
HF-P PL-T/C III

## Product Description

- Compact, lightweight high-frequency electronic gear for PL-T/C fluorescent lamps at 220-240 V 50/60 Hz

## Features and Benefits

- Up to 20% reduction in energy consumption compared to an electromagnetic gear
- Programmed start: flicker-free < 2 s, preheating the lamp electrodes which enables the lamps to be switched on and off without reducing useful life
- 50% longer lamp life compared to electromagnetic systems.
- Unit is protected against excessive mains voltages and incorrect connections
- Automatic stop circuit is activated within five seconds in case of lamp failure (safety stop); once the lamp has been replaced, the driver resets automatically

## Applications

Typical areas of application include:

- Department stores, shops, supermarkets, hospitals, hotels airports, railway stations, industrial premises
- Office buildings, for example: insurance companies, banks, government ministries
- Suitable for use with infrared remote control systems
- Suitable for emergency lighting luminaires acc. to IEC 60598-2-22, excluding high-risk task areas

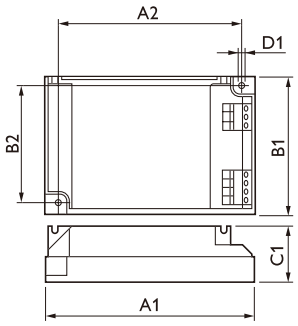
## Quality

Philips Quality assures optimum quality regarding:

- System supplier: As manufacturers of lamps and electronic control gear, Philips ensures that, from the earliest development stage, optimum lamp/gear performance is maintained
- European standards: Philips HF electronic gear complies with all relevant international rules and regulations

## Compliances and approvals

| | |
|---|---|
| RFI 9 kHz ... 30 MHz | EN 55015 |
| RFI 30 MHz ... 300 MHz | EN 55015 |
| Harmonics | EN 61000-3-2 |
| Immunity | EN 61547 |
| Safety | EN 61347-2-3 |
| Performance | EN 60929 |
| Vibration & bump tests | IEC 60068-2-6 Fc |
| | IEC 60068-2-29 Eb |
| Quality standard | ISO 9000-2000 |
| Environmental standard | ISO 14001 |
| Approval marks | ENEC |
| | VDE-EMV |
| CE marking | |
| Temperature declared | |
| thermally protected | IEC61347-1 |




| Type | A1 | A2 | B1 | B2 | C1 | D1 |
|---|---|---|---|---|---|---|
| HF-P 118 PL-T/C III | 103.8 | 93.5 | 67.8 | 57.5 | 30 | 4.2 |
| HF-P 218 PL-T/C III | 103.8 | 93.5 | 67.8 | 57.5 | 30 | 4.2 |
| HF-P 126 PL-T/C III | 103.8 | 93.5 | 67.8 | 57.5 | 30 | 4.2 |
| HF-P 226 PL-T/C III | 103.8 | 93.5 | 67.8 | 57.5 | 30 | 4.2 |

Dimensions in mm

## Inrush current

| Type | Max. quantity of gear per Miniature Circuit Breaker Type B16 A | Inrush current ½ value time at typical mains impedance |
|---|---|---|
| HF-P 118 PL-T/C III | 28 | 18A/250µS |
| HF-P 218 PL-T/C III | 28 | 18A/250µS |
| HF-P 126 PL-T/C III | 28 | 18A/250µS |
| HF-P 226 PL-T/C III | 28 | 18A/250µS |

## Mains current at 220/240 V

| Gear | Input current at 220 / 240 A |
|---|---|
| HF-P 118 PL-T/C III | 0.1 ... 0.07 |
| HF-P 218 PL-T/C III | 0.18 ... 0.14 |
| HF-P 126 PL-T/C III | 0.13 ... 0.1 |
| HF-P 226 PL-T/C III | 0.26 ... 0.22 |

## Electrical data

Technical data in relation to energy saving (all typical values at Vmains =230 V)

| Lamp Nominal* | Qty of Lamps (W) | Gear | System Power W | Lamp Power W | Gear Losses W | CELMA EEI | THD |
|---|---|---|---|---|---|---|---|
| PL-T/C 18W | 1 | HF-P 118 PL-T/C III | 17.8 | 16 | 1.8 | A2 | 15% |
| PL-T/C 18W | 2 | HF-P 218 PL-T/C III | 34.6 | 31.4 | 2.8 | A2 | 15% |
| PL-T/C 26W | 1 | HF-P 126 PL-T/C III | 22.2 | 19.8 | 2.4 | A2 | 15% |
| PL-T/C 26W | 2 | HF-P 226 PL-T/C III | 46.9 | 41.9 | 5 | A2 | 15% |

## Electrical data

| Lamp | Qty of Lamps | Gear | Power Factor | Ballast Lumen factor | Oper Freq kHz | Wiring diagram fig. |
|---|---|---|---|---|---|---|
| PL-T/C 18W | 1 | HF-P 118 PL-T/C III | 0.95 | 1.05 | 46 | 1 |
| PL-T/C 18W | 2 | HF-P 218 PL-T/C III | 0.95 | 1.05 | 46 | 2 |
| PL-T/C 26W | 1 | HF-P 126 PL-T/C III | 0.95 | 1.05 | 46 | 1 |
| PL-T/C 26W | 2 | HF-P 226 PL-T/C III | 0.95 | 1.05 | 46 | 2 |

### Connector type:

Connection wiring is greatly simplified through use of insert contacts with push buttons.

### Wire lengths:

For optimal performance, note that following wires need to be kept short;
For one lamp circuits keep wires to terminals 1 and 2 short;
For two lamp circuits keep wires to terminals 1,2 and 6,7 short.

### Wire cross-section:

| | |
|---|---|
| Mains | 0.5 mm - 1.5 $mm^2$ |
| Lamp(s) connector | 0.5 mm - 1.5 $mm^2$ |
| Strip length | 8.5 - 9.5 mm |

### Ordering and packing data

| Gear | Ordering Number | Weight in kg | Packing Qty in pcs | Dimensions bulk packing LxWxH in cm | EAN code | EOC |
|---|---|---|---|---|---|---|
| HF-P 118 PL-T/C III | 9137 006 48566 | 0.12 | 12 | 22.1x21.7x8.8 | 8727900 834161 | 8727900 834161 00 |
| HF-P 218 PL-T/C III | 9137 006 48666 | 0.13 | 12 | 22.1x21.7x8.8 | 8727900 834178 | 8727900 834178 00 |
| HF-P 126 PL-T/C III | 9137 006 48766 | 0.12 | 12 | 22.1x21.7x8.8 | 8727900 834222 | 8727900 834222 00 |
| HF-P 226 PL-T/C III | 9137 006 48866 | 0.13 | 12 | 22.1x21.7x8.8 | 8727900 834239 | 8727900 834239 00 |

### Electrical installation notes

| | |
|---|---|
| Mains operation | |
| Rated mains voltage | 220 - 240 V |
| With tolerances for performance +6%-8% | 202 - 254 V |
| With tolerances for safety +/- 10% | 198 - 264 V |
| Mains frequency | 50 Hz ... 60 Hz |
| DC voltage operation during emergency back-up | 176 - 254 V DC |
| DC voltage for starting lamps | 198 - 254 V DC |
| Earth leakage current | < 0.5 mA per gear |
| Total Harmonic Distortion (THD) | < 15% |
| Ignition time | Typically < 2s |
| Constant light operation | In case of AC mains voltage fluctuations, within 202-254 V, the luminous flux changes by a maximum of ± 10% |
| Overvoltage protection | 48 hrs at 320 V AC<br>2 hrs at 350 V |
| Cable Capacity | Max 100 pF lp- lp between lamp wires<br>Max 100 pF lp-gnd between lamp wires and earth |
| Dual fixture: master-slave | Not advised |
| Automatic restart after lamp replacement | Yes |
| Insulation resistance test | 500 V DC from Line/Neutral to Earth (not between Line and Neutral) Note: Ensure that the neutral is reconnected again after above mentioned test is carried out and before the installation is put in operation |
| Lamp current crest factor | < 1.7 |

### Inrush current

Conversion table for max. quantities of gears on other types of Miniature Circuit Breaker.

| MCB type | Rating | Relative quantity of gears |
|---|---|---|
| B | 16 A | 100% (see table above) |
| B | 10 A | 63% |
| C | 16 A | 170% |
| C | 10 A | 104% |
| L, I | 16 A | 108% |
| L, I | 10 A | 65% |
| G, U, II | 16 A | 212% |
| G, U, II | 10 A | 127% |
| K, III | 16 A | 254% |
| K, III | 10 A | 154% |

Notes:

1. Data is based on a mains supply with an impedance of 400 mΩ (equal to 15 m cable of 2.5 $mm^2$ and another 20 m to the middle of the power distribution), under worst case conditions. With an impedance of 800 mΩ the number of gears can be increased by 10%.
2. Measurements will be verified in real installations; therefore data are subject to change.
3. In some cases the maximum number of gears is not determined by the MCB but by the maximum electrical load of the lighting installation.
4. Note that the maximum number of gears is given when these are all switched on the same moment, i.e. by a wall switch.
5. Measurements were carried out on single-pole MCB's. For multipole MCB's it is advisable to reduce the number of gears by 20%.
6. The maximum number of gears which can be connected to one Residual Current Detector of 30 mA is 30.
7. The average cable capacity Lp-Gnd is 100 pF per meter for standard installation wire Diameter 1.0 mm (bundled lamp wiring situation). For more information regarding this subject consult the Philips Application guide to fluorescent lamp control gear.

Lifetime of a gear depends on the temperature of the gear.
This means there is a relation between the Tc point on the gear and its lifetime. For more information regarding this subject consult the Philips Application guide to fluorescent lamp control gear.

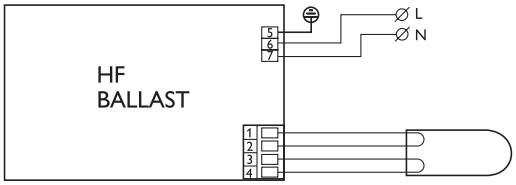
| | |
|---|---|
| Hum and noise level | inaudible (< 30 dBa at 1 meter) |
| Outdoor use | Gear IP=20, in outdoor applications the luminaires has to be sufficient IP rated. Permitted humidity is tested according to IEC 61347-1 par 11. Note that no moisture or condensation may enter the gear. |
| Earthing | Earthing of the gear in a luminaires is necessary for EMC (Electromagnetic Compatibility) |

The gears that are thermally protected for safety and EMC, use a protective method of another type providing equivalent thermal protection.

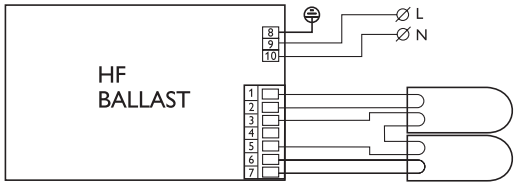
## Mechanical installation notes

| | |
|---|---|
| Temperatures | |
| Temperature range to ignite lamp with ignition aid | -15°C to +50°C |
| Storage Temperature | -25°C to +80°C |
| Lifetime (10% point) | 50,000 Hrs |
| Max $T_{case}$ | 75°C |

## Wiring diagram




HF- P PL-T/C 1 Lamp (fig.1)




HF- P PL-T/C 2 Lamp (fig.2)