

EF..M type
directional solenoid valves - 2 way / 2 positions

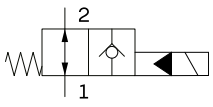
- Poppet type
- Piloted acting with on-off solenoid
- External zinc-plated and corrosion-proof components
- Normally open and closed configurations
- Different types of emergencies available
- From SAE08 to SAE16 cavities

Technical specifications and diagrams are measured with mineral oil of 46 cSt viscosity at 40°C *(104°F)* temperature.

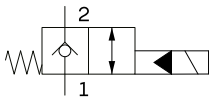
		EF08M	EF10M	EF12M	EF16M
Max. flow		40 l/min *(10.5 US gpm)*	70 l/min *(18.5 US gpm)*	150 l/min *(40 US gpm)*	150 l/min *(40 US gpm)*
Max. pressure		380 bar *(5500 psi)*			
Oil leakage	at 210 bar *(3050 psi)*	0.50 cm^3/min *(0.030 in^3/min)*			
Fluid		mineral based or sinthetic hydraulic fluid with lubricating properties			
Viscosity		10-200 cSt			
Max level of contamination		18/16/13 ISO4406			
Fluid temperature	with NBR seals+Polyurethane with FPM seals	from -25°C *(-13°F)* to 90°C *(194°F)* from -20°C *(-4°F)* to 110°C *(230°F)*			
Environmental temp. for working conditions		from -20°C *(-4°F)* to 60°C *(140°F)*			
Cavity		SAE 08/2	SAE 10/2	SAE 12/2	SAE 16/2
Coil type*		BER			
Nominal voltages		12VDC - 24VDC ±10%			
Power rating		19 W (12VDC - 24VDC)			
Weight		0.135 kg *(0.30 lb)*	0.170 kg *(0.37 lb)*	0.230 kg *(0.51 lb)*	0.315 kg *(0.69 lb)*

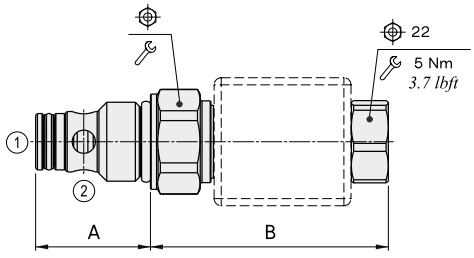
NOTE - For different conditions, please contact Walvoil Sales Dpt. - *For coils further features see from page 201.

Normally open configuration



Normally closed configuration



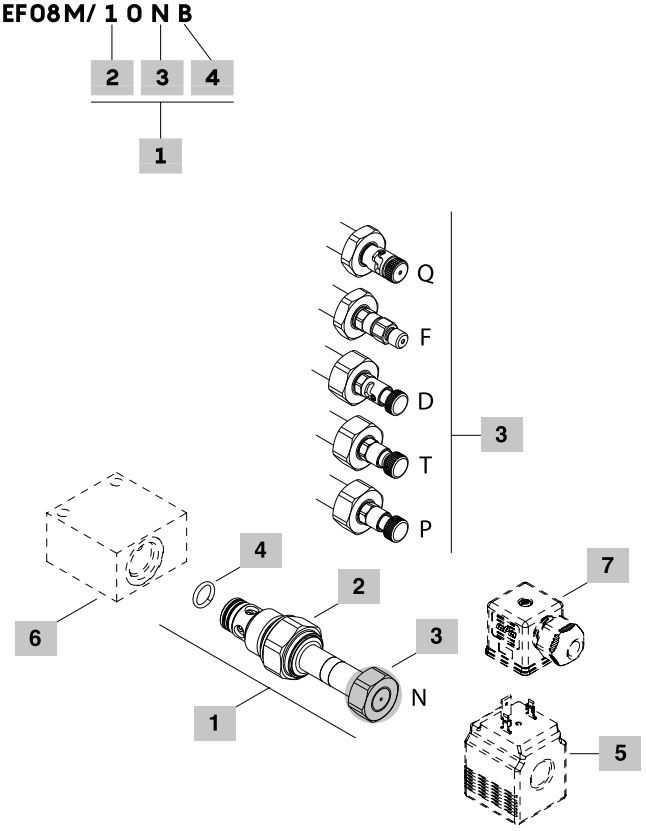


Valve type	A		B N without emergency				
	mm	in	mm	in		Nm	lbft
EF10M/1	32.3	1.27	66.9	2.63	27	50	37

For dimensions with different type of emergency see list page 151

Ordering codes and description composition

EF08M/ 1 0 N B



1 Cartridges

TYPE	CODE	DESCRIPTION
SAE cavity 08/2		
EF08M/10NB	0EF08002000	Normally open (N.O.) without emergency
EF08M/10PB	0EF08002002	(N.O.) push button emergency
EF08M/10TB	0EF08002003	(N.O.) screw type emergency
EF08M/10DB	0EF08002004	(N.O.) push type with detent emergency
EF08M/20NB	0EF08002001	Normally closed (N.C.) without emergency
EF08M/20FB	0EF08002005	(N.C.) pull button emergency
EF08M/20TB	0EF08002006	(N.C.) screw type emergency
EF08M/20QB	0EF08002007	(N.C.) pull type with detent emergency
SAE cavity 10/2		
EF10M/10NB	0EF10002000	Normally open (N.O.) without emergency
EF10M/10PB	0EF10002002	(N.O.) push button emergency
EF10M/10TB	0EF10002003	(N.O.) screw type emergency
EF10M/10DB	0EF10002004	(N.O.) push type with detent emergency
EF10M/20NB	0EF10002001	Normally closed (N.C.) without emergency
EF10M/20FB	0EF10002005	(N.C.) pull button emergency
EF10M/20TB	0EF10002006	(N.C.) screw type emergency
EF10M/20QB	0EF10002007	(N.C.) pull type with detent emergency
SAE cavity 12/2		
EF12M/10NB	0EF12002000	Normally open (N.O.) without emergency
EF12M/10PB	0EF12002002	(N.O.) push button emergency
EF12M/10TB	0EF12002003	(N.O.) screw type emergency
EF12M/10DB	0EF12002004	(N.O.) push type with detent emergency
EF12M/20NB	0EF12002001	Normally closed (N.C.) without emergency
EF12M/20FB	0EF12002005	(N.C.) pull button emergency
EF12M/20TB	0EF12002006	(N.C.) screw type emergency
EF12M/20QB	0EF12002007	(N.C.) pull type with detent emergency
SAE cavity 16/2		
EF16M/10NB	0EF16002000	Normally open (N.O.) without emergency
EF16M/10PB	0EF16002002	(N.O.) push button emergency
EF16M/10TB	0EF16002003	(N.O.) screw type emergency
EF16M/10DB	0EF16002004	(N.O.) push type with detent emergency
EF16M/20NB	0EF16002001	Normally closed (N.C.) without emergency
EF16M/20FB	0EF16002005	(N.C.) pull button emergency
EF16M/20TB	0EF16002006	(N.C.) screw type emergency
EF16M/20QB	0EF16002007	(N.C.) pull type with detent emergency

2 Spool

TYPE	DESCRIPTION
1	Normally open configuration
2	Normally closed configuration

3 Emergency

TYPE	DESCRIPTION
N	Without emergency
P	Push button type (N.O.)
T	Screw type
D	Push type with detent (N.O.)
F	Pull button type (N.C.)
Q	Pull type with detent (N.C.)

4 Seals

TYPE	DESCRIPTION
B	**NBR (Buna)+Polyurethane** o-ring seals, std configuration
V	**FPM (Viton)** o-ring seals, contact Sales Dept

5 Coil

TYPE	CODE	DESCRIPTION
BER12VDC	4SLE001200A	12VDC-ISO4400 coil

For complete coils list see page 201

6 Valve body

TYPE	CODE	DESCRIPTION
SAE08/2-G 3/8	3CC0820C11	Aluminium body for cavity 08 valve, G 3/8 std thread
SAE10/2-G 3/8	3CC1020C11	Aluminium body for cavity 10 valve, G 3/8 std thread
SAE12/2-G 1/2	3CC1220D11	Aluminium body for cavity 12 valve, G 1/2 std thread
SAE16/2-G 3/4	3CC1620E11	Aluminium body for cavity 16 valve, G 3/4 std thread

Note: aluminium body can stand up to 210 bar *(3050 psi)*
For steel bodies or different threading see from page 208

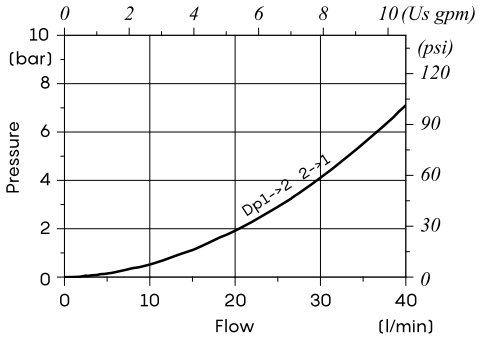
7 Connector

TYPE	CODE	DESCRIPTION
ISO4400	4CN1009995B	Connector

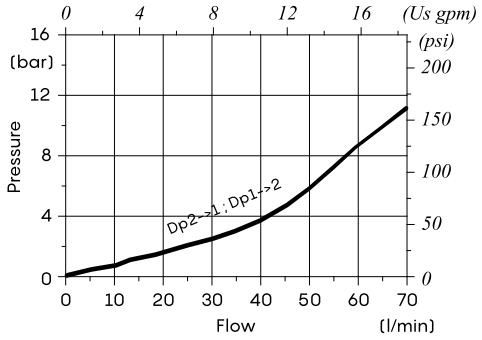
For complete connectors list see from page 201

Rating diagrams

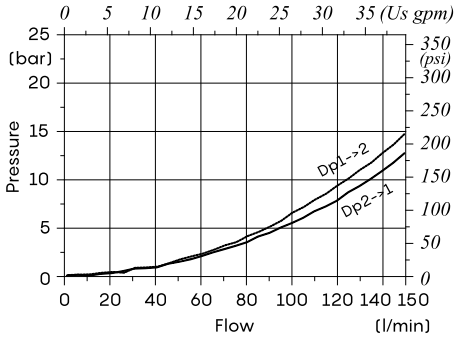
EF08M/10NB - EF08M/20NB
pressure drop vs. flow



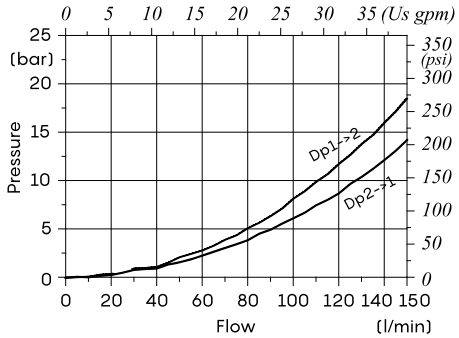
EF10M/10NB - EF10M/20NB
pressure drop vs. flow



EF12M/10NB - EF16M/10NB
pressure drop vs. flow



EF12M/20NB - EF16M/20NB
pressure drop vs. flow



Types and dimensions

Valve type	A		B														
			N without emergency		T screw		P push button		D push type with detent		F pull button		Q pull type with detent				
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in		Nm	lbft
EF08M/1	28	1.10	67.2	2.64	90.1	3.55	90.1	3.55	92.8	3.65	-	-	-	-	24	30	22
EF08M/2	28	1.10	63.3	2.49	77.8	3.06	-	-	-	-	91.3	3.59	84.4	3.32	24	30	22
EF10M/1	32.3	1.27	66.9	2.63	89.8	3.54	89.8	3.54	92.5	3.64	-	-	-	-	27	50	37
EF10M/2	32.3	1.27	63	2.48	77.5	3.05	-	-	-	-	91	3.58	84.1	3.31	27	50	37
EF12M/1	45	1.77	61.1	2.40	84	3.31	84	3.31	86.7	3.41	-	-	-	-	32	80	59
EF12M/2	45	1.77	57.1	2.25	71.6	2.82	-	-	-	-	85.1	3.35	78.2	3.08	32	80	59
EF16M/1	46	1.81	61.2	2.40	84	3.31	84.1	3.31	86	3.39	-	-	-	-	38	80	59
EF16M/2	46	1.81	57.2	2.25	71.6	2.82	-	-	-	-	85	3.35	78.3	3.08	38	80	59