

FLOW

Flow Switches



Barksdale

CONTROL PRODUCTS

CRANE Barksdale, Inc./Barksdale GmbH
A Subsidiary of Crane Co.

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Flow Switches

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Barksdale Flow Switches Overview

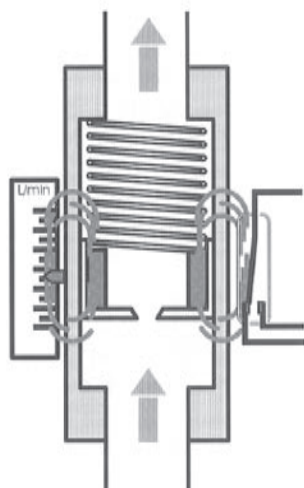
Specifications are subject to changes without notice.

Information

Catalog overview, fax order form 18

Introduction

Operation:



Function

Operation of the BFS flow switch is based on the movement of a spring-loaded piston within a cylindrical tube.

A permanent magnet within the piston activates an adjustable reed switch, which is mounted on the outside of the body for easy setting.

As these flow switches are spring loaded they can be mounted in virtually any position without affecting the setpoint.

For the versions with glass tube, the top edge of the piston serves to indicate the flowrate on the measuring scale.

Areas of applications:

Control of flowcircuit e.g. for

- central lubrication circuits
- recirculating oil lubrication
- transformer oil systems, etc.

Measuring and monitoring of fluid and gaseous media e. g. in

- cooling circuits in welding machines
- induction heating plants
- high frequency generators
- condensers, transformers, compressors
- flow heaters, steam generators, centrifuges
- motor cooling systems, mixing plants
- hydraulic systems etc.

Technical Information

Switching range and switch point adjustment:

The switch ranges refer to the limits within which the switch point may infinitely be adjusted. The actual flow throughput can, depending on the flow velocity, be much larger.

The arrow marking the switch-off-point is positioned in line with the required flow rate, marked on the scale attached to the body.

Switch hysteresis:

Hysteresis is the difference in flow between the switch closing and opening again. By means of the careful choice of reed switches with particularly close differential, a typical hysteresis of 0.5 ...1.5 mm can be achieved with the BFS-series.

Viscosity compensation:

Viscosity compensation is achieved by the combination of the spring and the calibrated orifice inside the piston which guarantees high accuracy over a viscosity range of 1 to 600 cSt.

Special features:

- installation in any position
- high switch accuracy
- low switch hysteresis
- immediate response
- infinitely adjustable switch point
- high operating pressures
- robust design
- minimum load for change over (SPDT): 3 VA
- contact rate for change over (SPDT) with SPS-application:
200 V, 1 A, 20 VA (Please request)

Maintenance instructions:

Due to the design, the flow monitor does not require any maintenance. The use of media containing magnetic particles requires cleaning intervals. These cleaning intervals can be prolonged by using filters with a magnetic separator.

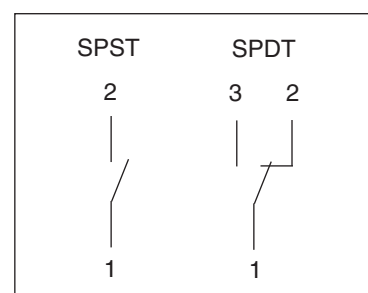
In case of vertical mounting with flow direction from top to bottom of the type BFS-10-N or BFS-10-0, the lowest switch points might fail to operate due to gravity causing a friction between bore and piston.

Technical Information

Materials

Part	Brass	Stainless Steel
Housing	Nickel-pl. brass/ Alu	1.4571 / Alu
Float	Nickel-pl. brass	1.4571
Spring	1.4571	1.4571
Stop rings	Nickel-pl. brass	1.4571
Connections	Nickel-pl. brass	1.4571
Glass	Duran 50	
Seals	Perbunan, FKM or EPDM	
Electrical conn.	acc. to DIN 43650	
Accuracy f. s.	±10% for BFS-10, 20, 30, 40	

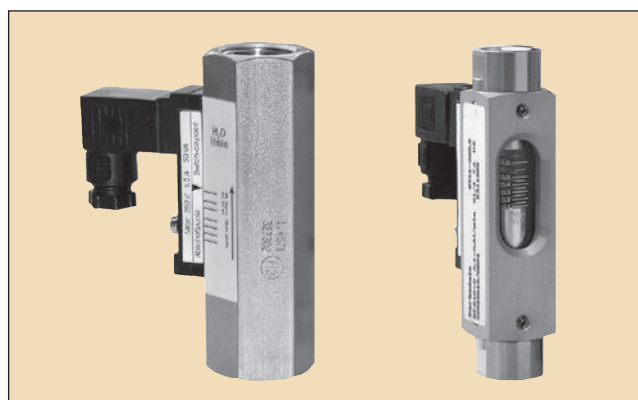
Wiring diagram



Installation instructions

- The instrument can be installed in any position in a system.
- Flow direction is from lowest to highest value, indicated on the scale.
- Flow media must be free of particle contamination, otherwise the instrument will not function properly. We recommend the use of dirt filters where necessary.
- The flow monitors must not be positioned in inductive fields. (Minimum distance to iron units: 10 mm)
- Electrical maximum switch loads of the reed switches must be carefully noted.

Flow Switches Overview



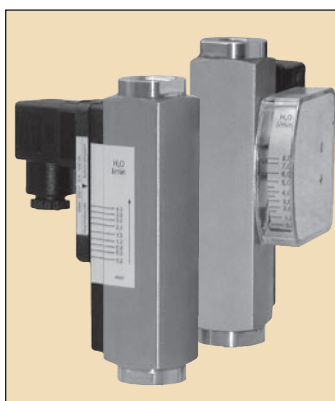
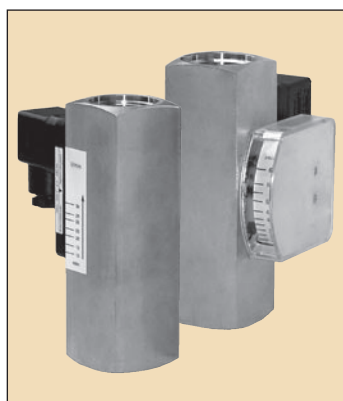
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Model	BFS-10-N / BFS-10 -O	BFS-10-N-AIR / BFS-10 -O-AIR	BFS-20-O / BFS-20-OL
Measuring principle	variable aera flow meter	variable aera flow meter	variable aera flow meter
Features	rugged flow switch, with or without sight glass	rugged flow switch, with or without sight glass	viscosity compensated flow switch with sight glass
Applications	water and air monitoring	monitoring volume flow of gaseous media	flow monitoring of liquids, e. g. oil in lubricant circuits
Switching ranges	0,005...0,06 l/min to 60...150 l/min water	0,2...1,3 NI/min to 200...650 NI/min air	0,5...1,7 l/min to 30...90 l/min liquids up to 600 cSt.
Accuracy	max. <10 % f. s.	max. <10 % f. s.	max. <10 % f. s.
Display	optional with glass optics	optional with glass optics	glass optics
Wetted parts	nickel-plated brass or stainless steel, 1.4571	nickel-plated brass or stainless steel, 1.4571	nickel-plated brass or stainless steel, 1.4571
Operating pressure range	up to 300 bar (brass) up to 16 bar (w. glass opt.)	up to 300 bar (brass) up to 16 bar (w. glass opt.)	up to 16 bar
Operating temp. range	0 °C ...100 °C (160 °C option HT)	0 °C ...100 °C (160 °C option HT)	0 °C ...100 °C (160 °C option HT)
Process connection	dependent on the measuring range from G1/4 F to G1 F	dependent on the measuring range from G1/4 F to G1 F	dependent on the measuring range from G1/4 F to G1 F
Protection class	IP65 with plug	IP65 with plug	IP65 with plug
Electrical connection	plug acc. to DIN 43650 with electrical plug	plug acc. to DIN 43650 with electrical plug	plug acc. to DIN 43650 with electrical plug
Contact rating Normal open	up to 250 V / 3 A / 100 VA	up to 250 V / 3 A / 100 VA	up to 250 V / 3 A / 100 VA
Change over	up to 250 V / 1,5 A / 50 VA	up to 250 V / 1,5 A / 50 VA	up to 250 V / 1,5 A / 50 VA
Ex - version	EExm, EExia	EExm, EExia	EExm, EExia
Catalog page	P1, P2	P3, P4	P5, P6

Barksdale Flow Switches Overview

Specifications are subject to changes without notice.

Flow Switches Overview



Model	BFS-30-N / BFS-30-L / BFS-30-O	BFS-40-N / BFS-40-O
Measuring principle	variable aera flow meter	variable aera flow meter
Features	viscosity compensated flow switch with or without sight glass	viscosity compensated flow switch with or without sight glass
Applications	flow monitoring of liquids, e. g. oil in lubricant circuits and in hydraulics	flow monitoring of liquids, e. g. oil in lubricant circuits and in hydraulics
Switching ranges	0,1...0,8 l/min to 35...110 l/min, liquids up to 600 cSt.	0,2...4,0 l/min to 35...250 l/min, liquids up to 600 cSt.
Accuracy	max. <10 % f. s.	max. <10 % f. s.
Display	magnetic indicator	magnetic indicator
Wetted parts	nickel-plated brass or stainless steel, 1.4571	nickel-plated brass or stainless steel, 1.4571
Operating pressure range	up to 250 bar (brass) up to 300 bar (1.4571)	up to 200 bar (brass) up to 330 bar (1.4571)
Operating temp. range	0 °C ...100 °C (160 °C option HT)	0 °C ...100 °C (160 °C option HT)
Process connection	dependent on the measuring range from G1/4 F to G1 F	dependent on the measuring range from G1/4 F to G1 1/2 F
Protection class	IP65 with plug	IP65 with plug
Electrical connection	plug acc. to DIN 43650 with electrical plug	plug acc. to DIN 43650 with electrical plug
Contact rating Normal open	up to 250 V / 3 A / 100 VA	up to 250 V / 3 A / 100 VA
Change over	up to 250 V / 1,5 A / 50 VA	up to 250 V / 1,5 A / 50 VA
Ex - version	EExm, EExia	EExm, EExia
Catalog page	P7, P8	P9, P10

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Barksdale Flow Switches Overview

Specifications are subject to changes without notice.

Type BFS-10-N / BFS-10-O

for monitoring liquids,
with or without optical display

Features

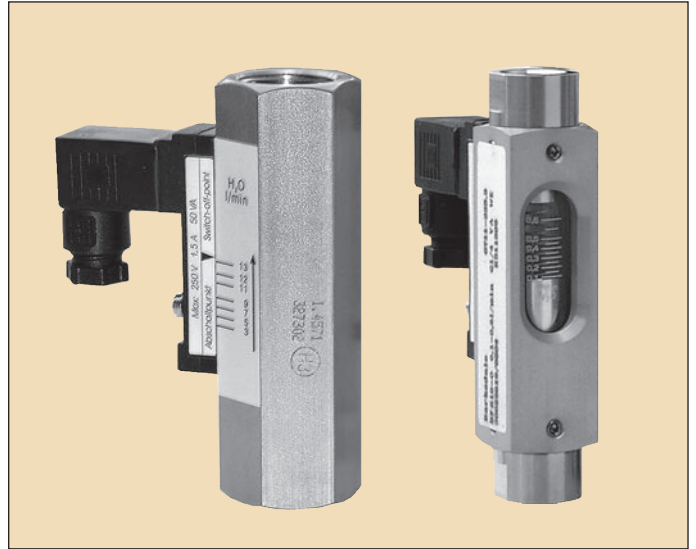
set point continuously adjustable
rugged, low hysteresis, any mounting position,
high accuracy and functional safety

Measuring ranges

0,005...0,06 l/min to 60...150 l/min for water

Applications

Measuring and monitoring of liquids,
e. g. in cooling systems, test beds, pumps etc.



Technical data BFS-10-N (without indication)

Measuring principle : variable aera flow meter			
Materials	brass version	stainless steel ver.	
Var. aera flow meter:	brass	1.4571	
Spring	: 1.4571	1.4571	
Fitting	: brass, nickel-plated	1.4571	
Housing	: brass, nickel-plated	1.4571	
Magnets	: ferrite	ferrite	
Operating pressure	brass	VA	Pressure drop
BFS-10-N G1/4	: PN 300 bar	350 bar	0,02...0,2 bar
BFS-10-N G1/2	: PN 300 bar	350 bar	0,02...0,3 bar
BFS-10-N G1	: PN 250 bar	300 bar	0,02...0,4 bar
Operating temperat. : 100 °C (standard), 160 °C (option HT)			

Switching ranges (water in l/min) for:

BFS-10-N G1/4:	BFS-10-N G1/2:	BFS-10-N G1:
0,005...0,06	0,02...0,2	11...30
0,04...0,13	0,2...0,6	15...45
0,1...0,6	0,4...1,8	20...60
0,2...1,2	0,8...3,2	30...90
0,4...2,0	2,0...7,0	60...150
0,5...3,0	3,0...13	
1,0...5,0	4,0...20	
	8,0...30	

Accuracy	: ±10% f. s.		
Electrical connect.	: plug acc. to DIN 43650		
Contact rating	BFS-10-N G1/4 : 200 V / 1 A / 20 VA (NO) 200 V / 1 A / 20 VA (SPDT)		
	BFS-10-N G1/2 : 230 V / 3 A / 60 VA (NO) 250 V / 1,5 A / 50 VA (SPDT)		
	BFS-10-N G1 : 250 V / 3 A / 100 VA (NO) 250 V / 1,5 A / 50 VA (SPDT)		
	EEx-m II T6 vers. : 250 V / 2 A / 60 VA (NO) G1/2, G1 only 250 V / 1 A / 30 VA (SPDT) G1/2, G1		
	ExII 1GD EEx ia II B T6 vers. : 45 V / 1 A / (NO / SPDT) G1/2, G1 only		
Protection class	: IP65 (plug acc. to DIN 43650) IP67 (with moulded cable, EEx-models only)		

Technical data BFS-10-O (with optical indication)

Measuring principle : variable aera flow meter			
Materials	brass version	stainless steel ver.	
Var. aera flow meter:	brass	1.4571	
Spring	: 1.4571	1.4571	
Fitting	: brass, nickel-plated	1.4571	
Display housing	: alumin., anodized	alumin., anodized	
Glass	: Duran 50	Duran 50	
Magnets	: ferrite	ferrite	
Operating pressure	brass	VA	Pressure drop
BFS-10-O G1/4	: PN 16 bar	16 bar	0,02...0,2 bar
BFS-10-O G1/2	: PN 16 bar	16 bar	0,02...0,3 bar
BFS-10-O G1	: PN 10 bar	10 bar	0,02...0,4 bar
Operating temperat. : 100 °C (standard), 160 °C (option HT)			

Switching ranges (water in l/min) for:

BFS-10-O G1/4:	BFS-10-O G1/2:	BFS-10-O G1:
0,005...0,06	0,1...0,5	8,0...30
0,025...0,13	0,2...1,0	15...45
0,1...0,6	0,4...1,6	30...90
0,2...1,2	1,0...4,0	60...150
0,4...2,0	2,0...8,0	
0,5...3,0	4,0...15	
1,0...5,0	6,0...28	

Accuracy	: ±10% f. s.		
Electrical connect.	: plug acc. to DIN 43650		
Contact rating	BFS-10-O G1/4 : 200 V / 1 A / 20 VA (NO) 200 V / 1 A / 20 VA (SPDT)		
	BFS-10-O G1/2 : 230 V / 3 A / 60 VA (NO) 250 V / 1,5 A / 50 VA (SPDT)		
	BFS-10-O G1 : 250 V / 3 A / 100 VA (NO) 250 V / 1,5 A / 50 VA (SPDT)		
	EEx-m II T6 vers. : 250 V / 2 A / 60 VA (NO) G1 only 250 V / 1 A / 30 VA (SPDT) G1 only		
	ExII 1GD EEx ia II B T6 vers. : 45 V / 1 A / (NO / SPDT) G1 only		
Protection class	: IP65 (plug acc. to DIN 43650) IP67 (with moulded cable, EEx-models only)		

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Barksdale Flow Switches Overview

Specifications are subject to changes without notice.

Type BFS-10-N / BFS-10-O

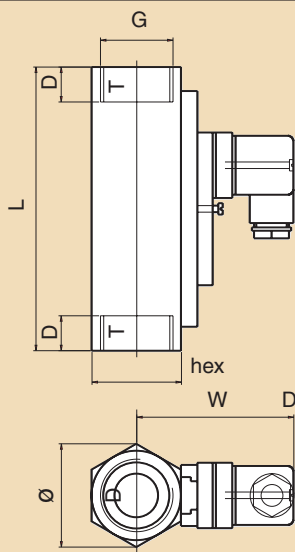
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Barksdale Flow Switches Overview

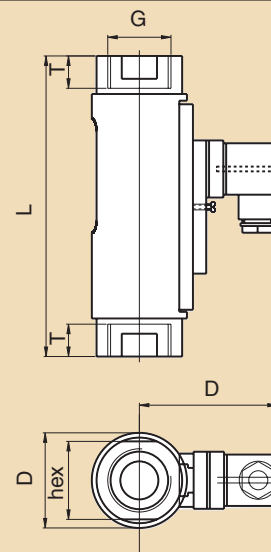
Specifications are subject to changes without notice.

Dimensions (in mm)

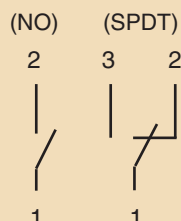
BFS-10-N



BFS-10-O



Wiring diagram



	G 1/4	G 1/2	G 1
(G)	17	27	41
(hex)	17	27	41
(Ø)	17	31	47
(W)	47	52	76
(D)	10	14	17
(L)	65	90	130
Weight (g)	140	350	1050

	G 1/4	G 1/2	G 1
(G)	17	27	41
(hex)	17	27	41
(Ø)	20	32	50
(W)	49	53	77
(D)	10	14	17
(L)	90	114	158
Weight (g)	140	300	900

Order numbers

BFS-10-O	Brass	BFS-10-O	Brass
0711-250	BFS-10-O-G1/4-MS-NO-ST	0711-332	BFS-10-O-G1/4-MS-WE-ST
0711-251	BFS-10-O-G1/2-MS-NO-ST	0711-333	BFS-10-O-G1/2-MS-WE-ST
0711-252	BFS-10-O-G1-MS-NO-ST	0711-334	BFS-10-O-G1-MS-WE-ST
Stainless steel		Stainless steel	
0711-253	BFS-10-O-G1/4-SS-NO-ST	0711-335	BFS-10-O-G1/4-SS-WE-ST
0711-254	BFS-10-O-G1/2-SS-NO-ST	0711-336	BFS-10-O-G1/2-SS-WE-ST
0711-255	BFS-10-O-G1-SS-NO-ST	0711-337	BFS-10-O-G1-SS-WE-ST
BFS-10-N	Brass	BFS-10-N	Brass
0711-256	BFS-10-N-G1/4-MS-NO-ST	0711-338	BFS-10-N-G1/4-MS-WE-ST
0711-257	BFS-10-N-G1/2-MS-NO-ST	0711-339	BFS-10-N-G1/2-MS-WE-ST
0711-258	BFS-10-N-G1-MS-NO-ST	0711-340	BFS-10-N-G1-MS-WE-ST
Stainless steel		Stainless steel	
0711-259	BFS-10-N-G1/4-SS-NO-ST	0711-341	BFS-10-N-G1/4-SS-WE-ST
0711-260	BFS-10-N-G1/2-SS-NO-ST	0711-342	BFS-10-N-G1/2-SS-WE-ST
0711-261	BFS-10-N-G1-SS-NO-ST	0711-343	BFS-10-N-G1-SS-WE-ST

Order number example: Order number + switching range = 0711-339, 2,0...7,0 l/min

Description

NO = normally open	O = with indication	MS = brass	Please specify switching range (see table on page P1) additional to order number.
WE = change-over	N = without indication	SS = stainless steel	

Type BFS-10-N-AIR / BFS-10-O-AIR

for monitoring volume flow of gaseous media, with or without optical display

Features

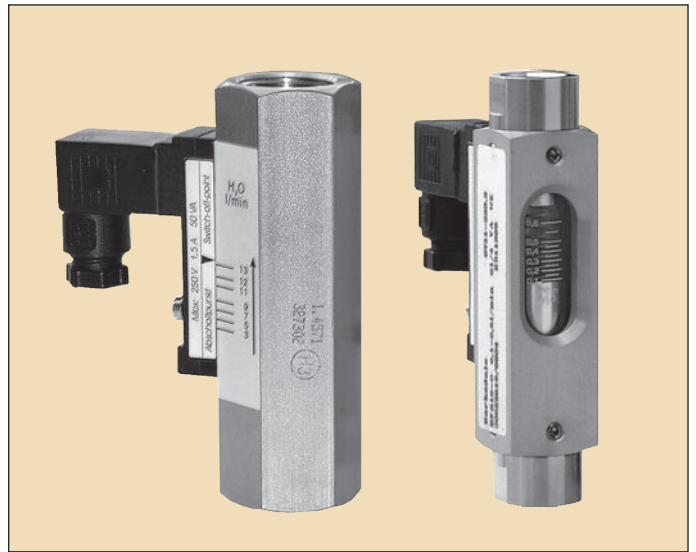
set point continuously adjustable
rugged, low hysteresis, any mounting position, high accuracy and functional safety

Measuring ranges

0,2...1,3 NI/min to 200...650 NI/min for air

Applications

Measuring and monitoring of gaseous media, e. g. in cooling systems, test beds, pumps etc.



Technical data BFS-10-N-AIR (without indication)

Measuring principle : variable aera flow meter			
Materials	brass version	stainless steel ver.	
Var. aera flow meter:	brass	1.4571	
Spring	: 1.4571	1.4571	
Fitting	: brass, nickel-plated	1.4571	
Housing	: brass, nickel-plated	1.4571	
Magnets	: ferrite	ferrite	
Operating pressure	brass	VA	Pressure drop
BFS-10-N G1/4	: PN 300 bar	350 bar	0,02...0,2 bar
BFS-10-N G1/2	: PN 300 bar	350 bar	0,02...0,3 bar
BFS-10-N G1	: PN 250 bar	300 bar	0,02...0,4 bar
Operating temperat. : 100 °C (standard), 160 °C (option HT)			

Switching ranges (air in NI/min) for:

BFS-10-N-AIR G1/4:	BFS-10-N-AIR G1/2:	BFS-10-N-AIR G1:
0,6...2,2	2,5...10	60...180
1,7...6,0	5,5...20	100...300
2,5...8,0	8,0...30	200...650
3,0...12	10...35	
3,0...22	24...90	
7,0...24	55...220	
12...34	65...240	
16...56	80...300	
20...80	140...525	

Accuracy	: ±10% f. s.	
Electrical connect.	: plug acc. to DIN 43650	
Contact rating	BFS-10-N-AIR G1/4 : 200 V / 1 A / 20 VA (NO) 200 V / 1 A / 20 VA (SPDT)	
	BFS-10-N-AIR G1/2 : 230 V / 3 A / 60 VA (NO) 250 V / 1,5 A / 50 VA (SPDT)	
	BFS-10-N-AIR G1 : 250 V / 3 A / 100 VA (NO) 250 V / 1,5 A / 50 VA (SPDT)	
EEx-m II T6 vers.	: 250 V / 2 A / 60 VA (NO) G1/2, G1 only 250 V / 1 A / 30 VA (SPDT) G1/2, G1	
ExII 1GD	EEx ia II B T6 vers. : 45 V / 1 A / (NO / SPDT) G1/2, G1 only	
Protection class	: IP65 (plug acc. to DIN 43650) IP67 (with moulded cable, EEx-models only)	

Technical data BFS-10-O-AIR (with optical indication)

Measuring principle : variable aera flow meter			
Materials	brass version	stainless steel ver.	
Var. aera flow meter:	brass	1.4571	
Spring	: 1.4571	1.4571	
Fitting	: brass, nickel-plated	1.4571	
Display housing	: alumin., anodized	alumin., anodized	
Glass	: Duran 50	Duran 50	
Magnets	: ferrite	ferrite	
Operating pressure	brass	VA	Pressure drop
BFS-10-O G1/4	: PN 16 bar	16 bar	0,02...0,2 bar
BFS-10-O G1/2	: PN 16 bar	16 bar	0,02...0,3 bar
BFS-10-O G1	: PN 10 bar	10 bar	0,02...0,4 bar
Operating temperat. : 100 °C (standard), 160 °C (option HT)			

Switching ranges (air in NI/min) for:

BFS-10-O-AIR G1/4:	BFS-10-O-AIR G1/2:	BFS-10-O-AIR G1:
0,2...1,3	3,0...12	22,5...80
0,5...2,0	7,0...30	50...130
0,8...3,0	12...40	130...420
1,5...5,0	28...125	200...625
2,0...8,0	50...200	
3,0...12	100...420	
3,5...14	120...480	
5,5...20		
7,0...24		
10...35		
10...42		

Accuracy	: ±10% f. s.	
Electrical connect.	: plug acc. to DIN 43650	
Contact rating	BFS-10-O-AIR G1/4 : 200 V / 1 A / 20 VA (NO) 200 V / 1 A / 20 VA (SPDT)	
	BFS-10-O-AIR G1/2 : 230 V / 3 A / 60 VA (NO) 250 V / 1,5 A / 50 VA (SPDT)	
	BFS-10-O-AIR G1 : 250 V / 3 A / 100 VA (NO) 250 V / 1,5 A / 50 VA (SPDT)	
EEx-m II T6 vers.	: 250 V / 2 A / 60 VA (NO) G1 only 250 V / 1 A / 30 VA (SPDT) G1 only	
ExII 1GD	EEx ia II B T6 vers. : 45 V / 1 A / (NO / SPDT) G1 only	
Protection class	: IP65 (plug acc. to DIN 43650) IP67 (with moulded cable, EEx-models only)	

Type BFS-10-N-AIR / BFS-10-O-AIR

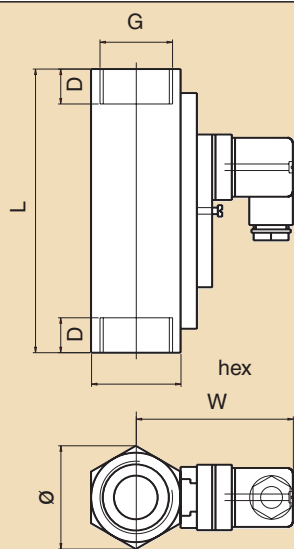
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Barksdale Flow Switches Overview

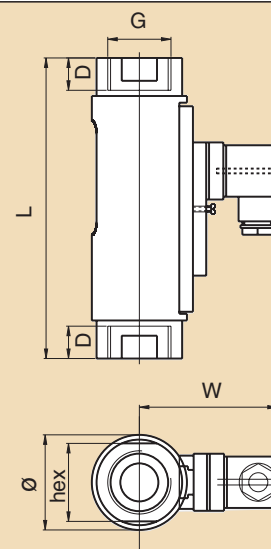
Specifications are subject to changes without notice.

Dimensions (in mm)

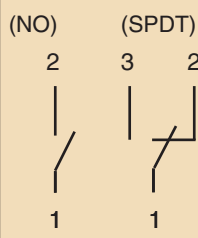
BFS-10-N-AIR



BFS-10-O-AIR



Wiring diagram



	G 1/4	G 1/2	G 1
(G)			
(hex)	17	27	41
(Ø)	17	31	47
(W)	47	52	76
(D)	10	14	17
(L)	65	90	130
Weight (g)	140	350	1050

	G 1/4	G 1/2	G 1
(G)			
(hex)	17	27	41
(Ø)	20	32	50
(W)	49	53	77
(D)	10	14	18
(L)	90	114	158
Weight (g)	140	300	900

Order numbers

BFS-10-O-AIR	Brass	BFS-10-O-AIR	Brass
0710-001	BFS-10-O-G1/4-MS-NO-ST	0710-013	BFS-10-O-G1/4-MS-WE-ST
0710-002	BFS-10-O-G1/2-MS-NO-ST	0710-014	BFS-10-O-G1/2-MS-WE-ST
0710-003	BFS-10-O-G1-MS-NO-ST	0710-015	BFS-10-O-G1-MS-WE-ST
Stainless steel		Stainless steel	
0710-004	BFS-10-O-G1/4-SS-NO-ST	0710-016	BFS-10-O-G1/4-SS-WE-ST
0710-005	BFS-10-O-G1/2-SS-NO-ST	0710-017	BFS-10-O-G1/2-SS-WE-ST
0710-006	BFS-10-O-G1-SS-NO-ST	0710-018	BFS-10-O-G1-SS-WE-ST
BFS-10-N-AIR	Brass	BFS-10-N-AIR	Brass
0710-007	BFS-10-N-G1/4-MS-NO-ST	0710-019	BFS-10-N-G1/4-MS-WE-ST
0710-008	BFS-10-N-G1/2-MS-NO-ST	0710-020	BFS-10-N-G1/2-MS-WE-ST
0710-009	BFS-10-N-G1-MS-NO-ST	0710-021	BFS-10-N-G1-MS-WE-ST
Stainless steel		Stainless steel	
0710-010	BFS-10-N-G1/4-SS-NO-ST	0710-022	BFS-10-N-G1/4-SS-WE-ST
0710-011	BFS-10-N-G1/2-SS-NO-ST	0710-023	BFS-10-N-G1/2-SS-WE-ST
0710-012	BFS-10-N-G1-SS-NO-ST	0710-024	BFS-10-N-G1-SS-WE-ST

Order number example: Order number + switching range = 0712-020, 7,0...30,0 NI/min

Description

NO = normally open
WE = change-over

O = with indication
N = without indication

MS = brass
SS = stainless steel

Please specify switching range (see table on page P3) additional to order number.

Type BFS-20-O / BFS-20-OL

for liquids from 30 up to 600 cSt with optical display

Features

viscosity compensated from 30 to 600 cSt,
set point continuously adjustable,
rugged, low hysteresis, any mounting position,
high accuracy and functional safety,
with 1/2" connection also available as low cost version

Measuring ranges

0,1 ... 0,8 l/min to 30 ... 90 l/min for liquids up from
30 to 600 cSt.

Applications

Measuring and monitoring of liquids, e. g. in cooling or
hydraulic systems, test beds, pumps etc.



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Technical data BFS-20-O (with indication)

Measuring principle : variable aera flow meter			
Materials	brass version	stainless steel vers.	
Flow meter	: brass, nickel-plated	1.4571	
Spring	: 1.4571	1.4571	
Fitting	: brass, nickel-plated	1.4571	
Display housing	: alumin., anodized	alumin., anodized	
Glass	: Duran 50	Duran 50	
Magnets	: ferrite	ferrite	
Operating pressure	brass	VA	press. drop
BFS-20-O	: PN 10 bar	10 bar	0,02...0,4 bar
Operating temperat. : 120 °C (standard), 160 °C (option HT)			

Technical data BFS-20-OL (with indication)

Measuring principle : variable aera flow meter			
Materials	brass version	stainless steel vers.	
Flow meter	: brass, nickel-plated	1.4571	
Spring	: 1.4571	1.4571	
Fitting	: brass, nickel-plated	1.4571	
Display housing	: alumin., anodized	alumin., anodized	
Glass	: Duran 50	Duran 50	
Magnets	: ferrite	ferrite	
Operating pressure	brass	VA	press. drop
BFS-20-OL	: PN 16 bar	16 bar	0,2...0,4 bar
Operating temperat. : 120 °C (standard), 160 °C (option HT)			

Switch. ranges for:	Liquid. in l/min	Process connections
BFS-20-O:	0,1...0,8	G1/4, G1/2, G3/4, G1
	0,5...1,5	
	1,0... 4,0	
	2,0...8,0	G1/2, G3/4, G1
	3,0...10	
	5,0...15	
	8,0...24	
	10...30	G3/4, G1
	15...45	
	20...60	
30 ..90		

Switch. ranges for:	Liquid. in l/min	Process connection
BFS-20-OL:	0,5...1,7	G1/2
	1,3...4,0	
	2,5...8,0	

Accuracy	: ±10% f. s.		
Electrical connect.	: plug acc. to DIN 43650		
Contact rating	BFS-20-O G1 : 250 V / 3 A / 100 VA (NO) 250 V / 1,5 A / 50 VA (SPDT)		
EEx-m II T6 vers.	: 250 V / 2 A / 60 VA (NO) G1 only 250 V / 1 A / 30 VA (SPDT) G1 only		
ExII 1GD	EEx ia II B T6 vers. : 45 V / 1 A / (NO / SPDT) G1 only		
Protection class	: IP65 (plug acc. to DIN 43650) IP67 (with moulded cable, EEx-models only)		

Accuracy	: ±10% f. s.		
Electrical connect.	: plug acc. to DIN 43650		
Contact rating	BFS-20-OL G1 : 250 V / 3 A / 100 VA (NO) 250 V / 1,5 A / 50 VA (SPDT)		
EEx-m II T6 vers.	: 250 V / 2 A / 60 VA (NO) G1 only 250 V / 1 A / 30 VA (SPDT) G1 only		
ExII 1GD	EEx ia II B T6 vers. : 45 V / 1 A / (NO / SPDT) G1 only		
Protection class	: IP65 (plug acc. to DIN 43650) IP67 (with moulded cable, EEx-models only)		

Barksdale Flow Switches Overview

Specifications are subject to changes without notice.

Type BFS-20-O / BFS-20-OL

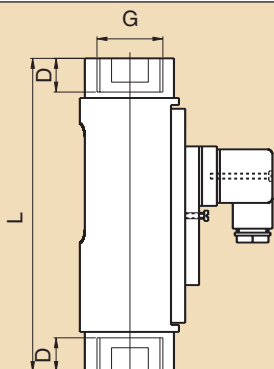
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Barksdale Flow Switches Overview

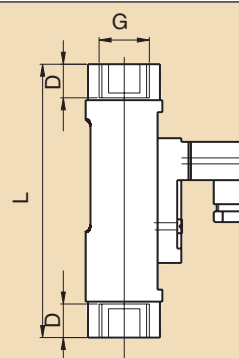
Specifications are subject to changes without notice.

Dimensions (in mm)

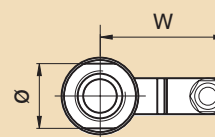
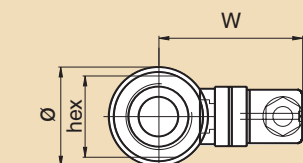
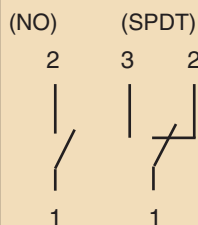
BFS-20-O



BFS-20-OL



Wiring diagram



(G)	G 1/4	G 1/2	G 3/4	G 1
(hex)	41	41	41	41
(Ø)	50	50	50	50
(W)	77	77	77	77
(D)	17	17	17	17
(L)	145	145	139	158
Weight (g)	850	850	850	850

(G)	G 1/2
(hex)	27
(Ø)	32
(W)	53
(D)	14
(L)	114
Weight (g)	300

Order numbers

BFS-20	Brass	BFS-20	Brass
0712-262	BFS-20-OL-G1/2-MS-NO-ST	0712-344	BFS-20-OL-G1/2-MS-WE-ST
0712-263	BFS-20-O-G1-MS-NO-ST	0712-345	BFS-20-O-G1-MS-WE-ST
	Stainless steel		Stainless steel
0712-264	BFS-20-OL-G1/2-SS-NO-ST	0712-346	BFS-20-OL-G1/2-SS-WE-ST
0712-265	BFS-20-O-G1-SS-NO-ST	0712-347	BFS-20-O-G1-SS-WE-ST

The version BFS-20-O is also available with process connections, please see table on page P5.
To place an order please add the process connection to the order number.

Order number example: Order number + switching range = 0712-262, 1,0...4,0 l/min

Description

NO = normally open	O = with indication	MS = brass	Please specify switching range
WE = change-over	OL = with indication, low cost	SS = stainless steel	(see table on page P5)
			additional to order number.

Type BFS-30-N / BFS-30-L / BFS-30-O

or liquids from 30 up to 600 cSt,
with or without optical display

Features

viscosity compensated from 30 up to 600 cSt,
set point continuously adjustable,
rugged, low hysteresis, any mounting position,
high accuracy and functional safety,
optional with pointer-indicating instrument

Measuring ranges

0.5...1.5 l/min to 35...110 l/min
for liquids from 30 up to 600 cSt.

Applications

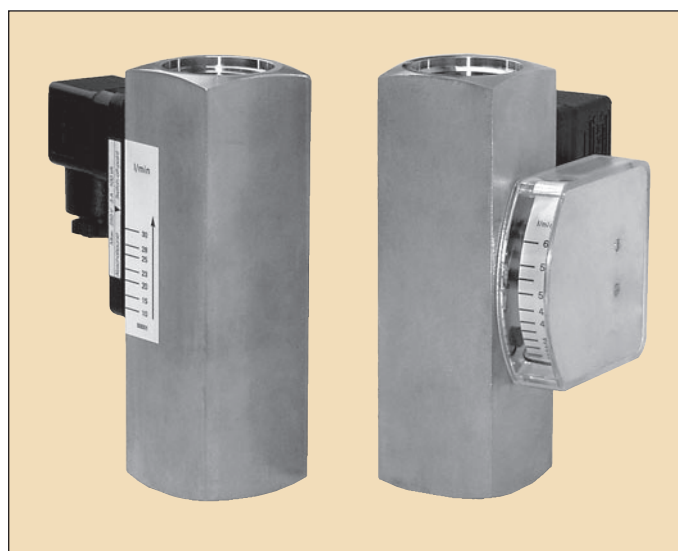
Measuring and monitoring of liquids, e. g. in cooling
or hydraulic systems, test beds, pumps etc.

Technical data BFS-30-N (without indication)

Measuring principle : variable aera flow meter			
Materials	brass version	stainless steel vers.	
Flow meter	: brass	1.4571	
Spring	: 1.4571	1.4571	
Fitting	: brass, nickel-plated	1.4571	
Housing	: brass, nickel-plated	1.4571	
Operating pressure	brass	VA	press. drop
BFS-30-N, N E	: PN 250 bar	300 bar	0,02...0,4 bar
BFS-30-L	: PN 300 bar	350 bar	0,02...0,2 bar
Operating temperat. : 120 °C (standard), 160 °C (option HT)			

Switch. ranges for:	in l/min	Process connections
BFS-30-L:	0,5...1,6	G1/4, G1/2
	0,8...3,0 / 2,0...7,0	G1/2
BFS-30-N	0,5...1,5	G1/4, G1/2, G3/4, G1
	1,0...4,0	
	2,0...8,0 / 3,0...10	G1/2, G3/4, G1
	5,0...15 / 8,0...24	
	10...30 / 15...45	G3/4, G1
	20...60	
	30...90 / 35...110	G1
BFS-30-N E :	1,0...20 / 4,0...40	G1/2, G3/4, G1
	5,0...50 / 8,0...60	G3/4, G1
	12...70 / 15...80	G1

Accuracy	: ±10% f. s.		
Electrical connect.	: plug acc. to DIN 43650		
Contact rating	BFS-30-L : 230 V / 3 A / 60 VA (NO) 250 V / 1,5 A / 50 VA (SPDT)		
	BFS-30-N, N E : 250 V / 3 A / 100 VA (NO) 250 V / 1,5 A / 50 VA (SPDT)		
	EEx-m II T6 vers. : 250 V / 2 A / 60 VA (NO) 250 V / 1 A / 30 VA (SPDT)		
	ExII 1GD EEx ia II B T6 vers. : 45 V / 1 A / (NO / SPDT)		
Protection class	: IP65 (plug acc. to DIN 43650) IP67 (with moulded cable, EEx-models only)		



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Technical data BFS-30-O (with indication)

Measuring principle : variable aera flow meter			
Materials	brass version	stainless steel vers.	
Flow meter	: brass	1.4571	
Spring	: 1.4571	1.4571	
Fitting	: brass, nickel-plated	1.4571	
Housing	: brass, nickel-plated	1.4571	
Display housing	: Makrolon	Makrolon	
Operating pressure	brass	VA	press. drop
BFS-30-O, O E	: PN 250 bar	300 bar	0,02...0,4 bar
Operating temperat. : 120 °C (standard), 160 °C (option HT)			

Switch. ranges for:	in l/min	Process connections
BFS-30-O	0,5...1,5	G1/4, G1/2, G3/4, G1
	1,0...4,0	
	2,0...8,0 / 3,0...10	G1/2, G3/4, G1
	5,0...15 / 8,0...24	
	10...30 / 15...45	G3/4, G1
	20...60	
	30...90 / 35...110	G1
BFS-30-O E :	1,0...20 / 4,0...40	G1/2, G3/4, G1
	5,0...50 / 8,0...60	G3/4, G1
	12...70 / 15...80	G1

Accuracy	: ±10% f. s.		
Electrical connect.	: plug acc. to DIN 43650		
Contact rating	BFS-30-O, O E : 250 V / 3 A / 100 VA (NO) 250 V / 1,5 A / 50 VA (SPDT)		
	EEx-m II T6 vers. : 250 V / 2 A / 60 VA (NO) 250 V / 1 A / 30 VA (SPDT)		
	ExII 1GD EEx ia II B T6 vers. : 45 V / 1 A / (NO / SPDT)		
Protection class	: IP65 (plug acc. to DIN 43650) IP67 (with moulded cable, EEx-models only)		

Barksdale Flow Switches Overview

Specifications are subject to changes without notice.

Type BFS-30-N / BFS-30-L / BFS-30-O

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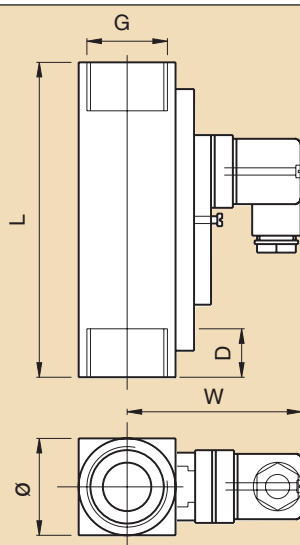
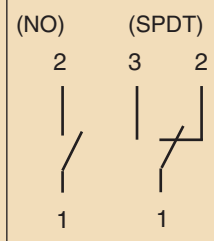
Barksdale Flow Switches Overview

Specifications are subject to changes without notice.

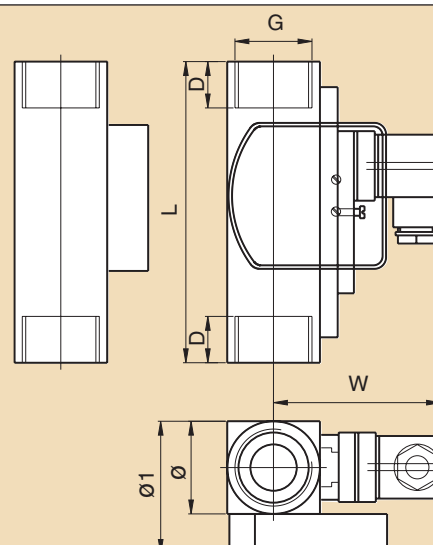
Dimensions (in mm)

BFS-30-N / L

Wiring diagram



BFS-30-O



(G)	G 1/4	G 1/2	G 3/4	G 1	1/2" (BFS-30-L)
(hex)	34	34	34	40	27
(Ø)	40	40	40	40	31
(W)	76	76	76	76	52
(D)	21	21	21	17	14
(L)	152	152	152	130	90
Weight (g)	1500	1425	1340	1160	350

(G)	G 1/4	G 1/2	G 3/4	G 1
(hex)	34	34	34	40
(Ø)	40	40	40	40
(W)	76	76	76	76
(D1)	57	57	57	57
(L)	152	152	152	130
Weight (g)	1590	1515	1430	1250

Order numbers

BFS-30	Brass	BFS-30	Brass
0713-266	BFS-30-L-G1/2-MS-NO-ST	0713-348	BFS-30-L-G1/2-MS-WE-ST
0713-267	BFS-30-N-G1-MS-NO-ST	0713-349	BFS-30-N-G1-MS-WE-ST
0713-268	BFS-30-NE-G1-MS-NO-ST	0713-350	BFS-30-NE-G1-MS-WE-ST
0713-272	BFS-30-O-G1-MS-NO-ST	0713-354	BFS-30-O-G1-MS-WE-ST
0713-273	BFS-30-OE-G1-MS-NO-ST	0713-355	BFS-30-OE-G1-MS-WE-ST
Stainless steel		Stainless steel	
0713-269	BFS-30-L-G1/2-SS-NO-ST	0713-351	BFS-30-L-G1/2-SS-WE-ST
0713-270	BFS-30-N-G1-SS-NO-ST	0713-352	BFS-30-N-G1-SS-WE-ST
0713-271	BFS-30-NE-G1-SS-NO-ST	0713-353	BFS-30-NE-G1-SS-WE-ST
0713-274	BFS-30-O-G1-SS-NO-ST	0713-356	BFS-30-O-G1-SS-WE-ST
0713-275	BFS-30-OE-G1-SS-NO-ST	0713-357	BFS-30-OE-G1-SS-WE-ST

Adaptor	Brass	Adaptor	Stainless steel
0799-026	1"...1/4"	0799-029	1"...1/4"
0799-027	1"...1/2"	0799-030	1"...1/2"
0799-028	1"...3/4"	0799-031	1"...3/4"

Order number example: Order number + switching range = 0713-266, 0,8...3,0 l/min

Description

NO = normally open	NE = without indication, enlarged meas. range	MS = brass	Please specify switching range (see table on page P7) additional to order number.
WE = change-over	OE = with indication, enlarged meas. range	SS = stainless steel	
	L = without indication, low cost		
	N = without indication		
	O = with indication		

Type BFS-40-N / BFS-40-O

for water monitoring,
with or without optical display

Features

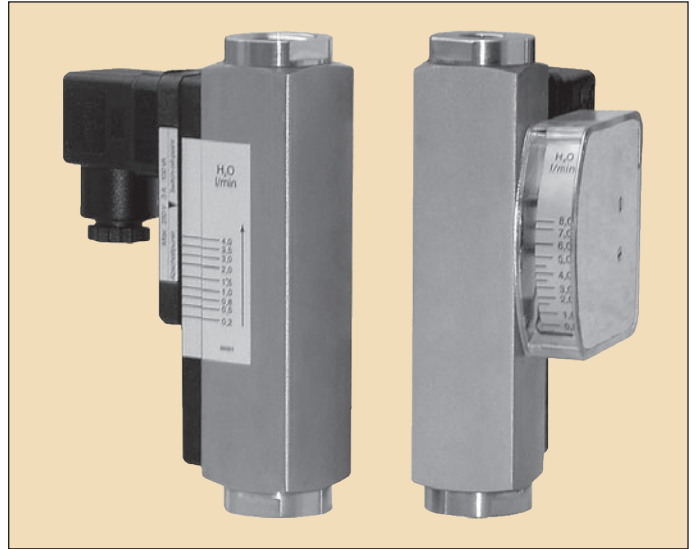
large switching range, set point continuously adjustable, rugged, low hysteresis, any mounting position, high accuracy and functional safety, optional with pointer-indicating instrument

Measuring ranges

0,2...4,0 l/min to 35...250 l/min for water

Applications

Measuring and monitoring of liquids, e. g. in cooling or hydraulic systems, test beds, pumps etc.



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Technical data BFS-40-N (without indication)

Measuring principle : variable aera flow meter			
Materials	brass version	stainless steel vers.	
Flow meter	: brass	1.4571	
Spring	: 1.4571	1.4571	
Fitting	: brass, nickel-plated	1.4571	
Housing	: brass, nickel-plated	1.4571	
Operating pressure	brass	VA	press. drop
BFS-40-N	: PN 200 bar	300 bar	0,02...0,8 bar
Operating temperat. : 100 °C (standard), 160 °C (option HT)			

Technical data BFS-40-O (with indication)

Measuring principle : variable aera flow meter			
Materials	brass version	stainless steel vers.	
Flow meter	: brass	1.4571	
Spring	: 1.4571	1.4571	
Fitting	: brass, nickel-plated	1.4571	
Housing	: brass, nickel-plated	1.4571	
Display housing	: Makrolon	Makrolon	
Operating pressure	brass	VA	press. drop
BFS-40-O	: PN 200 bar	300 bar	0,02...0,8 bar
Operating temperat. : 100 °C (standard), 160 °C (option HT)			

Switch. ranges for: in l/min	Process connections
BFS-40-N: 0,2...4,0 / 0,6...5,0 0,5...8,0 / 1,0...14 1,0...28	G1/4, G1/2
2,0...40 / 4,0...55	G1/2, G3/4
1,0...70 / 8,0...90 5...110	G3/4, G1
10...150	G1 1/4
35...220	G1 1/4, G1 1/2
35...250	G1 1/4, G1 1/2

Switch. ranges for: in l/min	Process connections
BFS-40-O: 0,2...4,0 / 0,6...5,0 0,5...8,0 / 1,0...14 1,0...28	G1/4, G1/2
2,0...40 / 4,0...55	G1/2, G3/4
1,0...70 / 8,0...90 5...110	G3/4, G1
10...150	G1 1/4
35...220	G1 1/4, G1 1/2
35...250	G1 1/2, G1 1/4

Accuracy	: ±10% f. s.
Electrical connect.	: plug acc. to DIN 43650
Contact rating	
BFS-40-N	: 250 V / 3 A / 100 VA (NO) 250 V / 1,5 A / 50 VA (SPDT)
EEx-m II T6 vers.	: 250 V / 2 A / 60 VA (NO) 250 V / 1 A / 30 VA (SPDT)
ExII 1GD	
EEx ia II B T6 vers.	: 45 V / 1 A / (NO / SPDT)
Protection class	: IP65 (plug acc. to DIN 43650) IP67 (with moulded cable, EEx-models only)

Accuracy	: ±10% f. s.
Electrical connect.	: plug acc. to DIN 43650
Contact rating	
BFS-40-O	: 250 V / 3 A / 100 VA (NO) 250 V / 1,5 A / 50 VA (SPDT)
EEx-m II T6 vers.	: 250 V / 2 A / 60 VA (NO) 250 V / 1 A / 30 VA (SPDT)
ExII 1GD	
EEx ia II B T6 vers.	: 45 V / 1 A / (NO / SPDT)
Protection class	: IP65 (plug acc. to DIN 43650) IP67 (with moulded cable, EEx-models only)

Barksdale Flow Switches Overview

Specifications are subject to changes without notice.

Type BFS-40-N / BFS-40-O

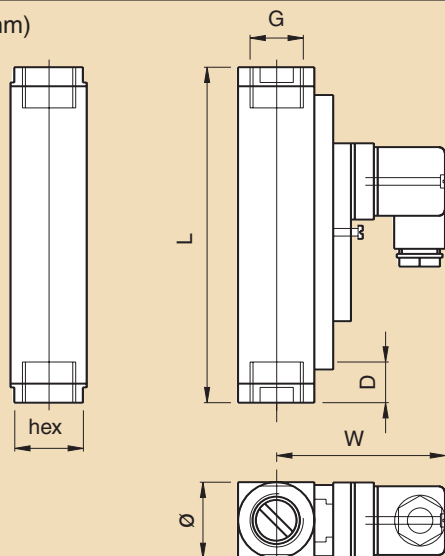
02 / 05 FLS US 01/1

Barksdale Flow Switches Overview

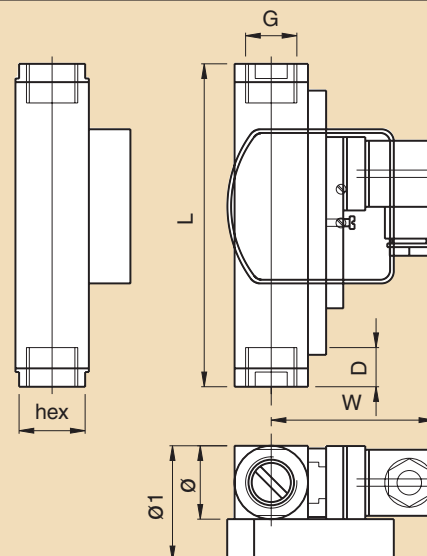
Specifications are subject to changes without notice.

Dimensions (in mm)

BFS-40-N



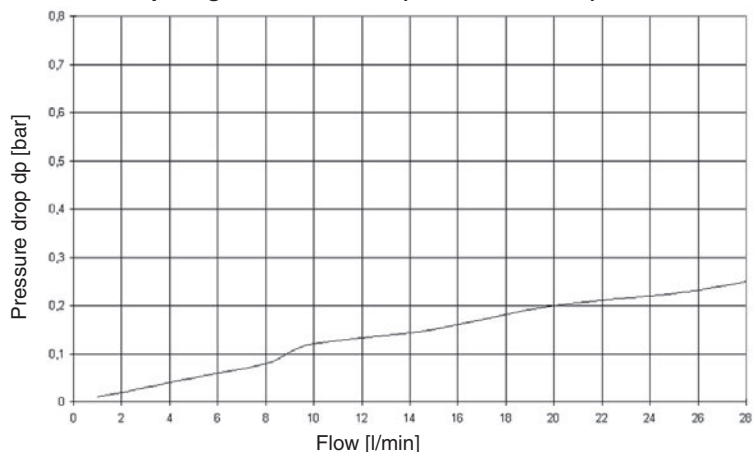
BFS-40-O



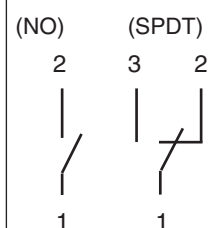
(G)	G 1/4	G 1/2	G 3/4	G 1	1 1/4	1 1/2
(hex)	27	27	27/34	40	40/50	60
(Ø)	30	30	30/40	40	40/50	60
(W)	71	71	71/76	76	76/81	82
(D)	14	14/16	16/18	19	21	24
(L)	130	148	148/152	156	200	200
Weight (g)	130/ 148	850/ 900	900/ 1450	1100	2750/ 3000	3800

(G)	G 1/4	G 1/2	G 3/4	G 1	1 1/4	1 1/2
(hex)	27	27	27/34	40	40/50	60
(Ø)	30	30	30/40	40	40/50	60
(Ø1)	47	47	47/57	57	57/67	77
(W)	71	71	71/76	76	76/81	82
(D)	14	14	16/18	19	21	24
(L)	130	130/148	148/152	156	200	200
Weight (g)	900	900/950	950/1450	1150	2800/ 3050	3850

Pressure drop diagram for BFS-40 (G 1/2/ 2-28 l/min)



Wiring diagram



Order number example

Type	Series	Process connection	Material	Switching range code	Contact	Electrical connection	Options
BFS-	40-O	G 1	SS	40	NO	ST	

Your order number

BFS-							
------	--	--	--	--	--	--	--

Series	Process conn.	Material	Switch. range	Contact	Electrical conn.	Options
(40-N) without indicat. (40-O) with indication	(G1/4) (G1/2) G3/4 (G1) (G1 1/4) (G1 1/2)	(MS) brass (SS) stainless steel	Code see page P9	(NO) (SPDT) (EX)* SPDT EX-m-version	(ST) plug (KA) 1 m cable	(HT) high-temperature (DK) 2. contact (LED) with LED-indicator

Informationen

The fastest way to more information:

... just complete the order form below and fax it!

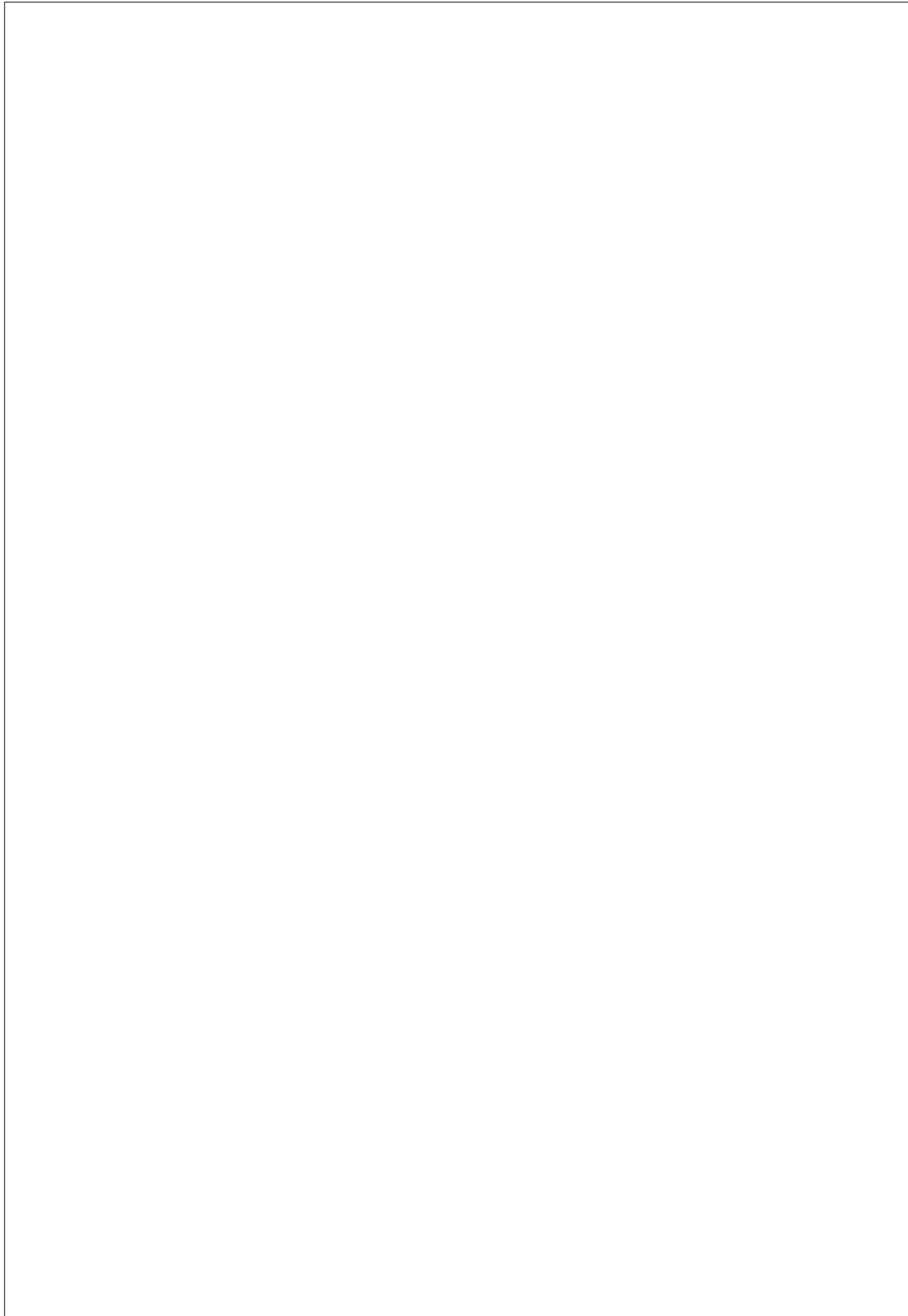
Fax to : **Barksdale GmbH**
Dorn-Assenheimer Strasse 27
D-61203 Reichelsheim / Germany
Fax: +49 (0) 60 35 - 9 49-111

From : Name :
Company :
Department :
Street / P.O.Box :
Post Code / City :
Telephone :
Fax :
e-mail :
Date :

Please send me detailed information about:

- Mechanical Pressure Switches
- Electronic Pressure Sensors
- Electronic Pressure Switches
- Level Switches
- Continuous Tank Level Indicating Systems
- Level Probes
- Bypass Level Indicating Systems
- Flow Switches
- Mechanical Temperature Switches
- Electronic Temperature Sensors
- Electronic Temperature Switches
- Shear Seal- / Air Suspension Valves

Please send me the Barksdale product CD with all available information about the complete product range (format: PDF).



In addition to the Flow Switches listed in this catalog our product range includes various other instrumentation and control equipment to monitor, measure and control

 **Pressure**

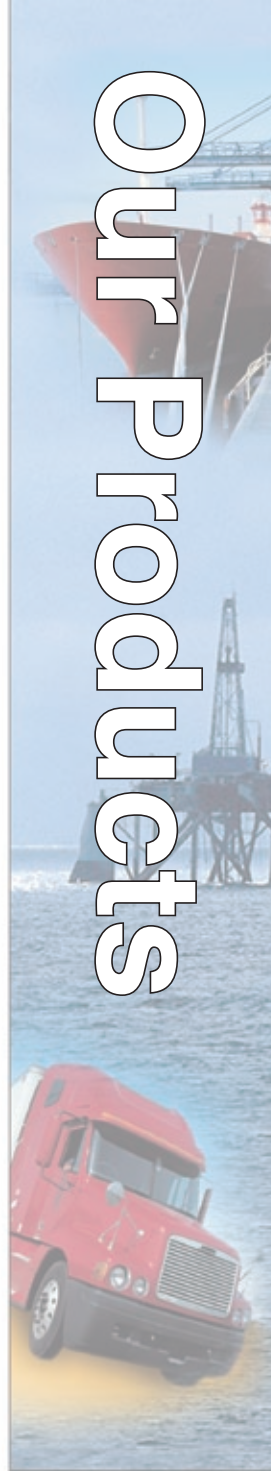
 **Temperature**

 **Level**

 **Flow**

We have the right solution for your measuring tasks.

Just contact us.



08 / 05 FLS-US 01/2


Barksdale Flow Switches

Specifications are subject to changes without notice.

Represented by

Barksdale

CONTROL PRODUCTS

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