

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 pieces/box
1200 pieces/pallet

ZRM 6 ES/C:
20 pieces/box
520 pieces/pallet

ZRM 12 ES/C:
20 pieces/box
400 pieces/pallet

Standards:
EN 61347-2-1
EN 60927

Figure 1

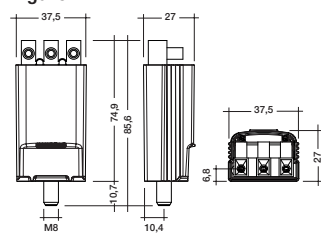


Figure 2

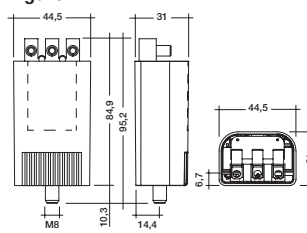
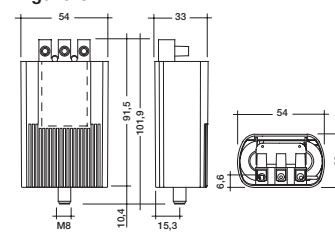


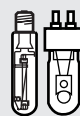
Figure 3



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_{zmin} -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_B	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 $I_B = 0.54$ A (35 W)	K	0.2	0.1	0.1	–	–
$I_B = 0.76$ A (50 W)	K	1.0	–	–	–	–
$I_B = 1.0$ A (70 W)	K	2.5	2.5	1	1.1	–
$I_B = 1.2$ A (100 W)	K	–	4	2	1.9	–
$I_B = 1.8$ A (150 W)	K	–	9.5	6.5	3.7	–
$I_B = 1.9$ A (150 W)	K	11.0	–	–	–	–
$I_B = 3.0$ A (250 W)	K	–	27	14	9.9	2.9
$I_B = 4.6$ A (400 W)	K	–	–	33.5	22.2	5.9
$I_B = 6.2$ A (600 W)	K	–	–	–	42.4	10.3
$I_B = 7.0$ A (750 W)	K	–	–	–	–	13.2
$I_B = 10.3$ A (1000 W)	K	–	–	–	–	27.2
$I_B = 12.0$ A (max. W)	K	–	–	–	–	36.6
Losses at						
$I_B = 0.54$ A (35 W)	W	0.05	0.06	0.03	–	–
$I_B = 1.0$ A (70 W)	W	0.20	0.21	0.11	0.10	–
$I_B = 1.2$ A (100 W)	W	–	0.31	0.15	0.15	–
$I_B = 1.8$ A (150 W)	W	–	0.72	0.35	0.35	–
$I_B = 3.0$ A (250 W)	W	–	2.10	1.0	1.00	0.35
$I_B = 4.6$ A (400 W)	W	–	–	2.5	2.40	0.82
$I_B = 6.2$ A (600 W)	K	–	–	–	4.80	1.54
$I_B = 7.0$ A (750 W)	K	–	–	–	–	2.02
$I_B = 10.3$ A (1000 W)	K	–	–	–	–	4.68
$I_B = 12.0$ 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	0.13	0.13	0.13	0.21	0.28
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



Ignitors

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



Packaging:

ZRM 6 ES/C:
20 pieces/box
520 pieces/pallet

ZRM 12 ES/C:
20 pieces/box
400 pieces/pallet

Standards:

EN 61347-2-1
EN 60927

Figure 1

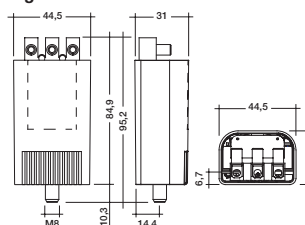
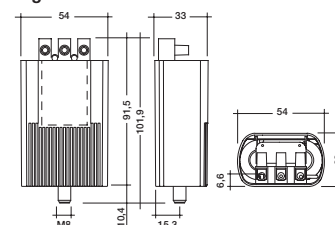


Figure 2



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	0.21	0.28
Figure		1	2

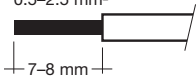
Installation instructions

Wiring type and cross section

Stranded wire or solid wire with a cross section up to 2.5 mm² 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.

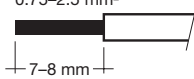
ZRM 2-4.5 ES/C:

wire preparation:
0.5-2.5 mm²



ZRM 6-12 ES/C:

wire preparation:
0.75-2.5 mm²



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

