

EFS is used in order to check safely whether there is flow or not by detecting movement of liquids inside the pipe. It provides information about flow with high reliability without spending energy in cooling water or lubricating oil circuits, in the devices such as flash heater, central heating boiler and heater.

It should be assembled vertically.

As factory setting, contact is closed when there is flow; contact is open when flow stops. Exact opposite situation can be adjusted by user by changing position of relay in the housing.



EFS FLOW SWITCH

EFS 05s / 05sx / 05p / 05px

EFS 06s / 06sx / 06p / 06px

EFS 08s/10s/15s/20s/25s/32s/40s/50s

EFS 15p/20p/25p/32p/40p/50p

EFS 15px / 15bx

EFS 20cx/25cx/32cx/40cx/50cx

EFS 20sx/25sx/32sx/40sx/50sx

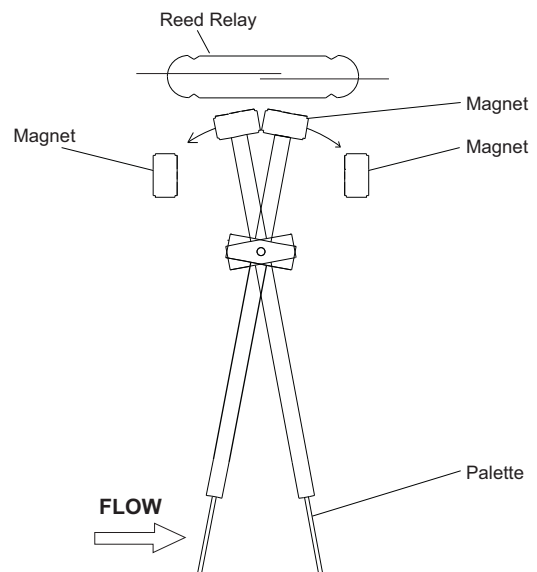
Advantages :

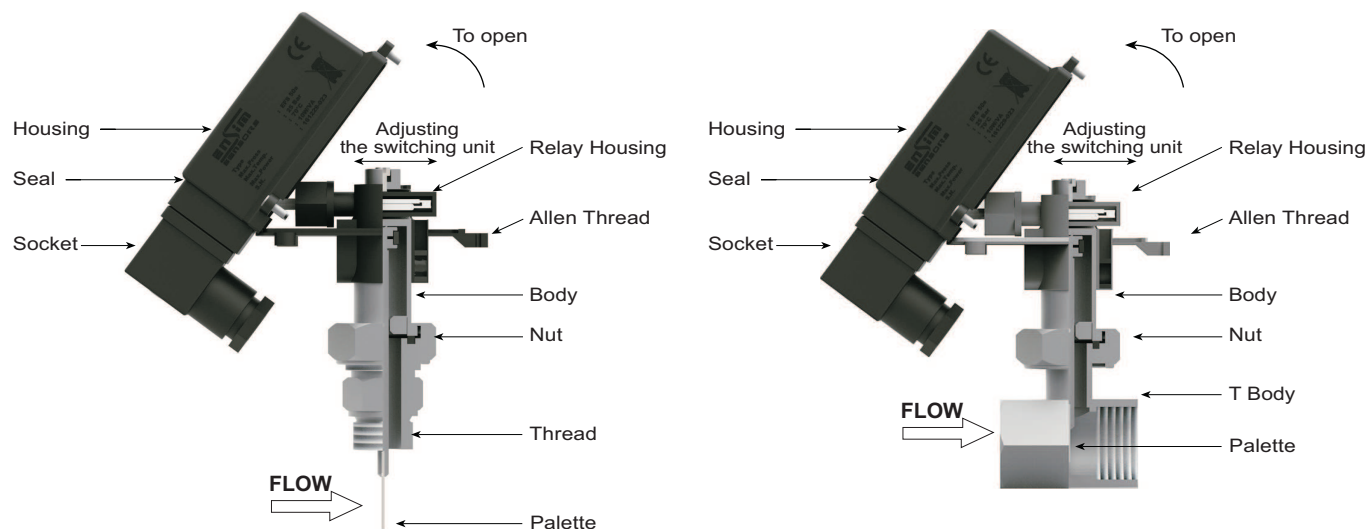
- * High precision.
- * Easy to adjust and assemble
- * Relay circuit is contactless with fluid.
- * Low pressure decrease.
- * Economical



Working Principle:

Palette, fastened from one point on the body, moves contact with fluid so that information about flow is obtained. When flow stops, it is provided that paddle comes to first position by pushing magnet with reverse pole in the paddle, attached on the body. By this means, longer life and resistance to higher pressure is provided in comparison with those of spring mechanisms. Reed relay with high precision and long life is used.





Technical Specifications :

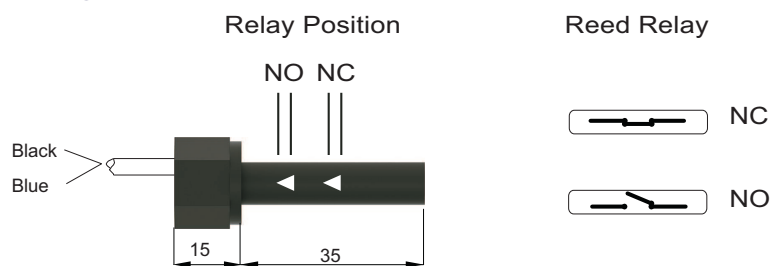
MODEL		Stainless Type (EFS ..s)	Plastic Type (EFS ..p)
MATERIAL	Body+Thread+Nut	AISI 304 St.St. (Opt. AISI 316 St.St.)	Polypropylene
	T Body	AISI 304 St.St. (Opt. AISI 316 St.St.)	Polypropylene
	Bolt	AISI 316 Stainless Steel	Polypropylene
	Palette	AISI 316 Stainless Steel	Polypropylene
	Relay Case	Polypropylene	Polypropylene
	Magnet Case	Polypropylene	Polypropylene
	O-Ring	FPM	NBR
FLUID		Water (Oil, gas and aggressive media on request)	Water (Oil, gas and aggressive media on request)
TOLERANCE		+/- %15 of full scale value	+/- %15 of full scale value
MAX. WORKING PRESSURE		25 bar	10 bar
WORKING TEMPERATURE		(-) 20 °C / (+) 110 °C	(-) 20 °C / (+) 70 °C
AMBIED TEMPERATURE		(-) 20 °C / (+) 70 °C	(-) 20 °C / (+) 70 °C
CONTACT		Reed Switch SPST - NO Std.	Reed Switch SPST - NO Std.
* CONTACT CURRENT		1 A	1 A
* MAX. CONTACT POWER		10 W / VA	10 W / VA
* MAX. SWITCHING VOLTAGE		200 VDC / 140 VAC	200 VDC / 140 VAC
ELECTRICAL CONNECTIONS		ISO 4400 socket Opt.Cable Output, Socket with LED	ISO 4400 socket Opt.Cable Output, Socket with LED
PROTECTION CLASS		IP 65, IP 67 (for sx, cx type)	IP 65, IP 67 (for px, bx type)

* WARNINGS!

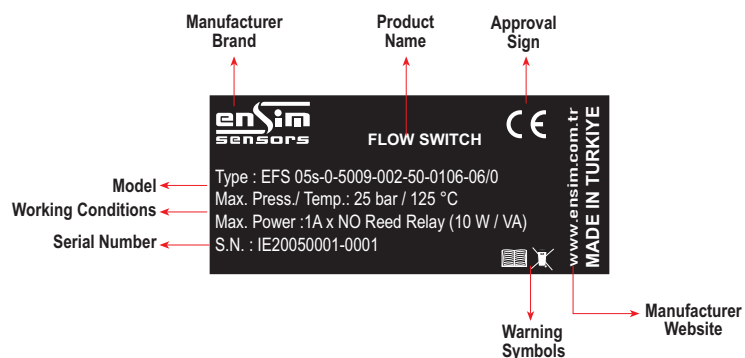
Please pay attention to following matters in order to operate your flow switch properly.

- It must be ensured that the values given for voltage, current, and power are not exceeded.
- When switched on, a load must be connected in series.
- The electrical details apply to ohmic loads.
(Capacitive or inductive loads must be operated using a protective circuit.)

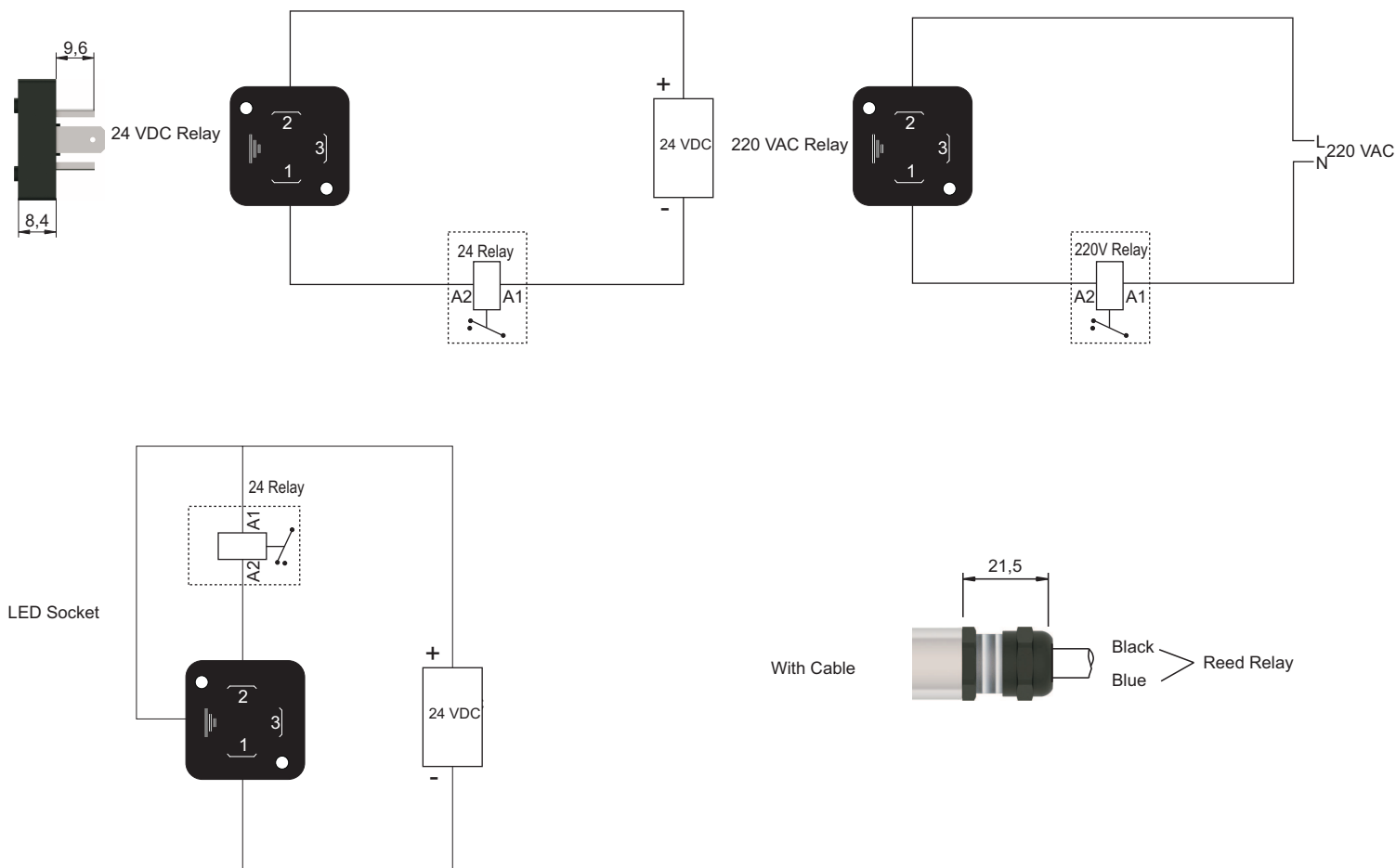
Relay Position Settings:



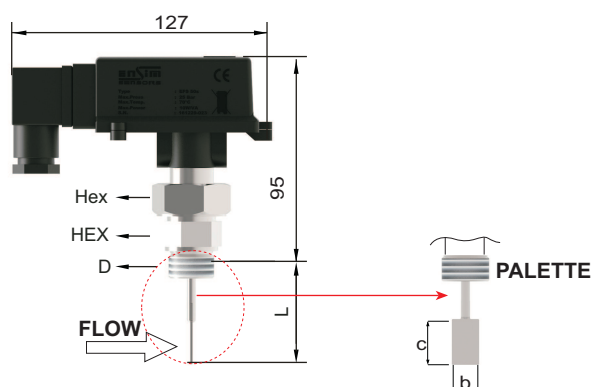
Product Label :



Electrical Connection:

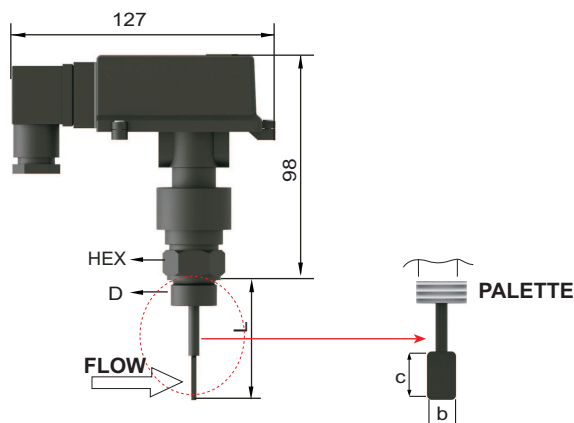


EFS 05s , EFS 06s



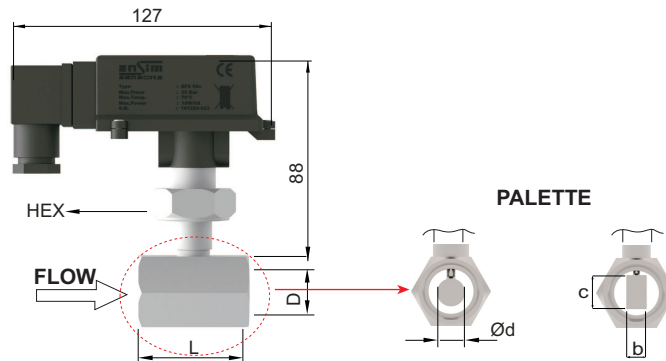
MODEL	Pipe Size	Connection Size D	Max. Flow (m ³ / h) Water	Rising Flow Rate (m ³ / h) Water	Falling Flow Rate (m ³ / h) Water	hex-HEX (mm)	L (mm)	Palette b-c (mm)
EFS 05s	DN 50	1/2 " BSP	28	1,5 / 2,5	1,4 / 2,2	32/ 27	50	12 x 20
	DN 80	1/2 " BSP	75	4 / 7,5	3,8 / 7	32/ 27	50	12 x 20
	DN 100	1/2 " BSP	140	6 / 10,5	5,5 / 10	32/ 27	50	12 x 20
EFS 06s	DN 100	1/2 " BSP	100	5,5 / 6,1	5,3 / 6	32/ 27	110	12 x 80
	DN 150	1/2 " BSP	140	9,5 / 12,5	9 / 12	32/ 27	110	12 x 80
	DN 200	1/2 " BSP	200	22,5 / 26	22 / 25	32/ 27	110	12 x 80

EFS 05p , EFS 06p



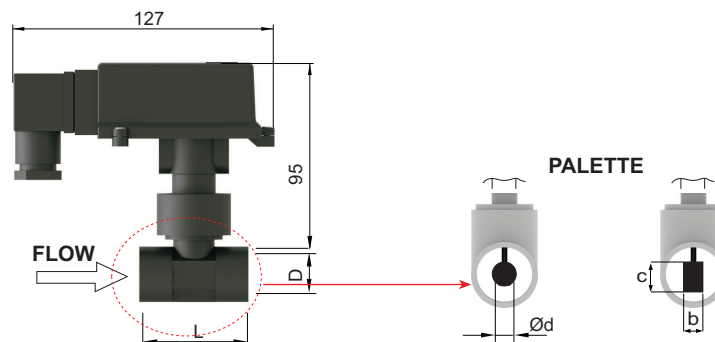
MODEL	Pipe Size	Connection Size D	Max. Flow (m ³ / h) Water	Rising Flow Rate (m ³ / h) Water	Falling Flow Rate (m ³ / h) Water	HEX (mm)	L (mm)	Palette b-c (mm)
EFS 05p	DN 50	1/2 " BSP	20	1 / 2	0,9 / 1,9	27	52	12 x 20
	DN 80	1/2 " BSP	30	3 / 6	2,9 / 5,5	27	52	12 x 20
	DN 100	1/2 " BSP	40	4,8 / 8	4,6 / 7,5	27	52	12 x 20
EFS 06p	DN 100	1/2 " BSP	70	4,5 / 5,5	4 / 5	27	112	12 x 80
	DN 150	1/2 " BSP	110	8 / 11	7,8 / 10	27	112	12 x 80
	DN 200	1/2 " BSP	120	18 / 24,2	17,5 / 24	27	112	12 x 80

EFS 08s , EFS 10s
EFS 15s , EFS 20s
EFS 25s , EFS 32s
EFS 40s , EFS 50s



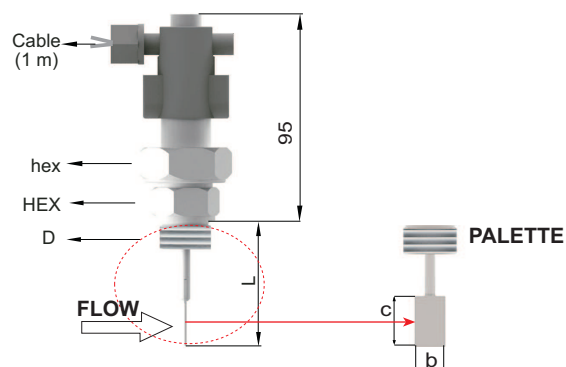
MODEL	Pipe Size	Connection Size D	Max. Flow (L / min) Water	Rising Flow Rate (L / min) Water	Falling Flow Rate (L / min) Water	hex (mm)	L (mm)	Palette d Ø b-c (mm)
EFS 08s	DN 8	1/4 " BSP	40	2 / 3	1,8 / 2,8	32	50	Ø 10
EFS 10s	DN 10	3/8 " BSP	50	2,7	2,4	32	50	Ø 10
EFS 15s	DN 15	1/2 " BSP	60	3,1	2,5	32	50	Ø 10
EFS 20s	DN 20	3/4 " BSP	80	5.7	4,7	32	50	Ø 13
EFS 25s	DN 25	1 " BSP	150	12 / 15	11,6 / 14,8	32	50	12 x 20
EFS 32s	DN 32	1 1/4 " BSP	200	16 / 19,5	15,7 / 19,1	32	50	12 x 20
EFS 40s	DN 40	1 1/2 " BSP	300	24,2 / 38	24 / 37,5	32	50	12 x 20
EFS 50s	DN 50	2 " BSP	300	35 / 48	34 / 47	32	65	12 x 20

EFS 15p , EFS 20p
EFS 25p , EFS 32p
EFS 40p , EFS 50p



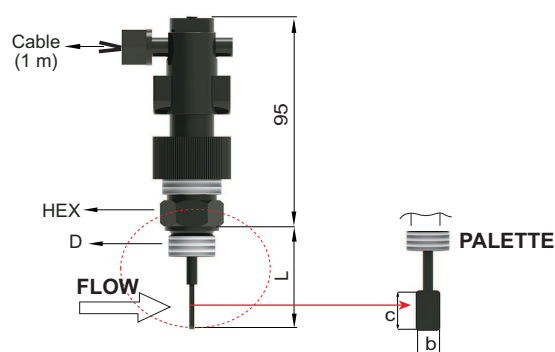
MODEL	Pipe Size	Connection Size D	Max. Flow (L / min) Water	Rising Flow Rate (L / min) Water	Falling Flow Rate (L / min) Water	L (mm)	Palette d Ø b-c (mm)
EFS 15p	DN 15	1/2 " BSP	30	5,5	5,3	50	Ø 9
EFS 20p	DN 20	3/4 " BSP	80	11,7	10,5	50	Ø 13
EFS 25p	DN 25	1 " BSP	100	14	13	50	12 x 20
EFS 32p	DN 32	1 1/4 " BSP	140	21	20,5	50	12 x 20
EFS 40p	DN 40	1 1/2 " BSP	180	26,5	35,8	50	12 x 20
EFS 50p	DN 50	2 " BSP	250	38,4	42,3	65	12 x 20

EFS 05sx , EFS 06sx



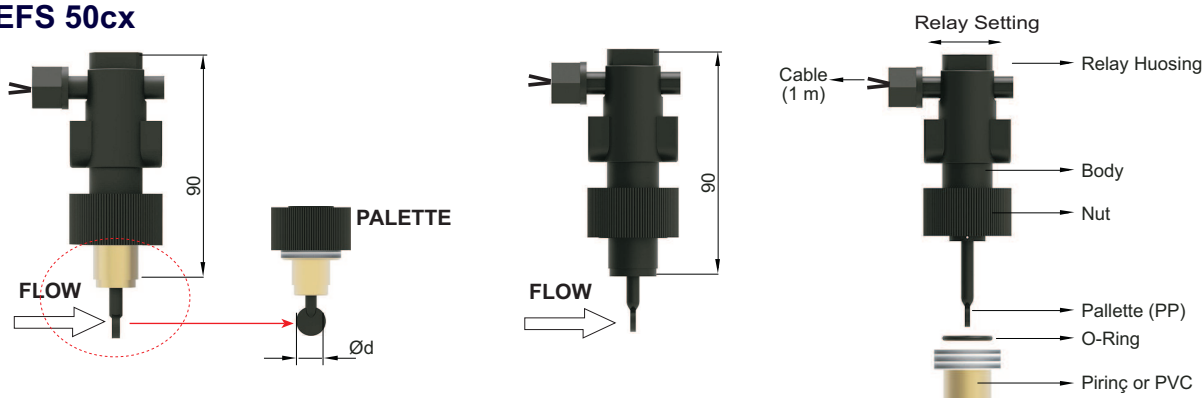
MODEL	Pipe Size	Connection Size D	Max. Flow (m ³ / h) Water	Rising Flow Rate (m ³ / h) Water	Falling Flow Rate (m ³ / h) Water	hex-HEX (mm)	L (mm)	Palette b-c (mm)
EFS 05sx	DN 50	1/2 " BSP	28	1,5 / 2,5	1,4 / 2,2	32/ 27	50	12 x 20
	DN 80	1/2 " BSP	75	4 / 7,5	3,8 / 7	32/ 27	50	12 x 20
	DN 100	1/2 " BSP	140	6 / 10,5	5,5 / 10	32/ 27	50	12 x 20
EFS 06sx	DN 100	1/2 " BSP	100	5,5 / 6,1	5,3 / 6	32/ 27	110	12 x 80
	DN 150	1/2 " BSP	140	9,5 / 12,5	9 / 12	32/ 27	110	12 x 80
	DN 200	1/2 " BSP	200	22,5 / 26	22 / 25	32/ 27	110	12 x 80

EFS 05px , EFS 06px



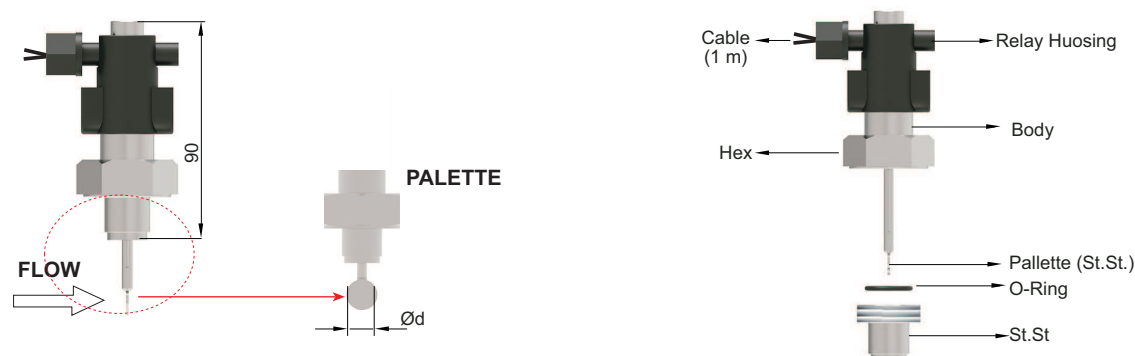
MODEL	Pipe Size	Connection Size D	Max. Flow (m ³ / h) Water	Rising Flow Rate (m ³ / h) Water	Falling Flow Rate (m ³ / h) Water	HEX (mm)	L (mm)	Palette b-c (mm)
EFS 05px	DN 50	1/2" BSP	20	1 / 2	0,9 / 1,9	27	52	12 x 20
	DN 80	1/2" BSP	30	3 / 6	2,9 / 5,5	27	52	12 x 20
	DN 100	1/2" BSP	40	4,8 / 8	4,6 / 7,5	27	52	12 x 20
EFS 06px	DN 100	1/2" BSP	70	4,5 / 5,5	4 / 5	27	112	12 x 80
	DN 150	1/2" BSP	110	8 / 11	7,8 / 10	27	112	12 x 80
	DN 200	1/2" BSP	120	18 / 24,2	17,5 / 24	27	112	12 x 80

EFS 20cx , EFS 25cx
EFS 32cx , EFS 40cx
EFS 50cx



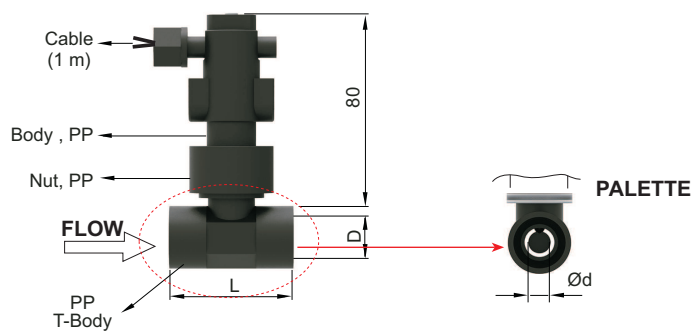
MODEL	Pipe Size	Max. Flow (L / min) Water	Rising Flow Rate (L / min) Water	Falling Flow Rate (L / min) Water	Palette d Ø b-c (mm)
EFS 20cx	DN 20	80	5,5	5,3	Ø 9
EFS 25cx	DN 25	125	11,7	10,5	Ø 13
EFS 32cx	DN 32	150	14	13	12 x 20
EFS 40cx	DN 40	225	21	20,5	12 x 20
EFS 50cx	DN 50	300	26,5	35,8	12 x 20

EFS 20sx , EFS 25sx
EFS 32sx , EFS 40sx
EFS 50sx



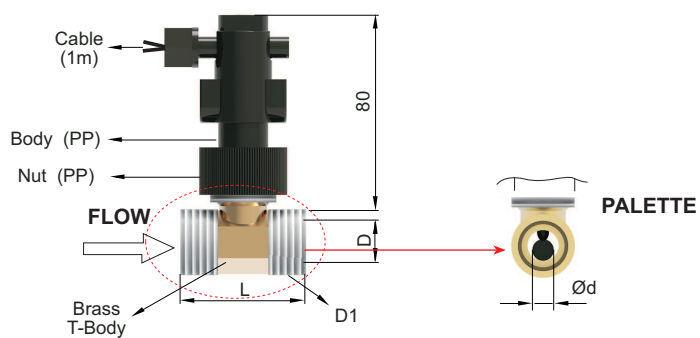
MODEL	Pipe Size	Max. Flow (L / min) Water	Rising Flow Rate (L / min) Water	Falling Flow Rate (L / min) Water	HEX (mm)	Palette d Ø b-c (mm)
EFS 20sx	DN 20	80	5,5	5,3	27	Ø 9
EFS 25sx	DN 25	125	11,7	10,5	32	Ø 13
EFS 32sx	DN 32	150	14	13	41	12 x 20
EFS 40sx	DN 40	225	21	20,5	50	12 x 20
EFS 50sx	DN 50	300	26,5	35,8	60	12 x 20

EFS 15px



MODEL	Pipe Size	Connection Size D / D1	Max Flow (m³ / h) Water	Rising Flow Rate (L / min) Water	Falling Flow Rate (L / min) Water	L (mm)	Palette d Ø (mm)
EFS 15px	DN 15	1/2" / * BSP	40	2...4,5	1,5...4	50	Ø 9
EFS 15bx	DN 15	1/2" BSP / 3/4" BSP	40	2...5,3	1.5...5,1	53	Ø 9

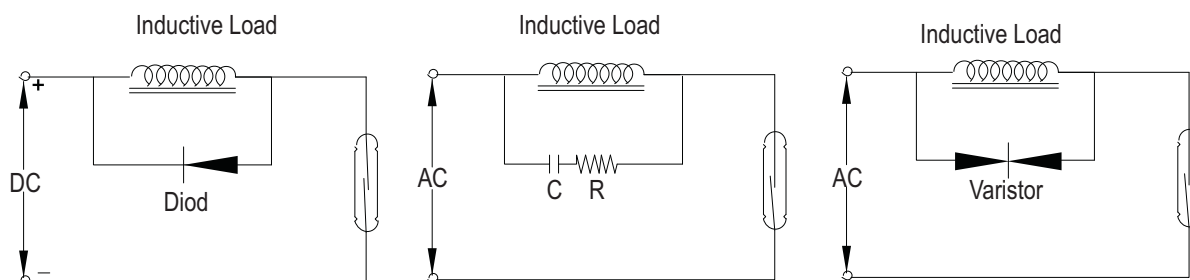
EFS 15bx



Reed Relay and Operation Conditions

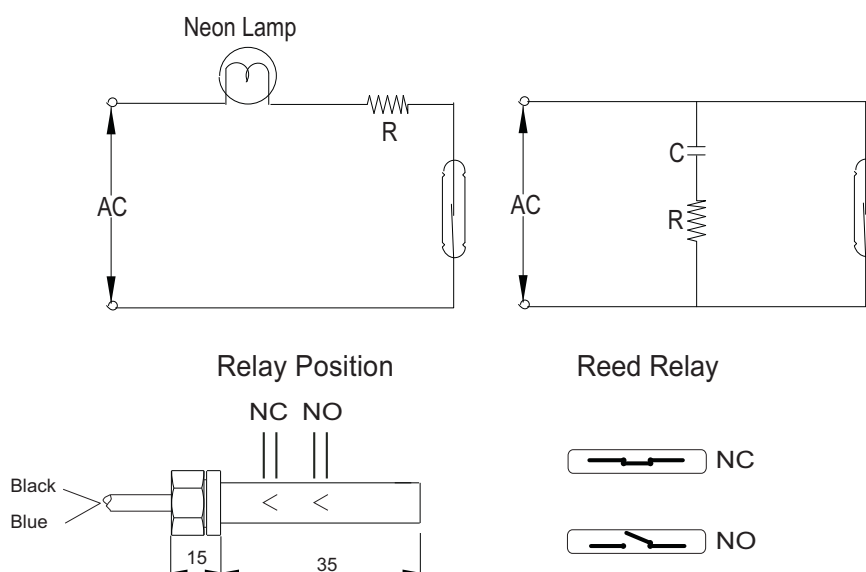
Inductive Load

When reed switch is used for loads such as electromagnetic relay, contactor or solenoid, reed switch may be exposed to very high voltage depending on value of inductive load. This causes either failure of switch or shortening its service life. Therefore, it is recommended to be used as follows depending on used voltage, for the purpose of protection of switch.

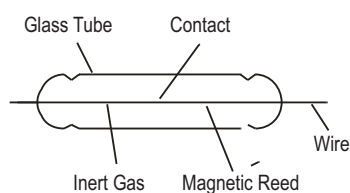


Capacitive Load

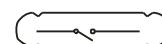
When reed switch is used with capacitive load, it may cause that high current passes over reed switch, depending on value of capacity during Charge -'96 Discharge of capacity. So this may cause failure of switch. It is recommended to be used as follows depending on used voltage, for the purpose of protection of switch.



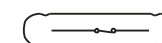
When there is flow, factory settings of the flow switch is normally closed.
When flow stopped, contact is open.



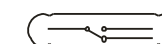
SPST-NO
Single Pole-Single Throw
Normally Open



SPST-NC
Single Pole-Single Throw
Normally Closed



SPDT-NO/NC
Single Pole-Double Throw
Open / Closed Contact



Order Form : Please consider sample models when coding

1 MODEL

EFS 05s	EFS 06s	EFS 08s	EFS 15p	EFS 15px	EFS 20cx	EFS 20sx
EFS 05sx	EFS 06sx	EFS 10s	EFS 20p	EFS 15bx	EFS 25cx	EFS 25sx
EFS 05p	EFS 06p	EFS 15s	EFS 25p		EFS 32cx	EFS 32sx
EFS 05px	EFS 06px	EFS 20s	EFS 32p		EFS 40cx	EFS 40sx
		EFS 25s	EFS 40p		EFS 50cx	EFS 50sx
		EFS 32s	EFS 50p			
		EFS 40s				
		EFS 50s				

2 CERTIFICATE

None.....0	(EN10204-3-1) Material Certification.....1
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3 HOUSING

None.....0	Aluminium Housing , B22x.....750
Plastic Housing , B05p 002	Special.....x

4 CONNECTION MATERIAL

304 Stainless Steel.....001	PVC.....061
316 Stainless Steel.....002	Special.....x

5 ELECTRICAL CONNECTION

Terminal (For Housing Models).....00	M12-2 Pin.....70
Polyamide Big Socket P01.....50	M12-5 Pin.....71
Polyamide Big Socket With Light P03.....52	PVC Cable (Max.60 °C).....80
Special Cable.....x	PVC Cable (Max.105 °C).....81
Special socket.....x	

6 CONNECTION

Thread 1/4 " BSP Female.....0101	Thread 1/2 " BSP Male Thread.....0004
Thread 3/8 " BSP Female.....0102	Thread 3/4 " BSP Male Thread.....0005
Thread 1/2 " BSP Female.....0103	Thread 1" BSP Male Thread.....0006
Thread 3/4 " BSP Female.....0104	
Thread 1 " BSP Female.....0105	Apparatus - Brass (For Soldering).....x001
Thread 1 1/4 " BSP Female.....0106	Apparatus - Stainless Steel (For Welding).....x002
Thread 1 1/2 " BSP Female.....0107	
Thread 2 " BSP Female.....0108	Special.....x

8 CONTACT STRUCTURE

NO Reed Relay (Std.) 06	NO / NC Reed Relay.....08
NC Reed Relay.....07	Special.....x

9 OPTIONAL

None...../ 0	Special.....x
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EXAMPLE

EFS 05s-0-002-002-50-0106-06/0

EFS 05s Flow Switch , 316 Stainless Steel , 1/2 " BSP Male Thread , NO Contact