



Type series FZP / FZN / FZR  
and FUP / FUN / FUR

12 – 300 W for vertical mounting



Cemented wirewound tubular fixed resistor in one-tube design, degree of protection IP20<sup>②</sup>, in perforated steel sheet enclosure, mounting vertical to mounting surface, connections optionally at terminals or at screw or fast-on clips at the resistor. For integration into switch cabinets.

② terminals protected against access to hazardous parts according to BGV A2

③ optional for D = 45, type designation would be FZP.U ..., width 87,5 mm instead of 65 mm (construction with device terminals G10/G5)

### Technologies

- protected against access to hazardous parts
- only small fixing space needed
- mounting vertically on mounting plate
- connections at terminals or at screw or fast-on clips
- adjustable clips (Ags.) available with type series FZR, FUR, FZN, FUN

### Option: temperature switch (..Q)

Available for type series FZP beginning with size D = 24 mm, for D=45 only in larger enclosure with width of 87,5 mm instead of 65 mm.

This type can be equipped with a 180° C temperature switch for monitoring. The switch is wired on porcelain terminals and signals an overloading of the resistor. This is done by a normally closed contact free of potential (NCC). This signal has to be considered by the customer, e.g. by warning or disconnection of the mains. (Restrictions please look on page T105E).

**Warning:** There will not be a disconnection of the resistor!

Type designation then: FZPQ ...

Contact rating of the signal contact:

- 2 A / 24 VDC (DC11)
- 2 A / 230 VAC (AC11)

You will find suggestions for the dimensioning of the resistor for continuous and short term load at chapter Technical Details, pages T106E and T107E.

### Application

This type is used as a ballast, limiting, filter or series resistor and is perfectly suited for integration into switch cabinets.

### Special design

- we provide polyamide device terminals G5

### Description of the different types

#### Type F.P (Standard)

2 connections wired on a porcelain terminal, which is accessible without demounting the cover and protected against access to hazardous parts according to BGV A2. The terminal is fixed on the enclosure front plate. Adjustable clip not available. Temperature switch available.

#### Type F.N

2 connections wired on a porcelain terminal, which is accessible without demounting the cover and protected against access to hazardous parts according to BGV A2. The terminal is fixed on the enclosure bottom plate. Adjustable clips available. Temperature switch not available.

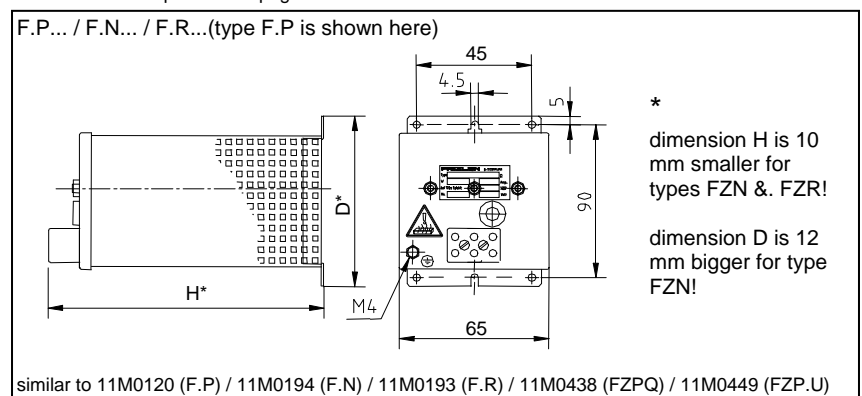
#### Type F.R

2 connections directly at the resistor, which are accessible after unscrewing the enclosure front plate. Adjustable clips available. Temperature switch not available.

### Electrical and mechanical data

Type series	typical power in W at 40°C, 100% DCF	production range Ω-value		dimensions in mm		approx. weight in g
		from	up to	D*	H*	
FZP (standard) / F.N / F.R						
L x D (**)						
F.P 50x16 (A)	12	0,27	6,8k	100	141	330
F.P 63x16 (A)	18	0,39	10k	100	141	340
F.P 100x16 (A)	34	0,68	18k	100	141	350
F.P 75x24 (S)	32	0,1	18k	100	141	370
F.P 100x24 (S)	44	0,15	22k	100	141	400
F.P 165x24 (S)	80	0,33	12k	100	238	500
F.P 100x35 (S)	65	0,22	18k	100	141	500
F.P 135x35 (S)	100	0,33	10k	100	238	600
F.P 200x35 (S)	150	0,56	6,8k	100	238	700
F.P 160x45 (S)	150	0,47	6,8k	100	238	700
F.P 200x45 (S)	180	0,68	5,6k	100	238	800
F.P 300x45 (S)	300	1,2	3,9k	100	336	1100

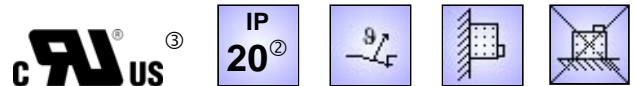
(\*\*)Type series F.P/F.N are generally equipped with fast-on clips. Type designation would be ..A or ..S, except for low ohmic values. As far as type series F.R is concerned, you are free to choose. For further details please see pages T109E/110E.





Type series FZZP / FZDP  
and FUZP / FUDP

24 – 900 W for vertical mounting



Cemented wirewound tubular fixed resistor in two-tubes (F.ZP) or three-tubes design (F.DP), degree of protection IP20<sup>②</sup>, in perforated steel sheet enclosure, mounting vertical to mounting surface. For integration into switch cabinets. Standard version:

One-phase resistor with 2 connections at terminals on the enclosure front plate.

② terminals protected against access to hazardous parts according to BGV A2

③ optional for D = 45, type designation would be FZ.P.U..  
(version with device terminals G10/G5)

**Technologies**

- protected against access to hazardous parts
- only small fixing space needed
- vertical mounting on mounting plate
- two - or three-phase version, also available with star point in the unit, i.e. connections at 2, 3, 4 or 6 terminals

**Option: temperature switch (..Q)**

- beginning with size D = 24 mm only!

This type can be equipped with a 180° C temperature switch for temperature monitoring. It is wired on porcelain terminals and monitors an overloading of the resistor by a normally closed contact free of potential (NCC). This signal has to be considered by the customer e.g. by a warning or disconnection of the mains. (Restrictions please look on page T105E).

**Warning:** There will not be a disconnection of the resistor!  
Type designation then: FZ.PQ ...

Contact rating of the signal contact:

- 2 A / 24 VDC (DC11)
- 2 A / 230 VAC (AC11)

You will find suggestions for the dimensioning of the resistor for continuous and short term load at chapter Technical Details, pages T106E and T107E.

**Application**

This type is used for limiting the switch-on current and for short – circuit braking in a three-phase version. Also as filter, braking or series resistor in a one- or two-phase version.

It is perfectly suited for integration into switch cabinets.

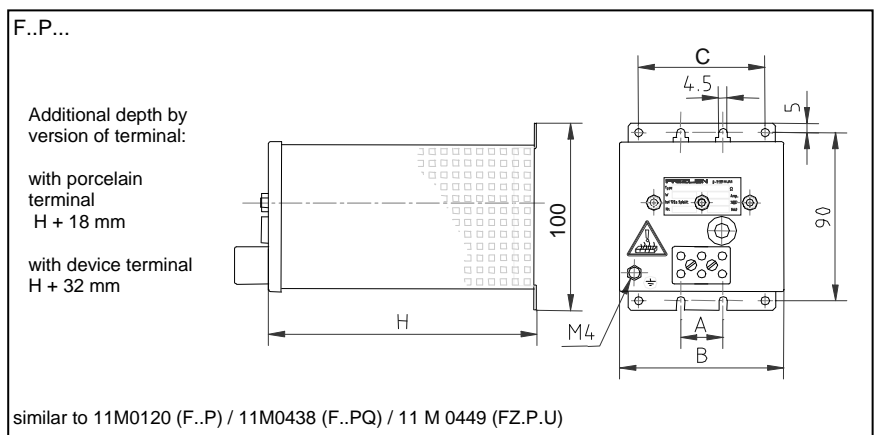
**Special design**

- with polyamide device terminals G5 (max. 6 term. without TS or 3 term. with TS)

**Electrical and mechanical data**

Type series F.Z.P (standard) /F..N/F..R L x D (*)	typical power in W at 40°C, 100% DCF	production range Ω-value		dimensions in mm				approx. weight in kg
		from	up to	A	B	C	H	
F.ZP 50x16 (A)	24	0,47	12k	22,5	87,5	67,5	123	0,42
F.ZP 63x16 (A)	36	0,68	18k	22,5	87,5	67,5	123	0,43
F.ZP 100x16 (A)	68	1,2	15k	22,5	87,5	67,5	123	0,45
F.ZP. 75x24 (S)	64	0,18	18k	45	110	90	123	0,62
F.ZP. 100x24 (S)	88	0,27	8,2k	45	110	90	123	0,70
F.ZP. 165x24 (S)	160	0,56	6,8k	45	110	90	190	0,85
F.ZP. 100x35 (S)	130	0,39	8,2k	75	140	120	220	1,20
F.ZP. 135x35 (S)	200	0,56	5,6k	75	140	120	220	1,30
F.ZP. 200x35 (S)	300	1,0	3,9k	75	140	120	220	1,40
F.ZP. 160x45 (S)	300	0,82	3,9k	105	178	150	220	1,40
F.ZP. 200x45 (S)	360	1,2	2,7k	105	178	150	220	1,50
F.ZP. 300x45 (S)	600	2,2	1,8k	105	178	150	318	2,00
F.DP 50x16 (A)	36	0,82	27k	22,5	87,5	67,5	123	0,45
F.DP 63x16 (A)	54	1,0	18k	22,5	87,5	67,5	123	0,47
F.DP 100x16 (A)	102	1,8	10k	22,5	87,5	67,5	123	0,50
F.DP. 75x24 (S)	96	0,27	12k	45	110	90	123	0,70
F.DP. 100x24 (S)	132	0,47	8,2k	45	110	90	123	0,80
F.DP. 165x24 (S)	240	1,0	4,7k	45	110	90	190	1,10
F.DP. 100x35 (S)	195	0,68	5,6k	75	140	120	220	1,30
F.DP. 135x35 (S)	300	1,0	3,9k	75	140	120	220	1,40
F.DP. 200x35 (S)	450	1,5	2,7k	75	140	120	220	1,60
F.DP. 160x45 (S)	450	1,2	2,7k	105	178	150	220	1,60
F.DP. 200x45 (S)	540	1,8	1,8k	105	178	150	220	1,90
F.DP. 300x45 (S)	900	3,3	1,2k	105	178	150	318	2,50

(\*)The versions above are generally equipped with fast-on clips. Type designation would be ..A or ..S. except for: low ohmic values. For further details please see pages T109E/110E.



Example: Continuous dissipation 3x150W, resistance value 3x120Ω, star point in the device (connection at 3 porcelain terminals)  
Ordering designation: FZDP 200x35S – 3x120