

Ignitors

Superimposed Pulse Ignitors  
ZRM 2-ES/C, ZRM 2.5-ES/C, ZRM 4.5-ES/C, ZRM 6-ES/C, ZRM 12-ES/C



Packaging:

ZRM 2–4.5 ES/C:  
50 pcs./carton  
600 pcs./pallet low volume  
4,200 pcs./pallet high volume

ZRM 6 ES/C:  
20 pcs./carton  
260 pcs./pallet low volume  
2,340 pcs./pallet high volume

ZRM 12 ES/C:  
20 pcs./carton  
200 pcs./pallet low volume  
1,800 pcs./pallet high volume

Figure 1

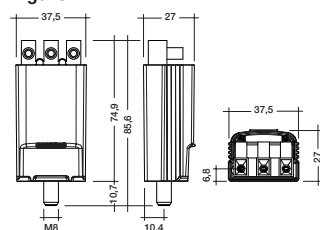


Figure 2

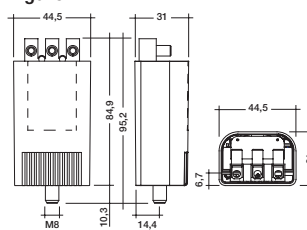
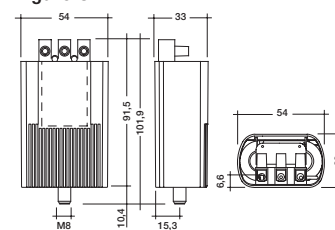


Figure 3



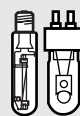
Standards:

EN 61347-2-1  
EN 60927

Type		ZRM 2-ES/C	ZRM 2.5-ES/C	ZRM 4.5-ES/C	ZRM 6-ES/C	ZRM 12-ES/C
Article number		87500080	87500081	87500082	87500083	87500084
Line voltage	V	198–264	198–264	198–264	198–264	198–264
Switch off/on voltage	V	175–198	175–198	175–198	175–198	175–198
Mains frequency	Hz	50–60	50–60	50–60	50–60	50–60
Ignition voltage	kV	1.8–2.5	4.0–5.0	4.0–5.0	4.0–5.0	4.0–5.0
Phase displacement of ignition impulses	°	60–90/240–270	60–90/240–270	60–90/240–270	60–90/240–270	60–90/240–270
Number of impulses per halfwave		4–5	3	3	3	3
Impulse width at U <sub>zmin</sub> -10 %	µs	>2	>1,5	>1,5	>1,5	>1,5
Starting current (approx.)	mA	120	120	120	120	120
Max. permissible lamp current I <sub>B</sub>	A	2.0	3.0	4.6	5.0	12.0
Lamp wattage HS	W	35–70 ①	70–250 ②	70–400 ②	70–400 ②	250–1000
Lamp wattage HI	W	70 ①/150	35–250	35–400	35–400	250–1000
Temperature rise at I <sub>B</sub> = 0.54 A (35 W)	K	0.2	0.1	0.1	–	–
I <sub>B</sub> = 0.76 A (50 W)	K	1.0	–	–	–	–
I <sub>B</sub> = 1.0 A (70 W)	K	2.5	2.5	1	1.1	–
I <sub>B</sub> = 1.2 A (100 W)	K	–	4	2	1.9	–
I <sub>B</sub> = 1.8 A (150 W)	K	–	9.5	6.5	3.7	–
I <sub>B</sub> = 1.9 A (150 W)	K	11.0	–	–	–	–
I <sub>B</sub> = 3.0 A (250 W)	K	–	27	14	9.9	2.9
I <sub>B</sub> = 4.6 A (400 W)	K	–	–	33.5	22.2	5.9
I <sub>B</sub> = 6.2 A (600 W)	K	–	–	–	42.4	10.3
I <sub>B</sub> = 7.0 A (750 W)	K	–	–	–	–	13.2
I <sub>B</sub> = 10.3 A (1000 W)	K	–	–	–	–	27.2
I <sub>B</sub> = 12.0 A (max. W)	K	–	–	–	–	36.6
Losses at I <sub>B</sub> = 0.54 A (35 W)	W	0.05	0.06	0.03	–	–
I <sub>B</sub> = 1.0 A (70 W)	W	0.20	0.21	0.11	0.10	–
I <sub>B</sub> = 1.2 A (100 W)	W	–	0.31	0.15	0.15	–
I <sub>B</sub> = 1.8 A (150 W)	W	–	0.72	0.35	0.35	–
I <sub>B</sub> = 3.0 A (250 W)	W	–	2.10	1.0	1.00	0.35
I <sub>B</sub> = 4.6 A (400 W)	W	–	–	2.5	2.40	0.82
I <sub>B</sub> = 6.2 A (600 W)	K	–	–	–	4.80	1.54
I <sub>B</sub> = 7.0 A (750 W)	K	–	–	–	–	2.02
I <sub>B</sub> = 10.3 A (1000 W)	K	–	–	–	–	4.68
I <sub>B</sub> = 12.0 A (max. W)	K	–	–	–	–	6.73
Max. cable capacitance	pF	20–300	20–100	20–100	20–100	20–200
Max. distance from lamp	m	4	1.5	1.5	1.5	3
Max. housing temperature	°C	105	105	105	105	105
Max. housing temperature, other casing sides	°C	105	105	105	105	105
Min. operating temperature	°C	-30	-30	-30	-30	-30
Weight	kg	0.128	0.133	0.130	0.215	0.336
Figure		1	1	1	2	3

① only for metal halide lamps and high pressure sodium lamps with an ignition voltage < 2.5 kVp

② only for HS 4–5 kVp



**Superimposed Pulse Ignitors**  
**ZRM 6-ES/C 400, ZRM 12-ES/C 400**



**Packaging:**

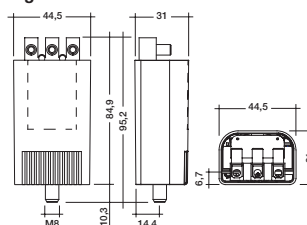
ZRM 6 ES/C:  
20 pcs./carton  
260 pcs./pallet low volume  
2,340 pcs./pallet high volume

ZRM 12 ES/C:  
20 pcs./carton  
200 pcs./pallet low volume  
1,800 pcs./pallet high volume

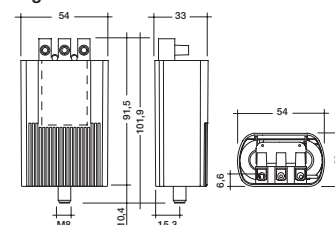
**Standards:**

EN 61347-2-1  
EN 60927

**Figure 1**



**Figure 2**



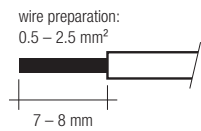
Type		ZRM 6-ES/C 400	ZRM 12-ES/C 400
Article number		87500094	87500095
Line voltage	V	360–466	342–440
Switch off/on voltage	V	310–360	310–342
Mains frequency	Hz	50–60	50–60
Ignition voltage	kV	4.0–5.0	4.0–5.0
Phase displacement of ignition impulses	°	60–90/240–270	60–90/240–270
Number of impulses per halfwave		3	3
Impulse width at $U_{zmin}$ -10 %	µs	>2	>2
Starting current (approx.)	mA	180	180
Max. permissible lamp current $I_B$	A	6	12.7
Lamp wattage HS	W	600–750	600–1000
Lamp wattage HI	W	–	1000–2000
Temperature rise at $I_B = 3.4$ A (600 W)	K	12.9	3.5
$I_B = 3.62$ A (600 W)	K	14.3	4.0
$I_B = 4.5$ A (750 W)	K	21.8	5.8
$I_B = 6.8$ A (1500 W)	K	–	12.7
$I_B = 10.3$ A (2000 W)	K	–	27.2
$I_B = 12.7$ A (max. W)	K	–	36.6
Losses at $I_B = 3.4$ A (600 W)	W	1.3	0.45
$I_B = 3.62$ A (600 W)	W	1.45	0.51
$I_B = 4.5$ A (750 W)	W	2.33	0.72
$I_B = 6.8$ A (1500 W)	W	–	1.86
$I_B = 10.3$ A (2000 W)	W	–	4.68
$I_B = 12.7$ A (max. W)	K	–	6.73
Max. cable capacitance	pF	20–200	20–200
Max. distance from lamp	m	3	3
Max. housing temperature	°C	105	105
Max. housing temperature, other casing sides	°C	105	105
Min. operating temperature	°C	-30	-30
Weight	kg	0.218	0.327
Figure		1	2

**Installation instructions**

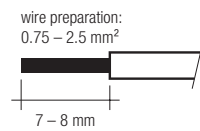
**Wiring type and cross section**

Stranded wire or solid wire with a cross section up to 2.5 mm<sup>2</sup> may be used for wiring. Strip 8 mm of insulation from the cables to ensure perfect operation of the screw terminals. The lamp cable has to be selected according to the ignition voltage.

**ZRM 2-4.5 ES/C:**



**ZRM 6-12 ES/C:**



When using two wires in one clamp-cage it is recommended to use the same wire types (solid or flexible) and same wire diameters. Above all, it must be made sure that the wires are fastened securely.

**Important advice**

Always switch off at the mains before changing the lamp. Warning – starting voltage up to 5.0 kV!  
Not suitable for use with lamps with internal ignitors.

**Wiring notes**

The ignitor can be used in luminaires for Protection Class 1 and Protection Class 2. The maximum allowable torque on the M8 nut is 4 Nm.

**ATTENTION!**

Terminals which are not fastened sufficient can cause charrings (maximum torque of terminal screws is 0.8 Nm). Wrong wiring can cause the destruction of the ignitor.

**Circuit diagramm ZRM ES/C**

