

## Solenoid valves VZWF, force pilot operated

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## Key features and product range overview

### Function



Normally closed solenoid valve with diaphragm and forced lifting. When the solenoid is energised, the differential pressure from the secondary side of

the diaphragm is reduced via an internal pilot hole. The effective differential pressure lifts the diaphragm away from the valve seat. If

there is no differential pressure, the diaphragm is lifted directly by the solenoid. The valve opens and closes

without a differential pressure between the inlet and outlet.

### General

-  - Connecting thread  
G1/4 ... G2
-  - Flow rate Kv  
1.8 ... 28 m³/h

### Application

- Suitable for closed applications such as cooling or filling systems
- Vacuum
- Liquid gas
- Filling systems

### Design

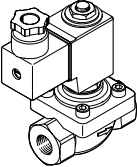

- Diaphragm valves
- Forced lifting of the valve diaphragm
- 2/2-way valve, normally closed

### Advantages

- Choice of sealing materials for different fields of applications
- Pressure of medium: 0 bar or higher

### Note

The valves are suitable for vacuum with Pabs > 100 mbar. Please ensure the flow direction corresponds to the direction of the arrow.

Design	Type	Valve body connection	Nominal width DN	Nominal pressure of valve body PN	→ Page
	VZWF-...	G1/4	13.5	40	4
		G3/8	13.5		
		G1/2	13.5		
		G3/4	27.5		
		G1	27.5		
	VZWF-...	G1 1/4	40	40	8
		G1 1/2	40		
		G2	50		

## Type codes

001	Series	
VZWF	Solenoid valve, force-controlled	

002	Product version	
	Standard	
B	Function-optimised	

003	Directional control valve type	
L	In-line valve	

004	Valve function	
M22C	2/2-way valve, normally closed	

005	Process valve connection	
G14	G1/4	
G38	G3/8	
G12	G1/2	
G34	G3/4	
G1	G1	
G114	G1 1/4	
G112	G1 1/2	
G2	G2	

006	Nominal width	
135	13.5 mm	
275	27.5 mm	
400	40 mm	
500	50 mm	

007	Sealant	
	Standard	
E	EPDM	
V	FPM	

008	Nominal operating voltage	
1	24 V DC	
2A	110 V AC/50-60 Hz	
3A	230 V AC/50-60 Hz	

009	Electrical connection	
P4	Plug socket, 3-wire	

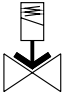
010	Pressure of medium [bar]	
6	6	
10	10	


011	Corrosion protection	
	Standard	
R1	Stainless steel	


## Solenoid valves VZWF, force pilot operated

### Data sheet – Connecting thread G1/4 ... G1

Function



-  - Connecting thread G1/4 ... G1

-  - Flow rate Kv 1.8 ... 11 m<sup>3</sup>/h



General technical data					
Valve body connection	G1/4	G3/8	G1/2	G3/4	G1
Nominal width DN	13.5	13.5	13.5	27.5	27.5
Valve function	2/2-way, single solenoid, closed				
Design	Diaphragm valve, force pilot operated				
Type of mounting	In-line installation				
Actuation type	Electrical				
Manual override	None				
Mounting position	Solenoid upright				
Sealing principle	Soft				
Flow direction	Not reversible				
Max. viscosity	[mm <sup>2</sup> /s]	22			
Degree of protection	IP65				
Product weight	[g]	1000			1500

## Data sheet – Connecting thread G1/4 ... G1

Operating and environmental conditions		G 1/4	G 3/8	G 1/2	G 3/4	G 1
Valve body connection						
Switching time on	[ms]	130			275	
Switching time off	[ms]	180			290	
Standard nominal flow rate	[l/min]	1920	2350	2660	8020	11750
Flow rate	[m <sup>3</sup> /h]	1.8	2.2	2.5	7.5	11
Nominal pressure of valve body PN		40				
Differential pressure	[bar]	0				
Pressure of medium <sup>1)</sup>	[bar]	0 ... 10			0 ... 6	
Medium		Compressed air to ISO 8573-1:2010 [7::-]				
		Inert gases				
		Mineral oil				
		Water				
		Neutral liquids				
		Other flow media on request				
Ambient temperature	[°C]	-10 ... +35°C				
Temperature of medium	[°C]	-10 ... +80°C				
Leak rate to EN 12266-1		A				
Corrosion resistance class CRC <sup>2)</sup>						
Cast stainless steel		3				
Cast brass		1				

1) The valves are suitable for vacuum with Pabs > 100 mbar. Please ensure the flow direction corresponds to the direction of the arrow.

2) Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. Externally visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment.

Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. Dry indoor application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

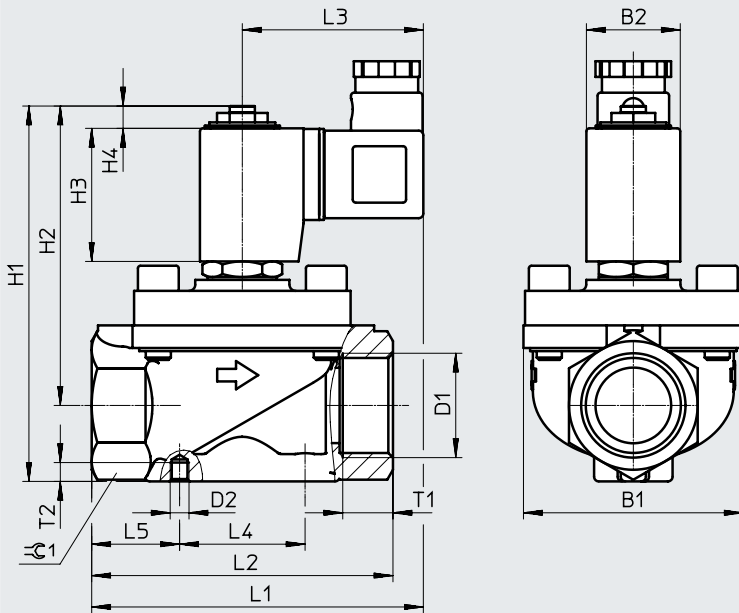
Materials		Material number
Solenoid valves		
Housing	Cast brass	CW617N
	Cast stainless steel	1.4581
Screws	High-alloy stainless steel	1.4301
Seals	NBR	-
	FPM	-
	EPDM	-
Note on materials	Contains paint-wetting impairment substances	
	RoHS-compliant	

Electrical data		VZWF- ... 1	VZWF- ... 2A	VZWF- ... 3A
Electrical connection		Plug to EN 175301-803 type A, square design		
CE marking as per EU Pressure Equipment Directive		-	Yes	Yes
<b>Characteristic coil data</b>				
Direct current DC	[V]	24	-	-
Alternating current AC	[V]	-	110	230
	[W]	11	-	-
Pick-up power	[VA]	-	19	18
Holding power	[VA]	-	16	15
	[Hz]	-	50, 60	50, 60
Permissible voltage fluctuations	[%]	±10		

Data sheet – Connecting thread G1/4 ... G1

Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



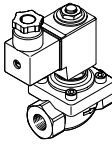
	B1	B2	D1	D2	H1	H2	H3	H4	L1	L2	L3	L4	L5	T1	T2	≈G1
VZWF-B-L-M22C-G14-135-...	48	30	G1/4	M4	101	86	42	7	92	67	58	25	21	12	4	27
VZWF-B-L-M22C-G14-135-...-R1	44	30	G1/4	M4	101	86	42	7	94	67	58	25	21	12	4	27
VZWF-B-L-M22C-G38-135-...	48	30	G3/8	M4	101	86	42	7	92	67	58	25	21	12	4	27
VZWF-B-L-M22C-G38-135-...-R1	44	30	G3/8	M4	101	86	42	7	94	67	58	25	21	12	4	27
VZWF-B-L-M22C-G12-135-...	48	30	G1/2	M4	101	86	42	7	92	67	58	25	21	12	4	27
VZWF-B-L-M22C-G12-135-...-R1	44	30	G1/2	M4	101	86	42	7	94	67	58	25	21	12	4	27
VZWF-B-L-M22C-G34-275-...	70	30	G3/4	M6	120	96	42	7	106	96	58	40	28	16	6	41
VZWF-B-L-M22C-G1-275-...	70	30	G1	M6	120	96	42	7	106	96	58	40	28	16	6	41

★ Core product range

Ordering data – Solenoid valve VZWF

	Valve body connection	Brass housing	
		Part no.	Type
	G1/4	★ 1492110	VZWF-B-L-M22C-G14-135-1P4-10
	G3/8	★ 1492111	VZWF-B-L-M22C-G38-135-1P4-10
	G1/2	★ 1492112	VZWF-B-L-M22C-G12-135-1P4-10
	G3/4	★ 1492113	VZWF-B-L-M22C-G34-275-1P4-6
	G1	★ 1492114	VZWF-B-L-M22C-G1-275-1P4-6


## Data sheet – Connecting thread G1/4 ... G1


Ordering data – Solenoid valve VZWF					
	Valve body connection	Brass housing		Stainless steel casting housing	
		Part no.	Type	Part no.	Type
	G1/4	1492126	VZWF-B-L-M22C-G14-135-E-1P4-10	1492118	VZWF-B-L-M22C-G14-135-1P4-10-R1
		1492142	VZWF-B-L-M22C-G14-135-V-1P4-10	1492134	VZWF-B-L-M22C-G14-135-E-1P4-10-R1
		1492206	VZWF-B-L-M22C-G14-135-2AP4-10	1492150	VZWF-B-L-M22C-G14-135-V-1P4-10-R1
		1492222	VZWF-B-L-M22C-G14-135-E-2AP4-10	1492214	VZWF-B-L-M22C-G14-135-2AP4-10-R1
		1492238	VZWF-B-L-M22C-G14-135-V-2AP4-10	1492230	VZWF-B-L-M22C-G14-135-E-2AP4-10-R1
		1492302	VZWF-B-L-M22C-G14-135-3AP4-10	1492246	VZWF-B-L-M22C-G14-135-V-2AP4-10-R1
		1492318	VZWF-B-L-M22C-G14-135-E-3AP4-10	1492310	VZWF-B-L-M22C-G14-135-3AP4-10-R1
		1492334	VZWF-B-L-M22C-G14-135-V-3AP4-10	1492326	VZWF-B-L-M22C-G14-135-E-3AP4-10-R1
	G3/8	1492127	VZWF-B-L-M22C-G38-135-E-1P4-10	1492119	VZWF-B-L-M22C-G38-135-1P4-10-R1
		1492143	VZWF-B-L-M22C-G38-135-V-1P4-10	1492135	VZWF-B-L-M22C-G38-135-E-1P4-10-R1
		1492207	VZWF-B-L-M22C-G38-135-2AP4-10	1492151	VZWF-B-L-M22C-G38-135-V-1P4-10-R1
		1492223	VZWF-B-L-M22C-G38-135-E-2AP4-10	1492215	VZWF-B-L-M22C-G38-135-2AP4-10-R1
		1492239	VZWF-B-L-M22C-G38-135-V-2AP4-10	1492231	VZWF-B-L-M22C-G38-135-E-2AP4-10-R1
		1492303	VZWF-B-L-M22C-G38-135-3AP4-10	1492247	VZWF-B-L-M22C-G38-135-V-2AP4-10-R1
		1492319	VZWF-B-L-M22C-G38-135-E-3AP4-10	1492311	VZWF-B-L-M22C-G38-135-3AP4-10-R1
		1492335	VZWF-B-L-M22C-G38-135-V-3AP4-10	1492327	VZWF-B-L-M22C-G38-135-E-3AP4-10-R1
	G1/2	1492128	VZWF-B-L-M22C-G12-135-E-1P4-10	1492120	VZWF-B-L-M22C-G12-135-1P4-10-R1
		1492144	VZWF-B-L-M22C-G12-135-V-1P4-10	1492136	VZWF-B-L-M22C-G12-135-E-1P4-10-R1
		1492208	VZWF-B-L-M22C-G12-135-2AP4-10	1492152	VZWF-B-L-M22C-G12-135-V-1P4-10-R1
		1492224	VZWF-B-L-M22C-G12-135-E-2AP4-10	1492216	VZWF-B-L-M22C-G12-135-2AP4-10-R1
		1492240	VZWF-B-L-M22C-G12-135-V-2AP4-10	1492232	VZWF-B-L-M22C-G12-135-E-2AP4-10-R1
		1492304	VZWF-B-L-M22C-G12-135-3AP4-10	1492248	VZWF-B-L-M22C-G12-135-V-2AP4-10-R1
		1492320	VZWF-B-L-M22C-G12-135-E-3AP4-10	1492312	VZWF-B-L-M22C-G12-135-3AP4-10-R1
		1492336	VZWF-B-L-M22C-G12-135-V-3AP4-10	1492328	VZWF-B-L-M22C-G12-135-E-3AP4-10-R1
	G3/4	1492129	VZWF-B-L-M22C-G34-275-E-1P4-6	1492121	VZWF-B-L-M22C-G34-275-1P4-6-R1
		1492145	VZWF-B-L-M22C-G34-275-V-1P4-6	1492137	VZWF-B-L-M22C-G34-275-E-1P4-6-R1
		1492209	VZWF-B-L-M22C-G34-275-2AP4-6	1492153	VZWF-B-L-M22C-G34-275-V-1P4-6-R1
		1492225	VZWF-B-L-M22C-G34-275-E-2AP4-6	1492217	VZWF-B-L-M22C-G34-275-2AP4-6-R1
1492241		VZWF-B-L-M22C-G34-275-V-2AP4-6	1492233	VZWF-B-L-M22C-G34-275-E-2AP4-6-R1	
1492305		VZWF-B-L-M22C-G34-275-3AP4-6	1492249	VZWF-B-L-M22C-G34-275-V-2AP4-6-R1	
1492321		VZWF-B-L-M22C-G34-275-E-3AP4-6	1492313	VZWF-B-L-M22C-G34-275-3AP4-6-R1	
1492337		VZWF-B-L-M22C-G34-275-V-3AP4-6	1492329	VZWF-B-L-M22C-G34-275-E-3AP4-6-R1	
G1	1492130	VZWF-B-L-M22C-G1-275-E-1P4-6	1492122	VZWF-B-L-M22C-G1-275-1P4-6-R1	
	1492146	VZWF-B-L-M22C-G1-275-V-1P4-6	1492138	VZWF-B-L-M22C-G1-275-E-1P4-6-R1	
	1492210	VZWF-B-L-M22C-G1-275-2AP4-6	1492154	VZWF-B-L-M22C-G1-275-V-1P4-6-R1	
	1492226	VZWF-B-L-M22C-G1-275-E-2AP4-6	1492218	VZWF-B-L-M22C-G1-275-2AP4-6-R1	
	1492242	VZWF-B-L-M22C-G1-275-V-2AP4-6	1492234	VZWF-B-L-M22C-G1-275-E-2AP4-6-R1	
	1492306	VZWF-B-L-M22C-G1-275-3AP4-6	1492250	VZWF-B-L-M22C-G1-275-V-2AP4-6-R1	
	1492322	VZWF-B-L-M22C-G1-275-E-3AP4-6	1492314	VZWF-B-L-M22C-G1-275-3AP4-6-R1	
	1492338	VZWF-B-L-M22C-G1-275-V-3AP4-6	1492330	VZWF-B-L-M22C-G1-275-E-3AP4-6-R1	
		1492346	VZWF-B-L-M22C-G1-275-V-3AP4-6-R1		

Data sheet – Connecting thread G1 1/4 ... G2

Function



-  - Connecting thread  
G1 1/4 ... G2

-  - Flow rate Kv 20 ... 28 m<sup>3</sup>/h



General technical data			
Valve body connection	G1 1/4	G1 1/2	G2
Nominal width DN	40	40	50
Valve function	2/2-way, single solenoid, closed		
Design	Diaphragm valve, force pilot operated		
Type of mounting	In-line installation		
Actuation type	Electrical		
Manual override	None		
Mounting position	Solenoid upright		
Sealing principle	Soft		
Flow direction	Not reversible		
Max. viscosity	[mm <sup>2</sup> /s]	22	
Degree of protection	IP65		
Product weight	[g]	4500	6500



## Data sheet – G1 1/4 ... G2

Operating and environmental conditions		G1 1/4	G1 1/2	G2
Valve body connection				
Switching time on	[ms]	620		1220
Switching time off	[ms]	1140		2140
Standard nominal flow rate	[l/min]	21370	23500	29900
Flow rate	[m <sup>3</sup> /h]	20	22.5	28
Nominal pressure of valve body PN		40		
Differential pressure	[bar]	0		
Pressure of medium <sup>1)</sup>	[bar]	0 ... 10		0 ... 6
Medium		Compressed air to ISO 8573-1:2010 [7::-]		
		Inert gases		
		Mineral oil		
		Water		
		Neutral liquids		
		Other flow media on request		
Ambient temperature	[°C]	-10 ... +35°C		
Temperature of medium	[°C]	-10 ... +80°C		
Leak rate to EN 12266-1		A		
Corrosion resistance class CRC <sup>2)</sup>				
Cast stainless steel		3		
Cast brass		1		

1) The valves are suitable for vacuum with Pabs > 100 mbar. Please ensure the flow direction corresponds to the direction of the arrow.

2) Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. Externally visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment.

Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. Dry indoor application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

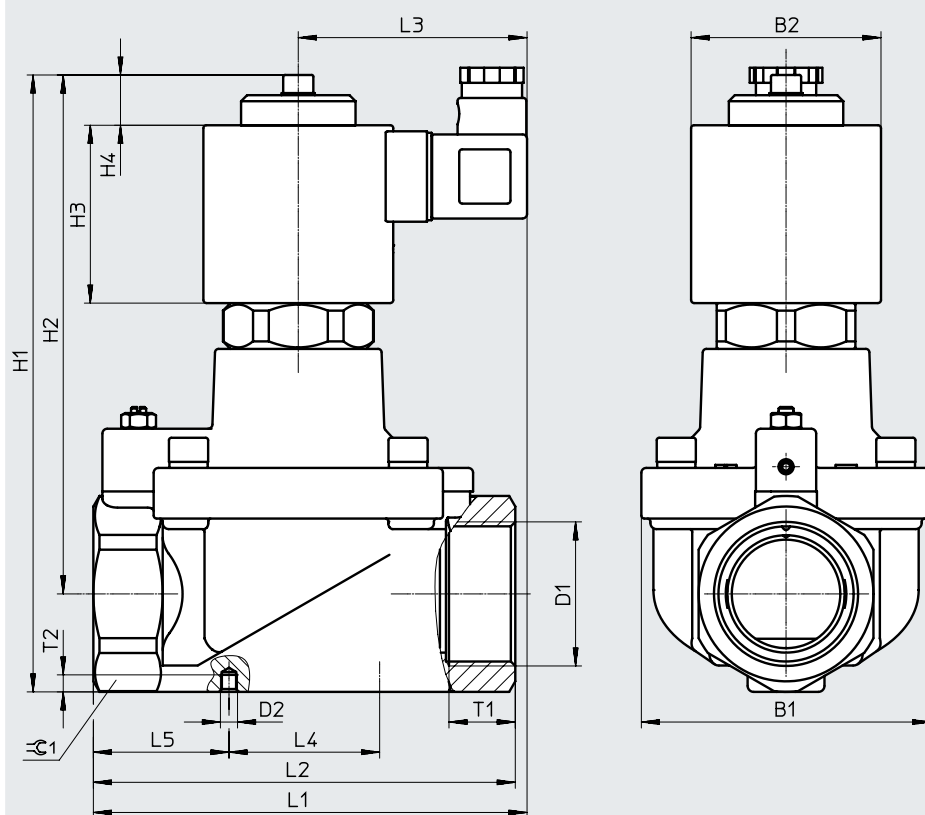
Materials		Material number
Solenoid valves		
Housing	Cast brass	CW617N
	Cast stainless steel	1.4581
Screws	High-alloy stainless steel	1.4301
Seals	NBR	-
	FPM	-
	EPDM	-
Note on materials	Contains paint-wetting impairment substances	
	RoHS-compliant	

Data sheet – G1 1/4 ... G2

Electrical data	VZWF- ... 1	VZWF- ... 2A	VZWF- ... 3A
Electrical connection	Plug to EN 175301-803 type A, square design		
CE marking as per EU Pressure Equipment Directive	-	Yes	Yes
<b>Characteristic coil data</b>			
Direct current DC	[V] 24	-	-
Alternating current AC	[V] -	110	230
	[W] 30	-	-
Pick-up power	[VA] -	30	30
Holding power	[VA] -	30	30
	[Hz] -	50, 60	50, 60
Permissible voltage fluctuations	[%] ±10		

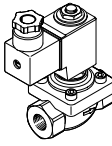
Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



	B1	B2	D1	D2	H1	H2	H3	H4	L1	L2	L3	L4	L5	T1	T2	≈G1
VZWF-L-M22C-G114-400-...	96	63	G1 1/4	M6	205	173	59	17	148	140	76	-	-	22	-	58
VZWF-L-M22C-G112-400-...	96	63	G1 1/2	M6	205	173	59	17	148	140	76	-	-	22	-	58
VZWF-L-M22C-G2-500-...	112	63	G2	M6	218	179	59	17	159	168	76	60	55	25	6	70

## Data sheet – G1 1/4 ... G2

Ordering data – Solenoid valve VZWF					
	Valve body connection	Brass housing		Stainless steel casting housing	
		Part no.	Type	Part no.	Type
	G1 1/4	1492115	VZWF-L-M22C-G114-400-1P4-10	1492123	VZWF-L-M22C-G114-400-1P4-10-R1
		1492131	VZWF-L-M22C-G114-400-E-1P4-10	1492139	VZWF-L-M22C-G114-400-E-1P4-10-R1
		1492147	VZWF-L-M22C-G114-400-V-1P4-10	1492155	VZWF-L-M22C-G114-400-V-1P4-10-R1
		1492211	VZWF-L-M22C-G114-400-2AP4-10	1492219	VZWF-L-M22C-G114-400-2AP4-10-R1
		1492227	VZWF-L-M22C-G114-400-E-2AP4-10	1492235	VZWF-L-M22C-G114-400-E-2AP4-10-R1
		1492243	VZWF-L-M22C-G114-400-V-2AP4-10	1492251	VZWF-L-M22C-G114-400-V-2AP4-10-R1
		1492307	VZWF-L-M22C-G114-400-3AP4-10	1492315	VZWF-L-M22C-G114-400-3AP4-10-R1
		1492323	VZWF-L-M22C-G114-400-E-3AP4-10	1492331	VZWF-L-M22C-G114-400-E-3AP4-10-R1
		1492339	VZWF-L-M22C-G114-400-V-3AP4-10	1492347	VZWF-L-M22C-G114-400-V-3AP4-10-R1
	G1 1/2	1492116	VZWF-L-M22C-G112-400-1P4-10	1492124	VZWF-L-M22C-G112-400-1P4-10-R1
		1492132	VZWF-L-M22C-G112-400-E-1P4-10	1492140	VZWF-L-M22C-G112-400-E-1P4-10-R1
		1492148	VZWF-L-M22C-G112-400-V-1P4-10	1492156	VZWF-L-M22C-G112-400-V-1P4-10-R1
		1492212	VZWF-L-M22C-G112-400-2AP4-10	1492220	VZWF-L-M22C-G112-400-2AP4-10-R1
		1492228	VZWF-L-M22C-G112-400-E-2AP4-10	1492236	VZWF-L-M22C-G112-400-E-2AP4-10-R1
		1492244	VZWF-L-M22C-G112-400-V-2AP4-10	1492252	VZWF-L-M22C-G112-400-V-2AP4-10-R1
		1492308	VZWF-L-M22C-G112-400-3AP4-10	1492316	VZWF-L-M22C-G112-400-3AP4-10-R1
		1492324	VZWF-L-M22C-G112-400-E-3AP4-10	1492332	VZWF-L-M22C-G112-400-E-3AP4-10-R1
		1492340	VZWF-L-M22C-G112-400-V-3AP4-10	1492348	VZWF-L-M22C-G112-400-V-3AP4-10-R1
	G2	1492117	VZWF-L-M22C-G2-500-1P4-6	1492125	VZWF-L-M22C-G2-500-1P4-6-R1
		1492133	VZWF-L-M22C-G2-500-E-1P4-6	1492141	VZWF-L-M22C-G2-500-E-1P4-6-R1
		1492149	VZWF-L-M22C-G2-500-V-1P4-6	1492157	VZWF-L-M22C-G2-500-V-1P4-6-R1
		1492213	VZWF-L-M22C-G2-500-2AP4-6	1492221	VZWF-L-M22C-G2-500-2AP4-6-R1
		1492229	VZWF-L-M22C-G2-500-E-2AP4-6	1492237	VZWF-L-M22C-G2-500-E-2AP4-6-R1
		1492245	VZWF-L-M22C-G2-500-V-2AP4-6	1492253	VZWF-L-M22C-G2-500-V-2AP4-6-R1
		1492309	VZWF-L-M22C-G2-500-3AP4-6	1492317	VZWF-L-M22C-G2-500-3AP4-6-R1
		1492325	VZWF-L-M22C-G2-500-E-3AP4-6	1492333	VZWF-L-M22C-G2-500-E-3AP4-6-R1
		1492341	VZWF-L-M22C-G2-500-V-3AP4-6	1492349	VZWF-L-M22C-G2-500-V-3AP4-6-R1