Superimposed ignitor with switch-off function

ZRM 2-ES/CT, ZRM 2.5-ES/CT, ZRM 4.5-ES/CT, ZRM 6-ES/CT, ZRM 12-ES/CT

- digital superimposed ignitor with switch-off function
- Pulse/Pause ignition principle for:
  – shorter restart times (up to 30 %)
  – minimum downtime in ignition mode (up to 90 %)
- Prevention of the cycling effect due to three-start-counter
- auto reset function

Figure 1

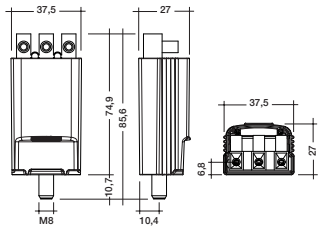


Figure 2

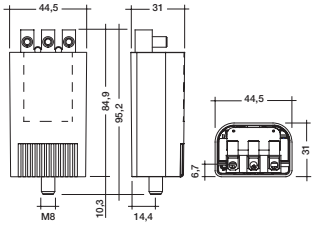
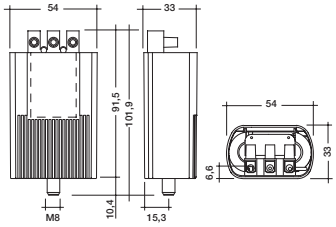


Figure 3



Standards:
EN 61347-2-1
EN 60927

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

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

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

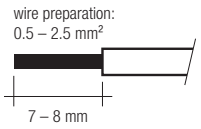
Type		ZRM 2-ES/CT	ZRM 2.5-ES/CT	ZRM 4.5-ES/CT	ZRM 6-ES/CT	ZRM 12-ES/CT
article number		87500085	87500086	87500087	87500088	87500089
rated voltage	V	220–240	220–240	220–240	220–240	220–240
permitted input voltage	V	203–264	203–264	203–264	203–264	203–264
mains frequency	Hz	50/60	50/60	50/60	50/60	50/60
ignition voltage	kVp	1.8–2.5	4.0–5.0	4.0–5.0	4.0–5.0	4.0–5.0
max. permissible lamp current IB	A	2.0	3.0	4.6	5.0	12.0
wattage HS	W	35–70 ①	70–250 ②	70–400 ②	70–400 ②	250–1000
wattage HI	W	70 ①/150	35–250	35–400	35–400	250–1000
temperature rise (approx.) at IB = 0.54 A (35 W)	K	0.2	0.1	0.1	–	–
IB = 0.76 A (50 W)	K	1.0	–	–	–	–
IB = 1.00 A (70 W)	K	2.5	2.5	1	1.1	–
IB = 1.20 A (100 W)	K	–	4	2	1.9	–
IB = 1.80 A (150 W)	K	–	9.5	6.5	3.7	–
IB = 1.90 A (150 W)	K	11.0	–	–	–	–
IB = 3.00 A (250 W)	K	–	27	14	9.9	2.9
IB = 4.60 A (400 W)	K	–	–	33.5	22.2	5.9
IB = 6.20 A (600 W)	K	–	–	–	42.4	10.3
IB = 7.00 A (750 W)	K	–	–	–	–	13.2
IB = 10.30 A (1000 W)	K	–	–	–	–	27.2
IB = 12.00 A (max. W)	K	–	–	–	–	36.6
losses (approx.) at IB = 0.54 A (35 W)	W	0.05	0.06	0.03	–	–
IB = 1.00 A (70 W)	W	0.2	0.21	0.11	0.11	–
IB = 1.20 A (100 W)	W	–	0.31	0.15	0.15	–
IB = 1.80 A (150 W)	W	0.5	0.72	0.35	0.35	–
IB = 3.00 A (250 W)	W	–	2.1	1	1	0.35
IB = 4.60 A (400 W)	W	–	–	2.5	2.5	0.82
IB = 6.20 A (600 W)	W	–	–	–	–	1.54
IB = 7.00 A (750 W)	W	–	–	–	–	2.02
IB = 10.30 A (1000 W)	W	–	–	–	–	4.68
IB = 12.00 A (max. W)	W	–	–	–	–	6.73
switch off/on voltage	V	185–203	185–203	185–203	185–203	185–203
type of ignition		pulse/pause	pulse/pause	pulse/pause	pulse/pause	pulse/pause
disconnection of the ignition voltage (timer)	min.	< 20	< 20	< 20	< 20	< 20
max. load capacitance	pF	20–300	20–100	20–100	20–100	20–200
max. distance from lamp (75 pF/m)	m	4	1.5	1.5	1.5	2.5
max. housing temperature tc	°C	105	105	105	105	105
max. housing temperature, other casing sides	°C	105	105	105	105	105
minimum operating temperature	°C	-30	-30	-30	-30	-30
weight	kg	0.130	0.134	0.134	0.220	0.324
reset function	s	< 1	< 1	< 1	< 1	< 1
figure		1	1	1	2	3

① for metal halide and high-pressure sodium lamps with ignition voltage < 2.5 kVp only
② for HS 4–5 kVp only

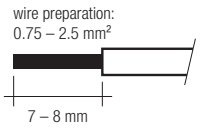
Installation instructions

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/CT:



ZRM 6–12 ES/CT:



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.

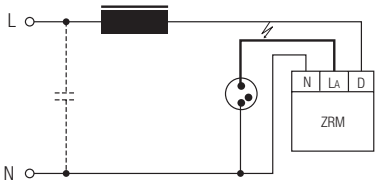
Important advice
Always switch off at the mains before changing the lamp. Warning – starting voltage up to 5.0 kV!
Not suitable for use with lamps with internal ignitors.

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.

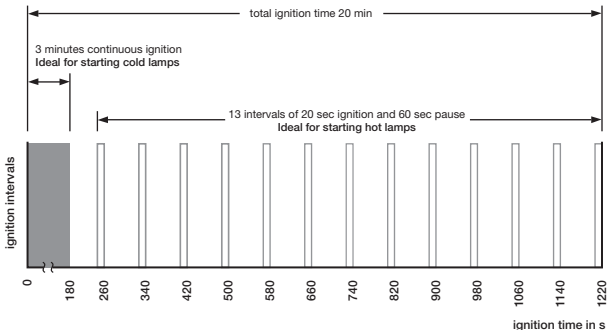
ATTENTION!
Terminals which are not fastened sufficient can cause charrings (maximum torque of terminal screws is 0.8 Nm). Wrong wiring can cause the destruction of the ignitor.

Safety shutdown
At the end of their useful life lamps often cycle on/off. The ZRM ES/CT ignitor recognises this condition and switches off the lamp after three complete on/off cycles unless the supply has been disconnected. Complete lamp shutdown enables a defective lamp to be easily identified. After the faulty lamp has been changed and the mains supply has been reset the ignitor will start the lamp. If there is no lamp in the circuit or if a defective lamp is connected to the ignitor, the ignitor will switch off after approx. 20 minutes.

Circuit diagramm ZRM ES/CT



Ignition intervals in Pulse/Pause operation mode



Auto reset function
After 60 minutes of fault-free operation the counter is automatically reset to zero. Another three starting attempts are possible.

Pulse/Pause-technology
After an ignition-period of 3 minutes – optimised for the starting of cold lamps – the integrated micro-controller switches into the Pulse/Pause-operation mode. The interval-time amounts 20 seconds ignition and 60 seconds break between the ignition-periods. The Pulse/Pause-operation mode shortens the restart times about 30 % and reduces the downtime to a minimum.

TRIDONIC