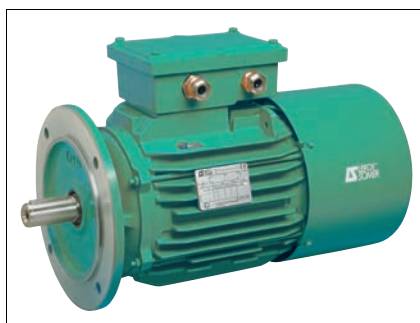


FCR asynchronous brake motors

FLS FCR

General information



GENERAL USE : U.G.

FCR enclosed three-phase asynchronous brake motors, series FLS with cast iron housing, according to IEC 34, 38, 72.

- Single speed : power 0.55 to 9 kW, frame size from 80 to 132 mm, 4 poles 230/400 V or 400 V Δ , 50 Hz.

For a non direct on line starting : consult us.

IP55 protection

Motors operating on variable speed :

- fitted with thermal probes in winding (obligatory).

Finish : cast iron housing

Assembled with protected screws.

Protection of the flange and shaft end

against atmospheric corrosion.
Individual anti-shock packaging.

Brake motor mains supply

- Standard construction according to IEC 38:
 - 230/400 V +10 % -10 % at 50 Hz ;
 - 400 V Δ +10 % -10 % at 50 Hz.
- The brake mains supply is integral and the brake motor connects as a standard motor. If it is separate: the alternating (ac) supply is exterior to the motor.

Options

- Selection of brake inertia (HA 80 to 100) ; manual brake release
- Drip cover ; 2nd shaft end ; thermal probes
- Reduced response time ; connector
- Encoders and/or forced ventilation.

Description of the FLS FCR cast iron three-phase brake motors

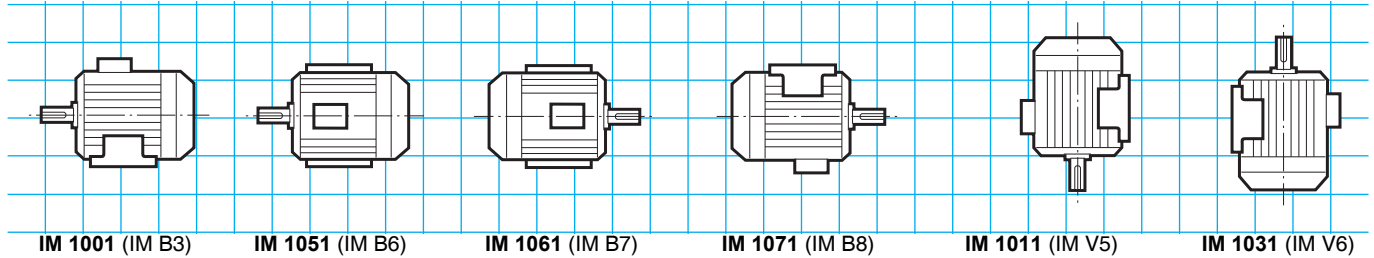
Component	Materials	Remarks
Finned housing	Cast iron	- with cast feet, or without feet <ul style="list-style-type: none"> • 4 mounting holes for the foot housing • optional lifting rings in 132 and 112 - earth terminal on foot or fin
Stator	Insulated low carbon magnetic steel laminations Enamelled electrolytic copper	- the low carbon content guarantees long term stability of the characteristics - assembled sheet steel lamination pack - semi-enclosed slots - insulation system class F
Rotor	Insulated low carbon magnetic steel laminations Aluminium	- inclined slots - squirrel cage pressure die cast in aluminium (or alloy for special applications) - mounted on shaft by heat shrinking. - level A rotor dynamic balancing - 1/2 key
Shaft	Steel	- for frame size \leq 132 : <ul style="list-style-type: none"> • shaft end fitted with screw and washer • closed keyway
End shields	Cast iron	- front and rear, assembled with tie rods
Bearings		- ball bearings, sealed, greased for life, type 2RS with the following mounting <ul style="list-style-type: none"> • locked rear to provide precise positioning of the load • front preloaded to eliminate axial movement
Lipseals	Synthetic rubber	front seals for IP 55 at the shaft
Fan	Aluminium alloy or cast iron	- 2 directions of rotation : straight blades
Fan cover	Sheet steel	- on request, fitted with a drip cover for operating in vertical position, shaft facing down
Terminal box	Cast iron	- IP 55 - 4 directions for flange version, mounted opposite to the feet for foot or foot and flange versions for frame sizes \geq 80 - fitted with a 6 stud terminal board - delivered with brass cable glands - 1 earth terminal in all terminal boxes
Painting		- system IIa, colour RAL 6000 (green) with <ul style="list-style-type: none"> • 1 coat of primer (supports treatment) • 1 polyurethane coat 25/30 μm - resistance to saline mist : 250 h (following NFX 41002)

FCR asynchronous brake motors FLS FCR

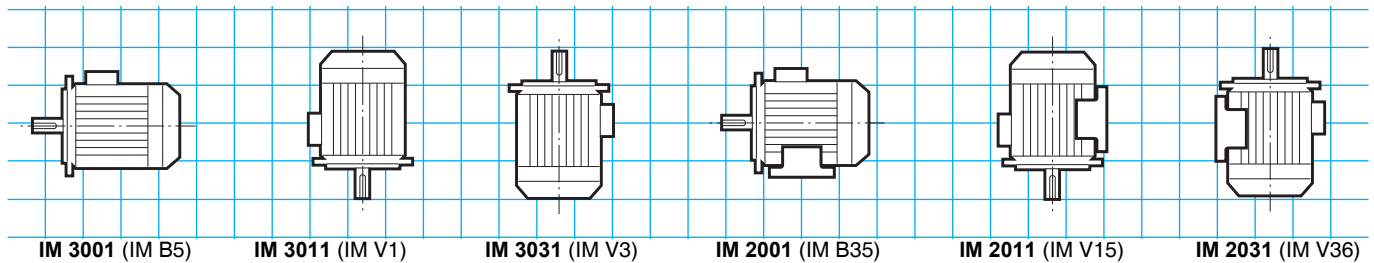
Mounting - Operating positions

Reference position is viewed from side F (drive end shaft)

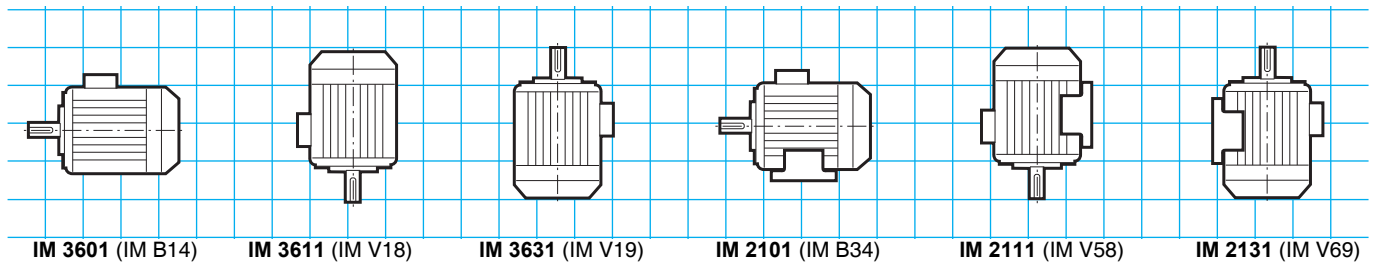
Foot mounted motor



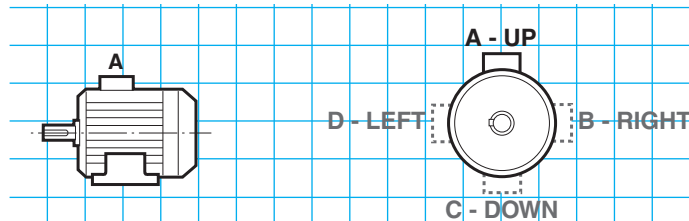
(FF) plain hole flange mounted motor



(FT) tapped hole flange mounted motor



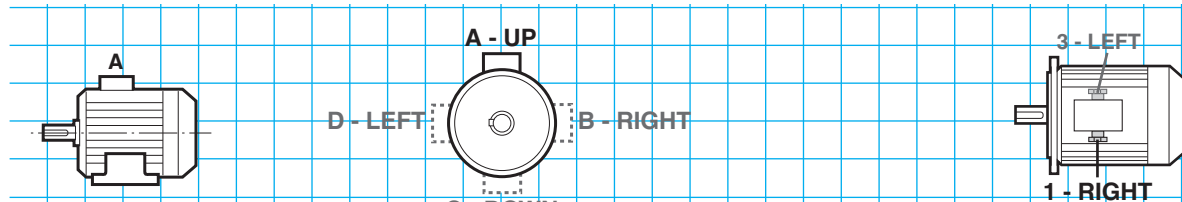
Positions of the terminal box in relation to the motor shaft end



Foot mounted motor
A: only possibility

Flange mounted motor
A - UP: standard

Positions of the cable gland in relation to the motor shaft end



Standard in the terminal box
(1: RIGHT and 3: LEFT possible)

FCR asynchronous brake motors

FLS FCR

Adaptation possibilities

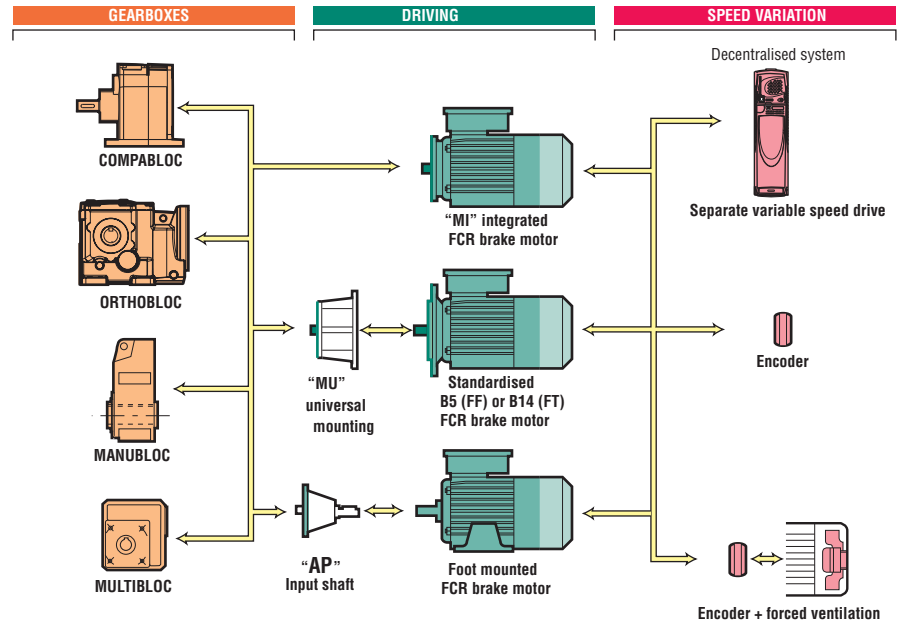
Leroy-Somer offers, for use with their general use brake motors, many options which meet the needs of highly diverse applications. They are described below and in the chapters relating to fixed speed motors, gearboxes and to variable speed drives. For other variants or any specific adaptation, consult the technical specialists at Leroy-Somer who will be pleased to advise you.

☞ **FLS FCR brake motors may be integrally mounted (fitted motor), or with universal mounting (IEC standardised motor) with the following gearboxes :**

- Compabloc
- Orthobloc
- Manubloc
- Multibloc

☞ **FLS FCR brake motors may be controlled by a variable speed drive :**

- Centralised system with separate variable speed drive FLSMV brake FCR



Designation / Codification

4P 1500 min ⁻¹	FLS	80	L	0.75 kW	IM 3001 (IM B5)	230/400 V 50 Hz	U.G.	FCR	J02	10 N.m	A1
Speed polarity	Motor series	Motor frame size	Manuf. index (motor)	Motor rated power : kW	Mounting position	Power supply frequency and voltage	Use	Brake type	Selected inertia	Brake torque	T Box and PE position

☞ **Codification example :**

4P FLS 80 L 0.75 kW IM3001 (IM B5) 230/400 V 50 Hz U.G. FCR J02 10 N.m A1

Designation :

4P FLS 80 L 0.75 kW B5 230/400 V 50 Hz U.G. FCR J02 10 N.m

All the products in this catalogue have a code. The coding table is incorporated in the price list together with the list of designations. Each brake motor product is classified first in order of power and then in order of speed.

FCR asynchronous brake motors FLS FCR

Selection

4
poles
1500 min⁻¹

- FLS series motor - IP 55 - 50 Hz - Class F - 230 V Δ / 400 V Y or 400 V Δ
Aluminium Rotor (ALU) - U.G. General Use
- Brake - IP 55 - Integrated mains supply - Brake torque set in factory

Motor type	Brake type	Rated power at 50 Hz P_N kW	Rated speed N_N min ⁻¹	Rated torque M_N N.m	Rated current I_N 400 V A	Power factor $\cos \varphi$	Efficiency η 100 %	Starting current / Rated current I_D / I_N	Starting torque / Rated torque M_D / M_N	Moment of inertia J 10 ⁻³ kg.m ²	Brake torque $M_f \pm 20\%$ N.m	Weight ¹ IM B3 or B5 kg
FLS 80 L	FCR J02	0.55	1410	3.7	1.6	0.74	69.2	4.4	2.1	3.8	10	22
FLS 80 L	FCR J02	0.75	1425	5	2	0.75	72.5	5.7	3	4.9	10	24
FLS 90 S	FCR J02	1.1	1429	7.5	2.5	0.83	78	4.9	1.6	7.3	20	28
FLS 90 L	FCR J02	1.5	1428	10	3.3	0.82	79.5	5.3	1.8	7.9	20	30
FLS 90 L	FCR J02	1.8	1438	12.3	4	0.82	80.1	5.9	2.1	8.4	20	32
FLS 100 LK	FCR J01	2.2	1457	15	4.6	0.83	83.8	6.3	1.9	12	22	57
FLS 100 LK	FCR J01	3	1454	20	6.2	0.82	84.7	6.5	2.1	13.7	43	60
FLS 112 MG	FCR J01	4	1462	27.5	8.4	0.81	85.1	7.4	2.5	16.3	43	64
FLS 132 SM	FCR J02	5.5	1467	37	10.9	0.84	87	8	2.7	42.4	80	80
FLS 132 M	FCR J02	7.5	1450	50	14.3	0.87	87	7.3	1.9	46.2	80	85
FLS 132 M	FCR J02	9	1449	61	16.8	0.88	87.7	7.6	2.8	50	105	90

1. These values are given for information only.

FCR asynchronous brake motors FLS FCR

Selection

4
poles
1500 min⁻¹

U.G. general use
IP 55 - 50 Hz - Class F - 230 V Δ / 400 V Y

Motor type	Brake type	Rated power at 50 Hz	Brake torque	IM 1001 (IM B3)		IM 3001 (IM B5)		IM 3601 (IM B14)	
		P_N kW	$M_f \pm 20\%$ N.m	Code	Qty	Code	Qty	Code	Qty
FLS 80 L	FCR J02	0.55	10	4556838	-	4005013	-	4174850	-
FLS 80 L	FCR J02	0.75	10	4556839	-	4085555	-	4556908	-
FLS 90 S	FCR J02	1.1	20	4556814	-	4556909	-	4556910	-
FLS 90 L	FCR J02	1.5	20	4207157	-	4434516	-	4372913	-
FLS 90 L	FCR J02	1.8	20	4557001	-	4180354	-	4557007	-
FLS 100 LK	FCR J01	2.2	22	4557872	-	4313700	-	4557873	-
FLS 100 LK	FCR J01	3	43	4306467	-	4557956	-	4557972	-
FLS 112 MG	FCR J01	4	43	4556840	-	4556915	-	4556916	-
FLS 132 SM	FCR J02	5.5	80	4556824	-	4495208	-	4556919	-
FLS 132 M	FCR J02	7.5	80	4357611	-	4556921	-	4556923	-
FLS 132 M	FCR J02	9	105	4556823	-	4556924	-	4556926	-

Selection example :

Required power : 1.1 kW
 Required speed : 1430 min⁻¹
 Mounting and position : IM 3001 (IM B5)

Designation :

4P FLS 90 S 1.1 kW B5 230/400V
 UG FCR J02 20 N.m

Code : 4556909

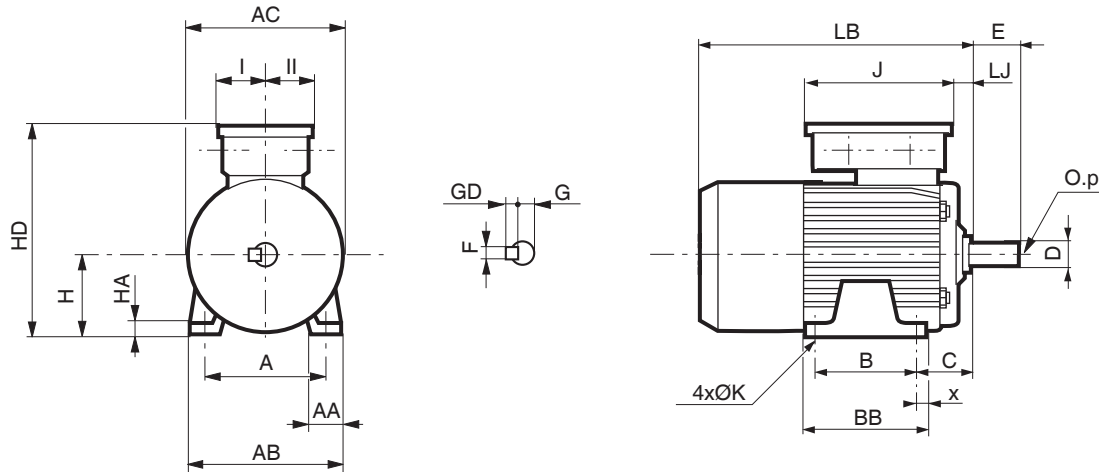
FCR asynchronous brake motors FLS FCR

Dimensions

Dimensions of the FLS FCR, FLSPX FCR asynchronous brake motors

Dimensions in millimetres

– foot mounted



Type	Brake motor																
	A	AA	AB	AC	B	BB	C	HD	H ²	HA	LJ	J	I	II	K	LB	x
FLS ¹ 80 L FCR J02	125	32	157	160	100	130	50	236	80	10	26.5	187	63.5	63.5	9	265	20
FLS ¹ 90 L FCR J02	140	34	172	185	125	160	56	256	90	11	21.5	187	63.5	63.5	9	304	22
FLS ¹ 100 LK FCR J01	160	42	200	226	140	174	63	291	100	12	48.5	187	63.5	63.5	12	406	22
FLS ¹ 112 MG FCR J01	190	45	230	226	140	174	70	302	112	12	48.5	187	63.5	63.5	12	406	22
FLS ¹ 132 M FCR J02	216	58	255	264	178	223	89	345	132	15	39.5	187	63.5	63.5	12	492	31

1. Dimensions identical for FLSPX zone 21

2. Caution, the AC dimension divided by 2 can be higher than H.

Type	Output shaft					
	D	E	F	G	GD	O.p
FLS ¹ 80 L FCR J02	19j6	40	6	15.5	6	6.16
FLS ¹ 90 L FCR J02	24j6	50	8	20	7	8.19
FLS ¹ 100 LK FCR J01	28j6	60	8	24	7	10.22
FLS ¹ 112 MG FCR J01	28j6	60	8	24	7	10.22
FLS ¹ 132 M FCR J02	38k6	80	10	33	8	12.28

1. Dimensions identical for FLSPX zone 21

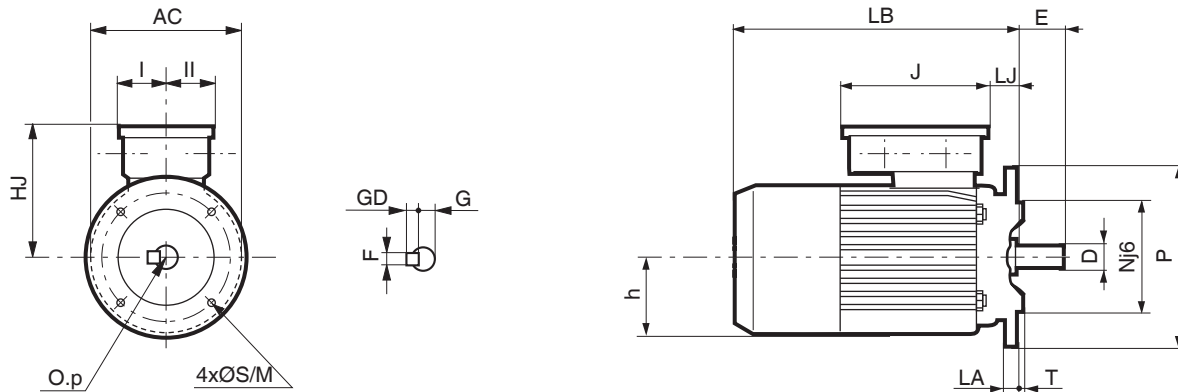
FCR asynchronous brake motors FLS FCR

Dimensions

Dimensions of the FLS FCR, FLSPX FCR asynchronous brake motors

Dimensions in millimetres

– (FF) plain hole flange mounted



Type	Brake motor								Output shaft					
	AC	HJ	h	J	I	II	LB	LJ	D	E	F	G	GD	O.p
FLS ¹ 80 L FCR J02	158	156	90	187	63.5	63.5	292	53.5	19j6	40	6	15.5	6	6.16
FLS ¹ 90 L FCR J02	184	166	100	187	63.5	63.5	324	41.5	24j6	50	8	20	7	8.19
FLS ¹ 100 LK FCR J01	220	191	131	187	63.5	63.5	424	66.5	28j6	60	8	24	7	10.22
FLS ¹ 112 MG FCR J01	220	191	131	187	63.5	63.5	435	66.5	28j6	60	8	24	7	10.22
FLS ¹ 132 M FCR J02	264	213	131	187	63.5	63.5	532	79.5	38k6	80	10	33	8	12.28

1. Dimensions identical for FLSPX zone 21

Type	FF flange								
	Symb.	M	N	n	P	S	T	LA	
FLS ¹ 80 L FCR J02	FF 165	165	130	4	200	12	3.5	10	
FLS ¹ 90 L FCR J02	FF 165	165	130	4	200	12	3.5	10	
FLS ¹ 100 LK FCR J01	FF 215	215	180	4	250	15	4	12	
FLS ¹ 112 MG FCR J01	FF 215	215	180	4	250	14.5	4	12	
FLS ¹ 132 M FCR J02	FF 265	265	230	4	300	15	4	14	

1. Dimensions identical for FLSPX zone 21

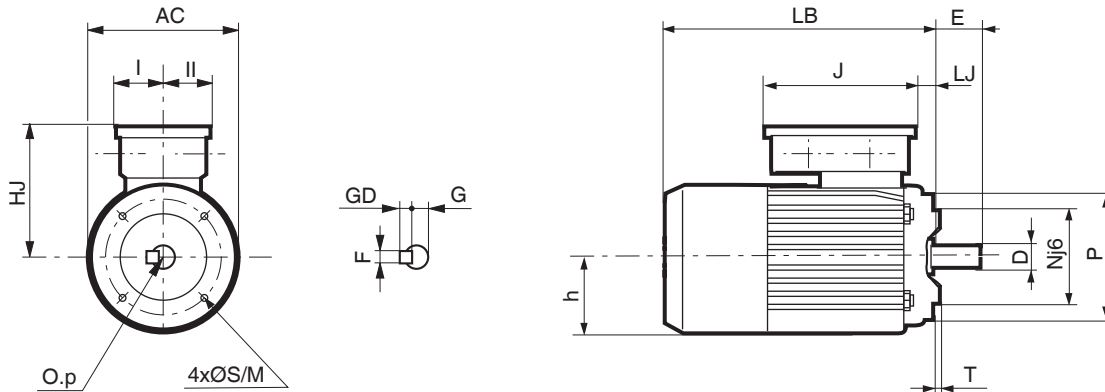
FCR asynchronous brake motors FLS FCR

Dimensions

Dimensions of the FLS FCR, FLSPX FCR asynchronous brake motors

Dimensions in millimetres

– (FT) tapped hole flange mounted



Type	Brake motor								Output shaft					
	AC	HJ	h	LJ	J	I	II	LB	D	E	F	G	GD	O.p
FLS¹ 80 L FCR J02	158	156	90	26.5	187	63.5	63.5	265	19j6	40	6	15.5	6	6.16
FLS¹ 90 L FCR J02	184	166	100	21.5	187	63.5	63.5	304	24j6	50	8	20	7	8.19
FLS¹ 100 LK FCR J01	220	191	131	48.5	187	63.5	63.5	406	28j6	60	8	24	7	10.22
FLS¹ 112 MG FCR J01	220	191	131	48.5	187	63.5	63.5	406	28j6	60	8	24	7	10.22
FLS¹ 132 M FCR J02	264	213	131	39.5	187	63.5	63.5	492	38k6	80	10	33	8	12.28

1. Dimensions identical for FLSPX zone 21

Type	Symb.	FT flange					
		M	N	n	P	S	T
FLS¹ 80 L FCR J02	FT 100	100	80	4	120	M6	3
FLS¹ 90 L FCR J02	FT 115	115	95	4	140	M8	3
FLS¹ 100 LK FCR J01	FT 130	130	110	4	160	M8	3.5
FLS¹ 112 MG FCR J01	FT 130	130	110	4	160	M8	3.5
FLS¹ 132 M FCR J02	FT 215	215	180	4	250	M12	4

1. Dimensions identical for FLSPX zone 21