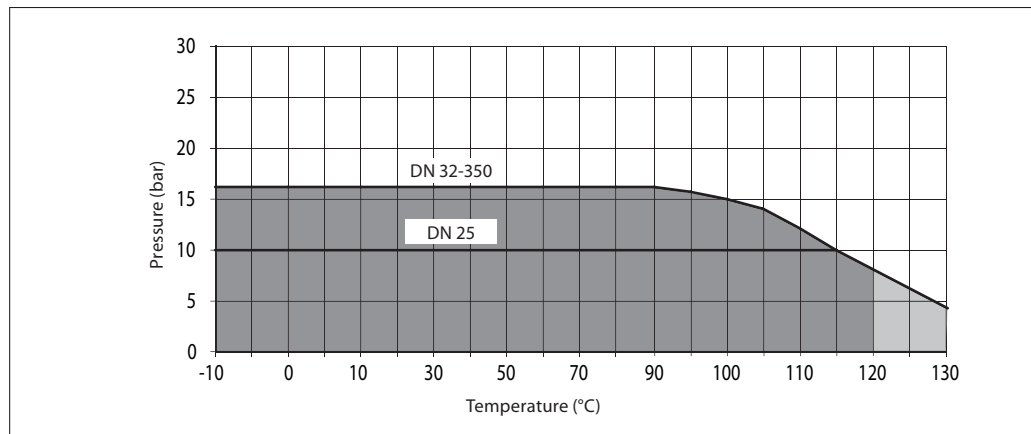
Power supply	DN 25-250	V	100-240 ac; 100-350 dc 15-30 ac; 12-48 dc
Power supply	DN 300-350		230 ac
Frequency (AC)		Hz	50/60
Control Input	DN 25-350		on/off or 3-point
Torque		Nm	20-600
Ambient temperature		°C	-10 ... 55
Duty Rating IEC34			S4 (50 %)
Grade of enclosure	DN 25-150		IP66
	DN 200-350		IP68 (1m, 72h)
marking in accordance with standards			Low voltage directive (LVD) 2006/95/EC: EN61000-3-2, EN61000-3-3, EN61000-6-4, EN61000-6-2
			EMC Directive 2004/108/EC: EN61010-1

**Valve**

Nominal diameter		DN	25-350
$k_{vs}$ value		m <sup>3</sup> /h	40-8520
Rotation angle			90°
Leakage rate			Acc. to PED 2014/68/EU, EN 12266-1, Rate A <sup>1)</sup>
Nominal pressure		PN	16 (10)
Medium			Circulation water, drinking water, chilled glycolic water up to 50%
Medium temperature	PA disc	°C	-10 ... 120 (see PT diagram)
	SS disc		-10 ... 130 (see PT diagram)
Connection			Centering lugs (Wafer type)
Mounting			Mounting between flanges
<b>Material</b>			
Body	DN 25-300		Cast iron EN GJL 250 (DIN GG25)
	DN 350		Ductile iron (DIN GGG40)
Disc			Ductile iron EN GJS 400-15 (DIN GGG 40) with Epoxy coating or Stainless Steel
Shaft			Stainless steel AISI 420
Liner			EPDM
Circlip			Steel XC 75 / Stainless steel
O-ring			Nitrile/Viton
Upper guide bush			Zinc coated S. + PTFE
Lower guide bush			Zinc coated S. + PTFE

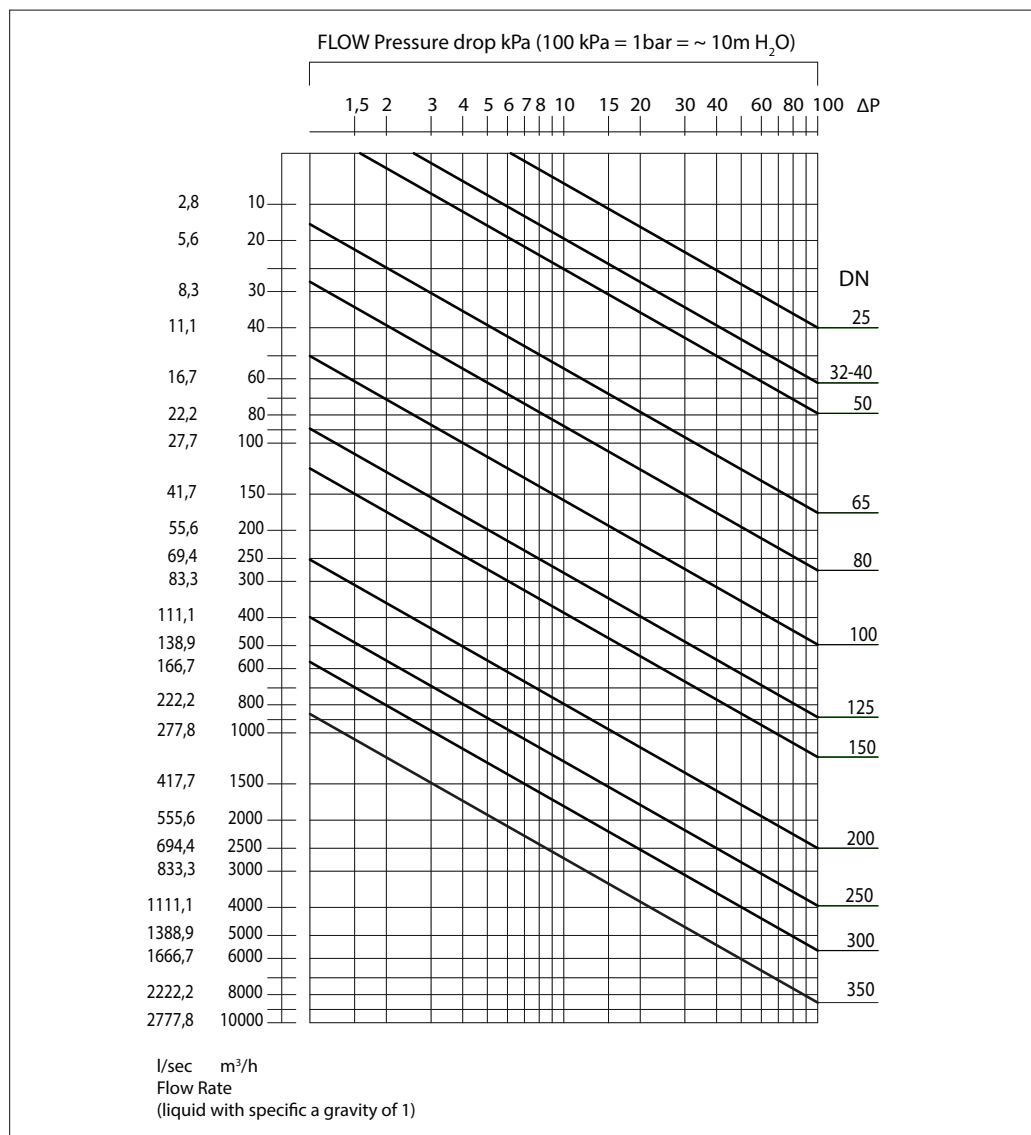
<sup>1)</sup> No visible defectable leakage during the testing procedure.

P-T diagram

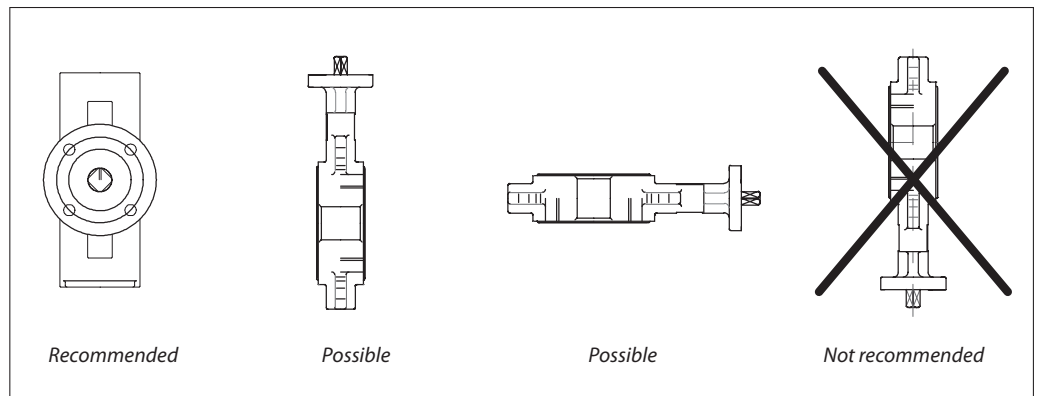


Headloss diagram

For water at 20°C

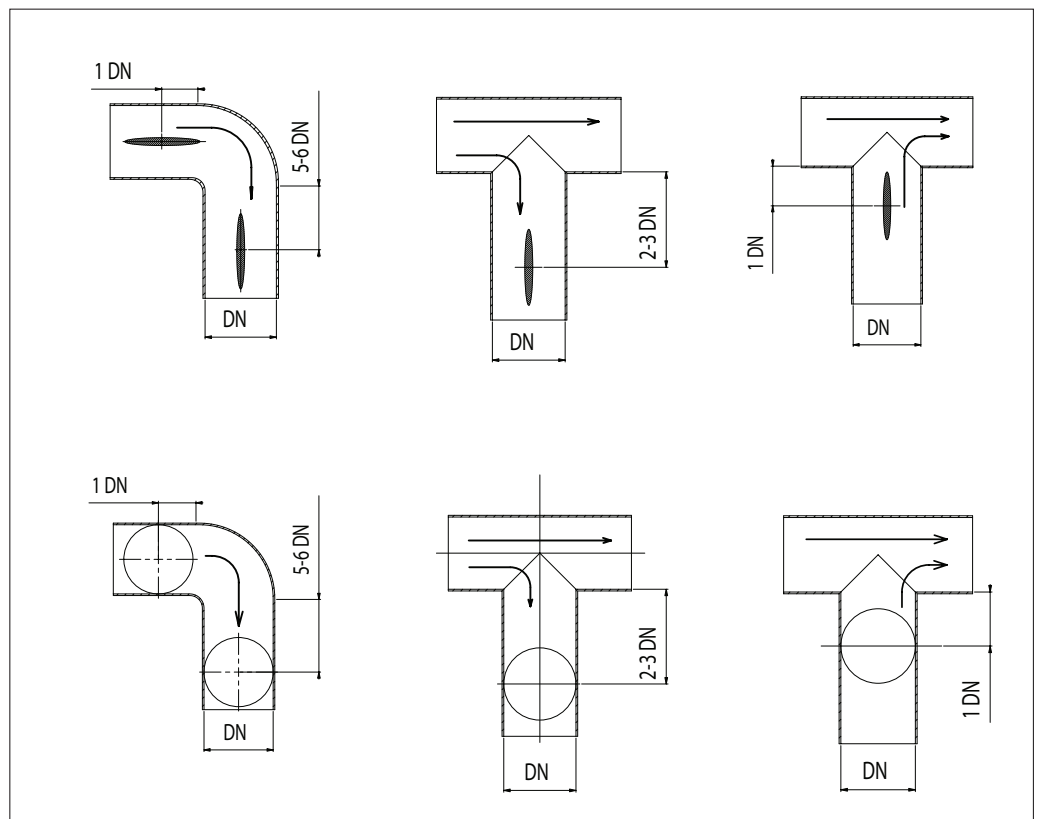


Installation positions



Installation conditions

It is recommended that distances indicated below are respected in order to prolong lifetime of the valve. Mounting the valve close to pipework junctions (turbulent zones) increases wear.

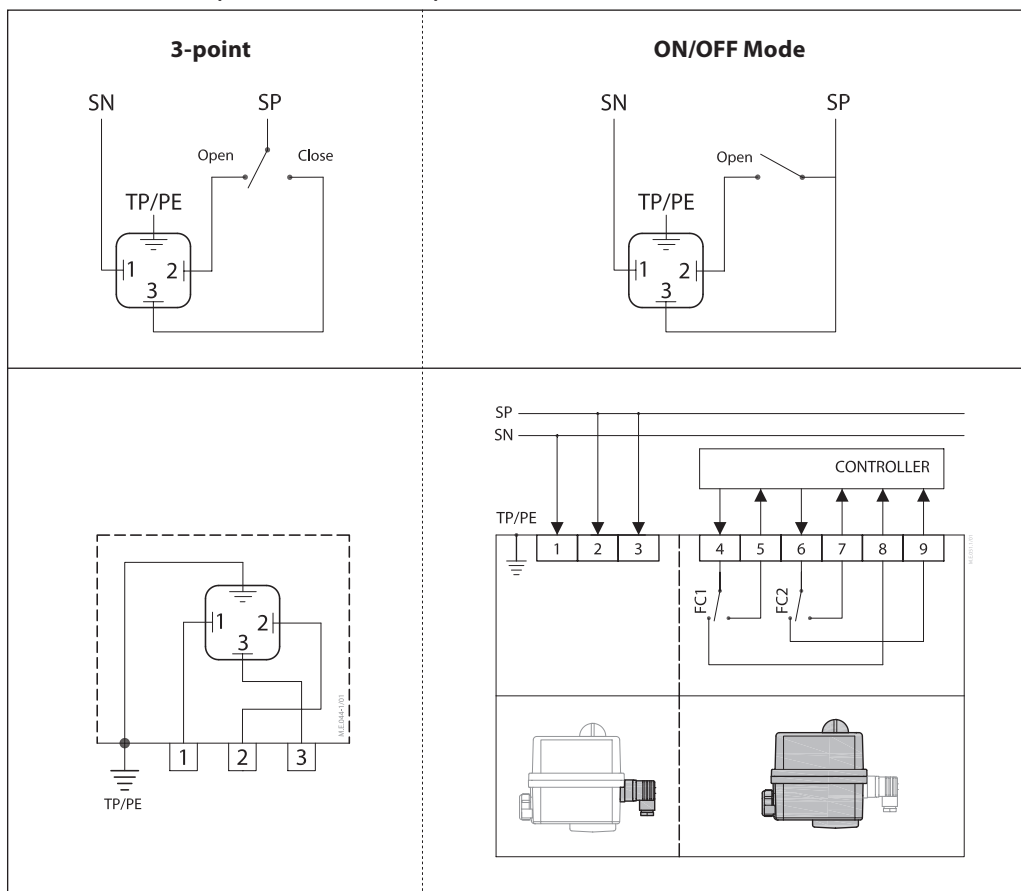


Wiring



24V, 230V

VFY-WA DN 25-150 (ACTUATOR TYPE ER)



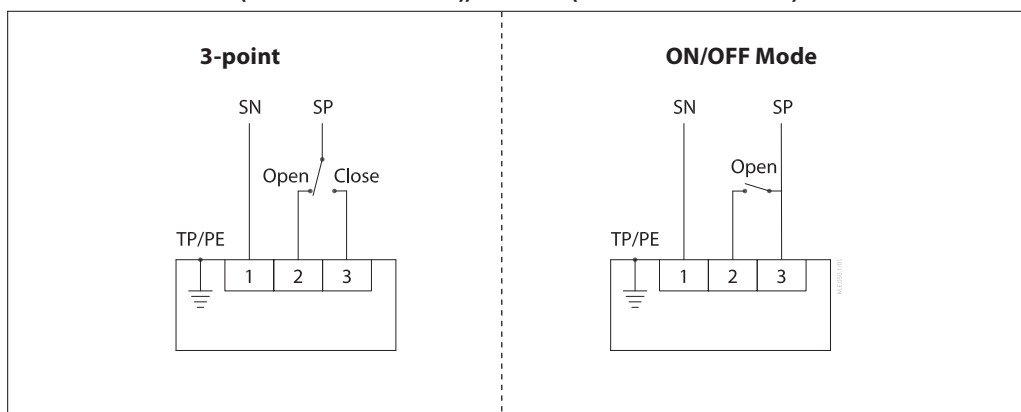
Wiring input / output

Terminal	Label	Function	Notes	
1	SN	0 V	Neutral	
2	SP	ON/OFF, 3-point	Power supply	
3				
4	4 (SP)	Common FC1	SP output - max 5A	
5				Feedback FC1
8				Feedback FC1
6	6 (SP)	Common FC2	SP output - max 5A	
7				Feedback FC2
9				Feedback FC2

Drives end switches and feedback output

Valve position	Feedback			
	5	7	8	9
Open	1	0	0	1
Close	0	1	1	0
Neutral	0	0	1	1

VFY-WA DN 200 - 250 (ACTUATOR TYPE VS), 300-350 (ACTUATOR TYPE VT)



Wiring (continuous)



24V, 230V

VFY-WA DN 200-250 (ACTUATOR TYPE VS), 300-350 (ACTUATOR TYPE VT)

**FC1** - feedback limit switch Open  
**FC2** - feedback limit switch Close  
**H** - anti-condensation heater

**Wiring input / output**

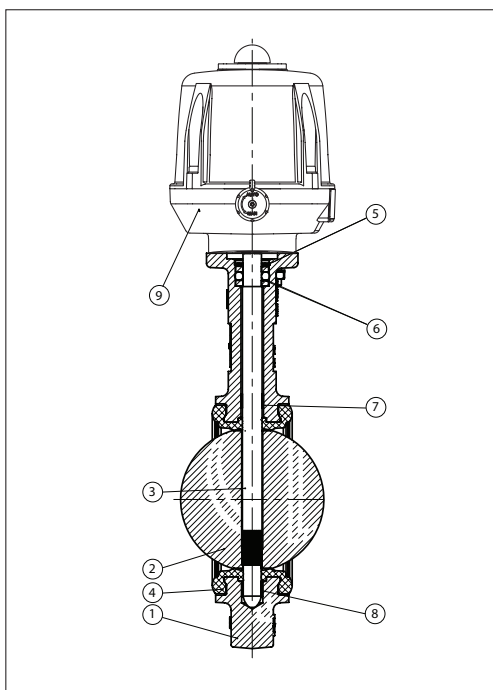
1	SN	0 V	Neutral
2	SP	ON/OFF, 3-point	Power supply
3			
4		SP output - max 5A	Common FC1
5			Feedback FC1
8			Feedback FC1
6		SP output - max 5A	Common FC2
7			Feedback FC2
9			Feedback FC2

**Drives end switches and feedback output**

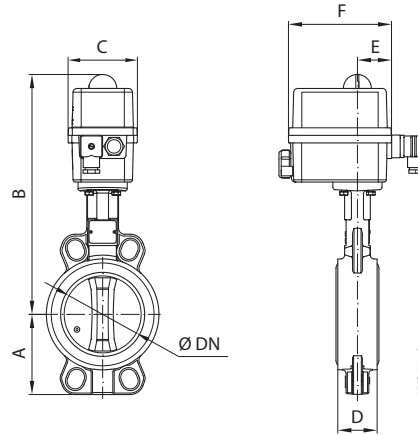
Valve position	Feedback			
	5	7	8	9
Open	1	0	0	1
Close	0	1	1	0
Neutral	0	0	1	1

Design

- 1. Body
- 2. Disc
- 3. Shaft
- 4. Liner
- 5. Circlip
- 6. O-ring
- 7. Upper guide bush
- 8. Lower guide bush
- 9. Actuator

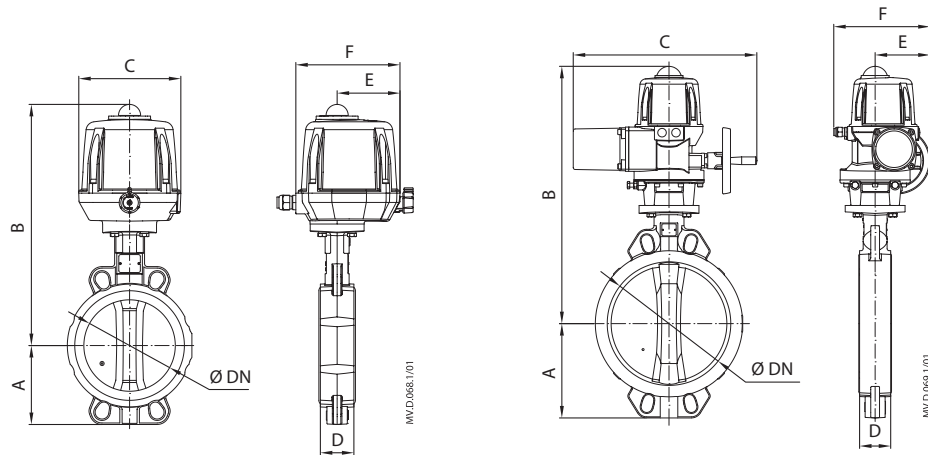


Dimensions



VFY-WA  
(with actuator AMB-Y ER for DN 25 - 150)

DN	mm						Weight (kg)
	A	B	C	D	E	F	
25	50	277	92	33	45	136	3.2
32/40	57	282	92	33	45	136	3.3
50	62	288	92	43	45	136	3.4
65	70	297	92	46	45	136	4.5
80	89	303	92	46	45	136	4.6
100	105	351	128	52	55	151	6.4
125	120	366	128	56	55	151	8.5
150	131	355	128	56	55	151	10.5



VFY-WA  
(with actuator AMB-Y VS for DN 200 - 250)

DN	mm						Weight (kg)
	A	B	C	D	F	E	
200	166	426	170	60	174	69	16.8
250	196	524	170	68	174	69	25.8

VFY-WA  
(with actuator AMB-Y VT for DN 300-350)

DN	mm						Weight (kg)
	A	B	C	D	F	E	
300	238	596	472	77	228	143	41
350	270	654	468	78	228	57	54

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