



**Combined electronic ballasts and emergency modules with plug in Selftest or DALI interface**

**Technical data:**

Ambient temperature range 5 °C to +50 °C  
 Maximum case temperature (tc) see tables.

Ingress Protection IP20  
 Vibration test IEC 60068-2-64 Fh  
 Bump test IEC 60068-2-29 Eb  
 Humidity IEC 60068-2-30  
 Flash Testing not recommended

High Voltage Insulation Testing (no flashover or breakdown must occur):  
 Up to 500 V DC between the phase and neutral conductors connected together and the earth. Batteries must be disconnected during storage of luminaires. It is also recommended that batteries are only connected after installation is completed.

**Restarting after lamp replacement:**

Note: Before servicing luminaires the mains supply should always be disconnected.

If faulty lamps are changed with the mains connected they will restart automatically provided an interval of 2 seconds is left after removal.

**Lamp starting (normal operation):**

Type of start: Pre-heat  
 Starting time: 2 seconds  
 Number of starts: circa 20,000

type	article number	
LED EM green	89899605	for non auto test
LED EM green UHB	89899756	for non auto test
LED EM bi-colour	89899720	for selftest or DALI
LED EM bi-colour UHB	89899753	for selftest or DALI

**Mechanical details:**

Case manufactured from polycarbonate.

LED charge indicator

- Bi-colour for self test and PRO DALI  
 green for standard test
- Mounting hole 6.5 mm dia
- Length of LED lead (Bezel supplied fitted to LED)  
 green: 750 mm  
 Bi colour: 1000 mm

Battery packs (Pack-NiCd)

- Polycarbonate case
- 1.0 m integral double insulated lead
- 1.0 mm<sup>2</sup> solid cable

To be connected to suitable strain relieved terminal block in luminaire or suitable polarised plug/socket for connection to luminaire.

Termination

9 mm semi-stripped insulation with protective tape.

Battery NiCd (high temperature)	type	number of cells	article number	L x W x H mm	weight g
Pack-NiCd 3D	Remote pack 4.0 Ah	3	89899672	216 x 70 x 35.5	570
Pack-NiCd 4D	Remote pack 4.0 Ah	4	89899673	216 x 70 x 35.5	700
Pack-NiCd 5D	Remote pack 4.0 Ah	5	89899674	216 x 70 x 35.5	840
Pack-NiCd 6D	Remote pack 4.0 Ah	6	89899675	216 x 70 x 35.5	980
Pack-NiCd 3C	Remote pack 1.5 Ah	3	89899676	216 x 70 x 35.5	320
Pack-NiCd 4C	Remote pack 1.5 Ah	4	89899677	216 x 70 x 35.5	370
Pack-NiCd 5C	Remote pack 1.5 Ah	5	89899678	216 x 70 x 35.5	420
Pack-NiCd 6C	Remote pack 1.5 Ah	6	89899679	216 x 70 x 35.5	470

Other batteries are available

See catalogue or separate datasheet for further information

**Normal operation:**

Rated mains supply voltage	220–240 V
Mains frequency	50/60 Hz
Earth leakage current	< 0.5 mA
Minimum lamp starting temperature	-15 °C
Lamp operating frequency	> 42 kHz
Ballast Lumen Factor (BLF)	see table
Light output variation over rated voltage range	± 2 %
Recharge period	24 hours
Nominal charge current NiCd D cell (3 h)	220 mA
Nominal charge current NiCd, NiMH Cs cells (1 h)	110 mA
Can be used with high brightness charge indicators (LEDs)	

**Emergency operation:**

Emergency light output factors (BLF)	see table
Battery design voltage	1.2 V per cell
Nominal discharge current (3 h, 1 h)	1.1 A
Minimum lamp starting temperature	5 °C

**Batteries:**

cell case temperature range (to ensure 4 years life)	0 °C → 55 °C
max. case temperature Pack-NiCd (at tc - point)	45 °C
Storage life (in temperate conditions)	4 years

**Miniature circuit breakers (MCBs):**

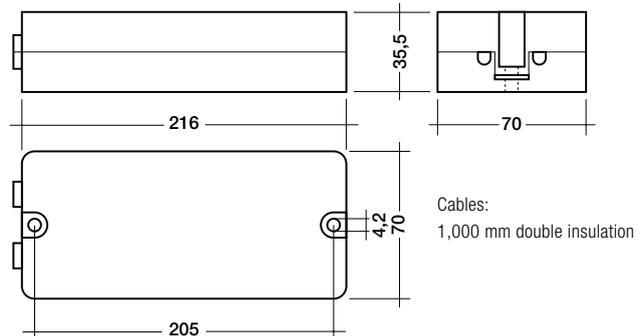
The maximum number of these electronic ballasts that may be used with miniature circuit breakers (MCBs). These quantities are based on single pole MCBs. For multi-pole MCBs derate by 20 %.

Type	Number of electronic ballasts					
	Type C MCB rating			Type B MCB rating		
	10 A	16 A	20 A	10 A	16 A	20 A
PC 1x18 ... TC COMBO-CONNECT	80	80	100	40	40	50
PC 2x18 ... TC COMBO-CONNECT	30	80	80	15	40	40
PC 2x26 ... TC COMBO-CONNECT	30	80	80	15	40	40
PC 1x26/32/42 ... TC COMBO-CONNECT	30	80	80	15	40	40
PC 2x32/42 ... TC COMBO-CONNECT	16	30	44	8	15	22
PC 1x28 ... DD COMBO-CONNECT	24	36	44	12	18	22
PC 1x28 ... HO DD COMBO-CONNECT	24	36	44	12	18	22
PC 1x38 ... DD COMBO-CONNECT	20	30	44	10	15	22

**Pack-NiCd:**



**Pack-NiCd:**



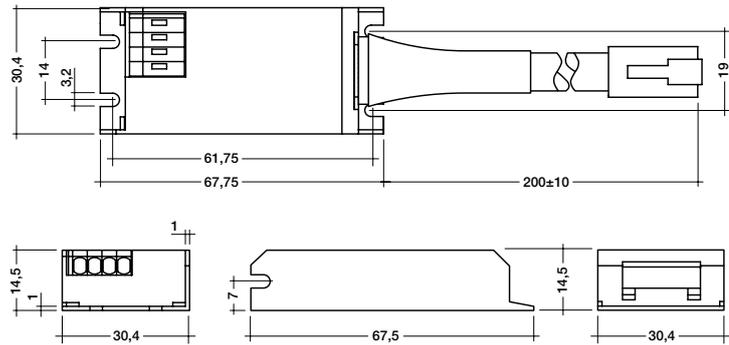
**EM CONNECT:**

EM CONNECT is available to convert the PC COMBO-CONNECT to either Selftest or PRO DALI operation by simply plugging in the unit and making the relevant connections for the LED and DALI bus to the EM CONNECT module.

**Technical data CONNECT-modules:**

connection	RJ45
lead length	200 mm
LED Connections	0.5–1.5 mm <sup>2</sup> solid conductor
DALI bus connections	0.5–1.5 mm <sup>2</sup> solid conductor
max tc temp	70 °C
selftest	
weekly	30 s
yearly	1 h or 3 h duration
DALI	to DALI standard

**EM CONNECT:**



**Selftest CONNECT-modules:**

duration (h)	type	article number
3	EM CONNECT 3ST	89899792
1	EM CONNECT 1ST	89899795

**DALI CONNECT-modules:**

duration (h)	type	article number
3	EM CONNECT 3PRO	89899794
1	EM CONNECT 1PRO	89899797

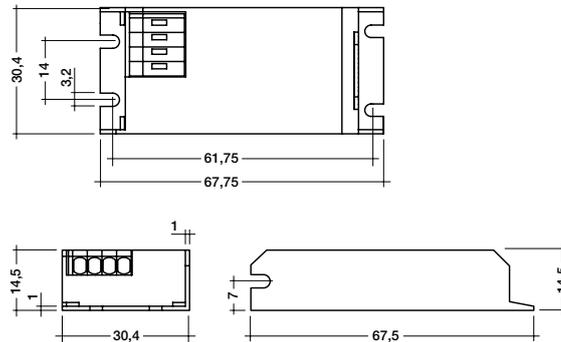
**EM FLT1 filter:**

When the PC COMBO-CONNECT and EM CONNECT is used in a remote application, where the lamp leads and LED indicator leads are routed together in close proximity, it is possible to have electrical interference picked up in the indicator leads. Under certain conditions this interference can cause a lock-up of the EM CONNECT micro-controller.

To overcome this problem in such applications it is necessary to fit the filter EM FLT1 between the indicator LED and the EM CONNECT unit. To be effective the filter must be connected close to the EM CONNECT module.

For further information please contact TridonicAtco.

**EM FLT1 filter:**



**Technical data:**

Push wire terminals 0.5–1.5 mm<sup>2</sup> solid conductor

product	article number
EM FLT1	89899942

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**Electrical connections:**

A functional earth can be connected for improved EMC performance.

Terminal block type:

Push wire only with release mechanism

Terminal block capacity

0.5 to 1.5 mm<sup>2</sup> solid conductor

Wire strip length:

8.5 to 9.5 mm

EM CONNECT to be connected via RJ45 socket

after plastic gateways have been removed.

Gateways must not be removed unless

EM CONNECT unit is installed.

Green LED indicator should be connected to the

PC CFL COMBO-CONNECT when being used in

manual test mode without the plug in EM CONNECT

module.

Bi-colour LED should be connected to the

EM CONNECT unit when this is used for Selftest

or Addressable test applications.

Keep all leads as short as possible,

maximum length 0.5 m

**Wiring instructions:**

The LED and test switch wiring should be routed

separately and kept as far away as possible from

the high frequency lamp leads to avoid coupling.

**Batteries:**

Batteries must be disconnected for servicing.

Facility must be provided in the luminaire.

It is recommended that battery leads are not cut

as this could result in a hazardous condition due

to short circuit batteries.

If shorter leads are required great care should

be taken that no shorting occurs.

Batteries should only be connected after

installation is complete.

**Service life:**

Service life at maximum case temperature

(see table) measured at designated tc point:

50,000 hours.

**CE marking:**

The combined units are CE marked for

compliance with the low voltage directive.

Certificates of compliance are available to

allow luminaires to be CE marked for

compliance with the EMC directive.

**Packing quantities:**

PC CFL COMBO-CONNECT:

Pack-NiCd:

10 pieces per carton

25 pieces/carton

LED:

EM CONNECT:

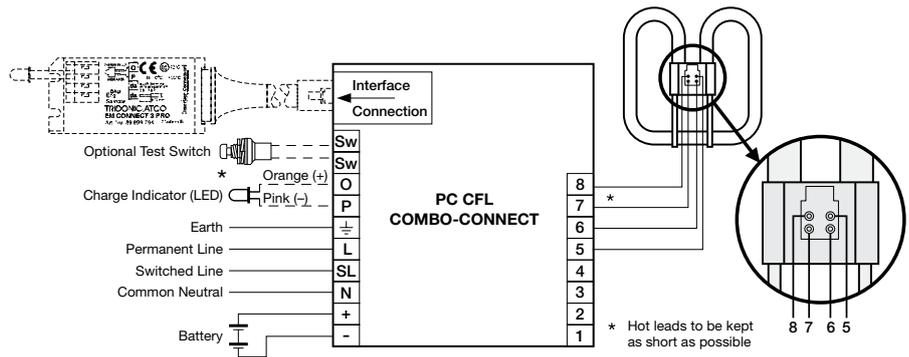
25 pieces/carton

25 pieces/bag

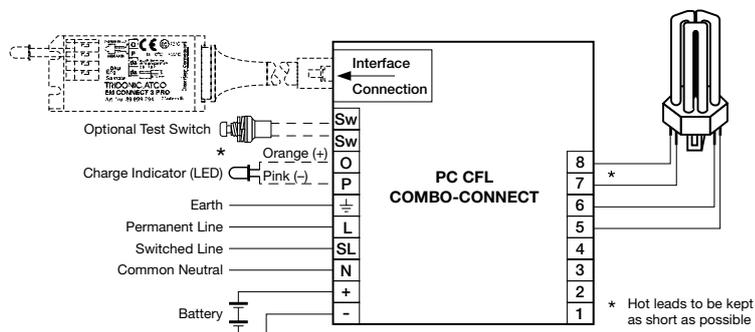
EM FLT1:

25 pieces/carton

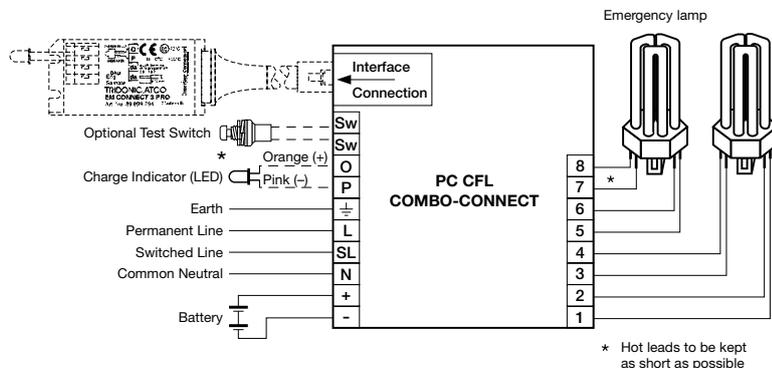
200 pieces/carton



Circuit diagram PC CFL COMBO-CONNECT with single TC-DD lamp

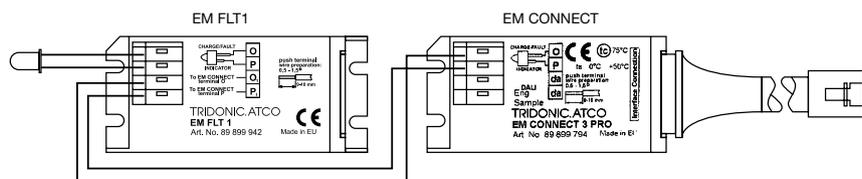


Circuit diagram PC CFL COMBO-CONNECT with single TC-DE/TE lamp



Circuit diagram PC CFL COMBO-CONNECT with twin TC-DE/TE lamps

\* Note: the connection for the LED at the PC CFL COMBO-CONNECT is not used in conjunction with the EM CONNECT module.



Circuit diagram EM CONNECT with EM FLT1 filter