

# Kulthorn, compressor, Kulthorn compressor, c- qn76l6f, c-qn76l6f-l, 1/10 Hp, 1Ph, Serie C-q, R134a, 76 watt, Low back pressure, 200-220V/50hz, 220v/60hz, Compressor modifier

written by Lilianne | 7 January 2021

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## Compressor Motor Protectors

Each compressor incorporates a motor protection device or system. Generally, the larger the compressor, the more sophisticated the motor protector.

It is essential that an electric motor is protected against conditions that could otherwise result in damage to the motor or to the electrical supply system. For this reason, every Kulthorn compressor is supplied with a motor protector, sometimes referred to as an overload. The more expensive the compressor, the greater is the economic justification for specifying a motor protector that has the ability to protect over a wider range of conditions.

### 1. External Motor Protectors

A smaller compressor (such as an AZ, AE or WJ) is fitted

with an external motor

protector. Most commonly, this is a compact, cylindrical device that contains a snapaction bimetallic disc. The protector is mounted in contact with the surface of the compressor housing, inside the terminal guard.

The compressor current passes through the bimetallic disc. The resistance of this disc

causes the disc temperature to increase as the motor current increases. There is usually

a small heater, located under the disc and connected in series with the disc itself. This

heater further raises the temperature of the disc. There is also the impact of the

compressor shell temperature, and a hot compressor will further increase the disc

temperature. The temperature of the disc is thus influenced by the combined effects of –

- the compressor motor current
- the compressor shell temperature

When the bimetallic disc reaches a predetermined temperature (often either 105°C or

120°C) the disc will snap open, and power supply to the compressor will be interrupted.

The compressor will cool, and at a reduced disc temperature the protector will reset

and the compressor will restart, or attempt to restart.

If the abnormal condition that

caused the protector to trip in the first place still exists, the compressor is likely to continue

to cycle on the overload until that condition is corrected.

There are two situations where a motor protector is expected to operate.

2. When the compressor is running under extreme conditions.
3. When the compressor is in a locked rotor condition. This is a situation where the compressor cannot start because the voltage is too low,

the system pressures are  
outside the range for which the compressor is approved,  
there is internal damage to  
the compressor, or there is some other reason why the  
compressor is incapable of  
starting



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