

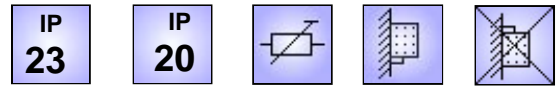


Type series FSL 16.. up to FSL 20..  
Type series FAL 16.. up to FAL 20..

0,25 – 4,5 kW with up to 12 terminals



FSL 191206



FSL... Wirewound lamina type fixed resistor, degree of protection IP 23 with weatherproof roof  
FAL... Wirewound lamina type fixed resistor, degree of protection IP 20 without weatherproof roof

In zinc plated steel sheet enclosure with up to 12 terminals and several holes for cable glands, that are closed by rubber sockets.

**Technologies**

- continuous dissipation up to 4,5 kW
- wall mounting only (laying mounting not allowable!)
- adjustable clips possible
- up to 12 terminals possible
- temperature switch is not provided

The resistance value can be changed by means of adjustable clips. The number of available adjustable clips depends on type and wiring.

Intermediate values of power can be achieved by variation of the number of laminas. (For three-phase version a multiple of 3)

The number of terminals is determined by position 5 and 6 of the type. (see dimensioning example)

You will find further details for short term dissipation in chapter Technical Details, pages T513 - T517.

**Application**

- Braking resistor for medium power ratings and medium ohmic values in degree of protection IP 23 and IP 20
- starting and regulating resistor for three-phase slip-ring rotor motors
- three-phase load resistor with partial resistances

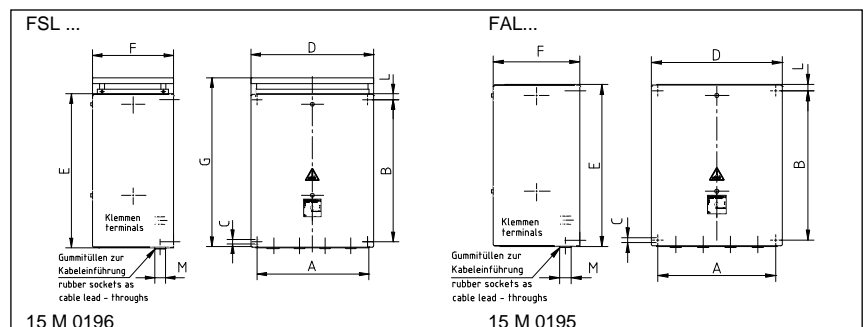
**Special design**

- version of low induction and of low noise (support straps made of aluminium or stainless steel)
- version with degree of protection IP 00, type series FKL 16.. up to FKL 20.. . The dimensions are identical with FAL ..
- terminals BK M6 (max.6 pcs.) and/or. M8 (max. 3 pcs.)

**Electrical and mechanical data**

Type FSL... FAL...	power in kW at 40°C and 100%DCF	production range Ω-value (total resistance)		number of lamina and size	drill holes for cable entry point  M	maximum # of terminals up to 35A
		from	up to			
F. L 1602..	0,250	0,23	40	2 L2	1PG9 + 1PG16	7
F. L 1603..	0,375	0,35	60	3 L2		7
F. L 1704..	0,50	0,46	80	4 L2	1PG9 + 1PG16	7
F. L 1706..	0,75	0,69	120	6 L2		7
F. L 1805..	1,00	0,90	150	5 L3	3PG13,5 + 1PG16	10
F. L 1806..	1,20	1,10	180	6 L3		10
F. L 1906..	1,50	1,50	250	6 L4	1PG13,5 + 1PG16 + 3PG21	12
F. L 1909..	2,25	2,20	380	9 L4		12
F. L 1912..	3,00	3,00	510	12 L4		12
F. L 2015..	3,75	3,70	640	15 L4		1PG13,5 + 1PG16 + 3PG21
F. L 2018..	4,50	4,40	770	18 L4	12	

Type FSL... FAL...	dimension in mm								max. weight in kg
	A	B	Ø C	D	E	F	G only FSL	L	
F. L 16..	155	210	5,8	190	235	130	270	12,5	3,0
F. L 17..	155	210	5,8	190	235	180	270	12,5	5,0
F. L 18..	165	270	5,8	230	295	182	335	12,5	7,0
F. L 19..	220	370	8,5	290	410	200	480	18	15
F. L 20..	220	370	8,5	290	410	335	480	18	25



**Example of dimensioning and selection of a specific unit:**

Three-phase load resistor 3 x 1,5 kW = 4,5 kW; for 3 x 230/400 V; 50 Hz; 3 x 6,6 A, 3 x 35 Ω; wired on 3 flat terminals 35 A. Star point in the resistor.  
Selected: FSL 201803 – 3 x 35 with continuous dissipation 4,5 kW

