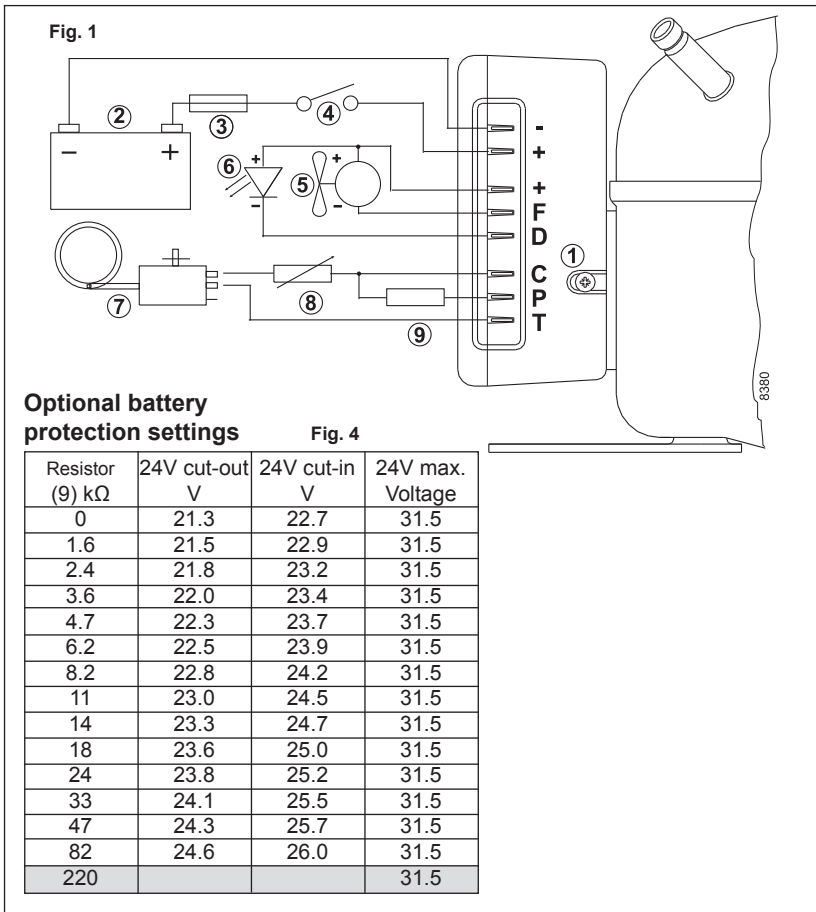


# Instructions

Electronic Unit for BD35/50F Compressors,  
101N0260, 24V DC



## Wire dimensions

Size AWG Gauge	Cross section mm <sup>2</sup>	Max length* 24V DC operation	
		ft.	m
12	2.5	16	5
12	4	26	8
10	6	39	12
8	10	66	20

Fig. 2 \*Length between battery and electronic unit

## Standard battery protection settings

24V cut-out V	24V cut-in V
22.8	24.2

Fig. 3

## Compressor speed

Electronic unit	Resistor (8) Ω	Motor speed rpm	Contr.circ. current mA
101N0260	0	2,000	5
	277	2,500	4
	692	3,000	3
	1523	3,500	2

Fig. 5

## ENGLISH

The electronic unit can be used in 24V power supply systems. Maximum voltage is 31.5V for a 24V power supply system. Max. ambient temperature is 55°C. The electronic unit has a built-in thermal protection which is actuated and stops compressor operation if the electronic unit temperature gets too high.

### Installation (Fig. 1)

Connect the terminal plug from the electronic unit to the compressor terminal. Mount the electronic unit on the compressor by snapping the cover over the screw head (1).

### Power supply (Fig. 1)

The electronic unit must always be connected directly to the battery poles (2). Connect the plus to + and the minus to -, otherwise the electronic unit will not work. The electronic unit is protected against reverse battery connection.

For protection of the installation, a fuse (3) must be mounted in the + cable as close to the battery as possible. A 7.5A fuse for 24V circuits is recommended.

If a main switch (4) is used, it should be rated to a current of min. 20A.

The wire dimensions in Fig. 2 must be observed.

Avoid extra junctions in the power supply system to prevent voltage drop from affecting the battery protection setting.

### Battery protection (Fig. 1)

The compressor stops and restarts again according to the designated voltage limits measured on the + and - terminals of the electronic unit.

The standard settings for 24V power supply systems appear from Fig. 3.

Other settings (Fig. 4) are optional if a connection which includes a resistor (9) is established between terminals C and P.

### Thermostat (Fig. 1)

The thermostat (7) is connected between the terminals C and T. Without any resistor in the control circuit, the compressor will run with a fixed speed of 2,000 rpm when the thermostat is switched on.

Other fixed compressor speeds in the range between 2,000 and 3,500 rpm can be obtained when a resistor (8) is installed to adjust the current (mA) of the control circuit. Resistor values for various motor speeds appear from Fig. 5.

### Fan (optional, Fig. 1)

A fan (5) can be connected between the terminals + and F. Connect the plus to + and the minus to F. Since the output voltage between the terminals + and F is always regulated to 12V,

**a 12V fan must be used for 24V power supply systems.**

The fan output can supply a continuous current of 0.5A<sub>avg</sub>. A higher current draw is allowed for 2 seconds during start.

### LED (optional, Fig. 1)

A 10mA light emitting diode (LED) (6) can be connected between the terminals + and D.

In case the electronic unit records an operational error, the diode will flash a number of times. The number of flashes depends on what kind of operational error was recorded. Each flash will last ¼ second. After the actual number of flashes there will be a delay with no flashes, so that the sequence for each error recording is repeated every 4 seconds.

Number of flashes	Error type
5	<b>Thermal cut-out of electronic unit</b> (If the refrigeration system has been too heavily loaded, or if the ambient temperature is high, the electronic unit will run too hot).
4	<b>Minimum motor speed error</b> (If the refrigeration system is too heavily loaded, the motor cannot maintain minimum speed 1,850 rpm).
3	<b>Motor start error</b> (The rotor is blocked or the differential pressure in the refrigeration system is too high (>5 bar)).
2	<b>Fan over-current cut-out</b> (The fan loads the electronic unit with more than 1A <sub>peak</sub> ).
1	<b>Battery protection cut-out</b> (The voltage is outside the cut-out setting).