

PTC HEATER KIT

ELECTRIC FUEL WARMER

The safest way,
to keep fuel flowing -
even at extreme
temperatures



- Prevents the plugging of the Fuel Filter by wax
- Self-regulating - no thermostat needed
- Easy to retrofit on any engine
- Long lifetime, no maintenance required

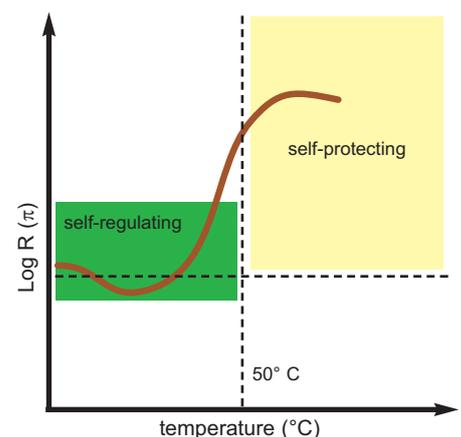
When winter is approaching and, depending on the region, fuel companies start to supply so-called winter or 'polar diesel'. In case the storage or vehicle tank still contains regular diesel, or winter or polar diesel is not available, the fuel system needs protection, particularly the fuel filters against fuel wax.

When temperatures fall below 0°C, the paraffin waxes contained in fuel begin to solidify. These wax crystals plug the filter. When temperatures drop to -7°C the filtration threshold is reached.

At -9°C the fuel begins to congeal. At 0°C and less, filtration problems are likely to be experienced; their severity depends on the configuration of the fuel system. In cold weather, paraffin wax can plug the filter within a few minutes. On a large engine, a heater using the coolant would not be efficient: wax residues which exist in significant quantities in a large tank, would plug the filter before the coolant is warm. So, the fuel must be heated at the tank outlet as soon as the engine is started up.

Fleetguard's solution is compact, simple and efficient: The PTC fuel heater, an electric, self-regulation and self-protecting heater. The PTC fuel heater contains four ceramic discs, which act as heating

elements, and their power varies according to the temperature. Thanks to the unique PTC Resistance-Temperature characteristic - see curve below - it requires the minimum current and does not need any additional thermostat for controlling its heating function.



The initial short-term current draw will be approx. 15 Amps and will reduce to 1.5 Amps during regular operation. There is no risk of overheating as the electrical resistance will increase dramatically (ratio of 1 to 10,000) above the designed maximum temperature of 50°C and no current will be drawn.

For more information:

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The PTC product range

Sandwich kits

Sandwich kits contain all mechanical components required for installing a PTC heater easily between the existing filter head and fuel filter.

For integration into the electrical system Fleetguard also offers separately a 24 VDC wiring kit with part number 3321851S. Different kits are offered for different filter threads.



Sandwich Kit - Product details

- PTC 300 Watt – 24 VDC (3927023)
- Threaded insert
- O-ring gasket
- PTC connector cable
- Heater adapter 3934304S
- 5 ml Loctite 648
- Square gasket

Part-No.	3934467	3934572	3934573
Replaces	3321732S & 3917480	3923883	3898399
Applications	Volvo, Scania, M.A.N., Deutz, DAF, RVI	Cummins (B+C engines)	Cummins
Filter Thread	M16 x 1.5	13/16"-18UNS-2B	1"-14 UNS- 2B

Combined fuel heating and Pre-filtration solutions

Besides having to protect fuel systems versus fuel waxing, which causes premature filter plugging, we are often confronted with excessive wear of injection system components (e.g. nozzles or injectors) due to the presence of water in the fuel. Water predominately enters the fuel by condensation of humid air in the fuel tank. Therefore it is recommended to install a Fleetguard fuel/water separator as pre-filter. The Fleetguard fuel/water separators are capable of removing at least 95 % of free AND emulsified water.

Note: Filters for Part-No. 3934299 need to be ordered separately. According to your preference the following Fuel/Water Separator filters can be installed:

25 Micron filtration: FS1212 or FS1242B
10 Micron filtration:
 FS1000, FS1009 or FS1015B

Part-No. 3934299

Pre-Filtration/ Fuel Heater Kit 24 VDC (replaces 3321659S)

- Filter head 3892646S (M14 x 1.5 port size)
- 24 VDC – 300 W PTC heater 3927023
- Gasket
- Threaded insert
- PTC connection cable 3934304 S
- 24VDC wiring kit 3321851S



FS 1242K

- FS1242B (B= clear bowl with drain valve)
- Filter head 3833198S (7/8"-14 port size)
- WIF sensor
- WIF indicator 12 VDC
- wiring kit 12 VDC
- PTC heater
- threaded insert 3835118S
- Loctite 242



Accessories

Following related products are available. Please order separately.

Part-No. 3321850S - Wiring kit

12VDC relay, 12VDC switch, fuse 30 Amp, cable connectors and cable ties

Part-No. 3321851S - - Wiring kit

24VDC relay, 24VDC switch, fuse 45 Amp, cable connectors and cable ties



Part-No. 3927023 - PTC Heater

- Heating power: 300 Watt
- self-regulating (no thermostat needed)
- self-protecting
- for 24VDC applications only
- TÜV approved electrical connection
- separate cable connection: 3934304S

