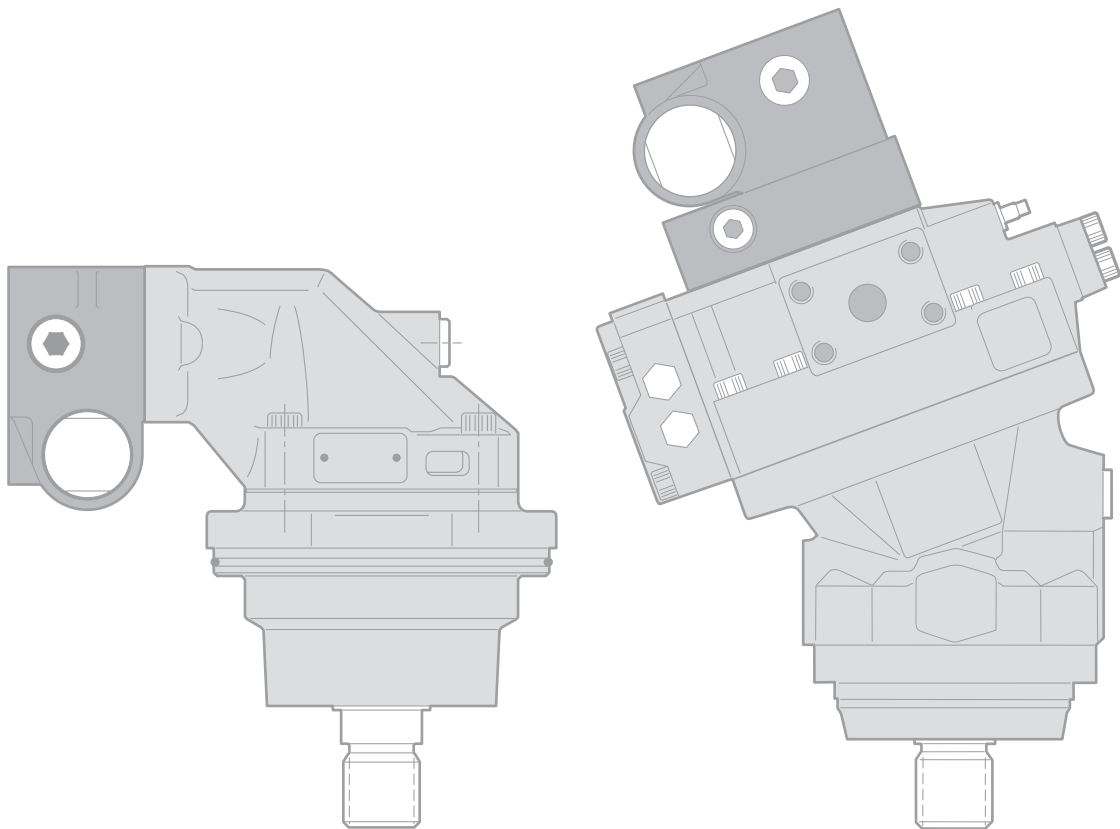




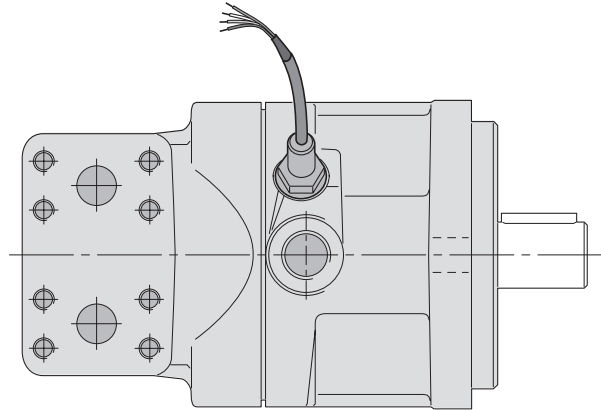
# **Mobile motor/pump accessories**

*Catalogue HY17- 8258/UK  
November 2004*



**General information**

- A speed sensor kit is available for series F11-14 and F11-19, for series F12 and the I and S versions of series V12 and V14.
- The sensor consists of a ferrostat differential (Hall-effect) speed sensor and a seal nut. The sensor installs in a threaded hole in the F12 or V12 bearing housing, and in the F11 barrel housing.
- The speed sensor is directed towards the teeth of the F12 ring gear or, on the V12/V14, towards depressions in the shaft head, on F11 towards the piston.
- The sensor output is a square wave signal within a frequency range of 5 Hz to 20 kHz.
- The sensor withstands high as well as low temperatures and is highly moisture protected (IP68).



*Speed sensor (installed on an F12-60).*

Frame size	No. of pulses/rev	Min rpm
F11-14, -19 (I and S)	5	~60
F12 (all sizes)	35	~9
V12/V14 (I and S)	36	~8

*Pulses per shaft rev and min rpm.*

**Technical data**

Power supply	12-32 VDC (protected against false polarity)
Current consumption	Max 20 mA (without load)
Signal output	Square wave voltage (short circuit proof ; protected against false polarity)
Frequency	Min 5 Hz max 20 kHz
Insulation	Housing and electronics galvanically separated
Operating temperature	-40 to +125 °C [-40 to +255 °F]
Sensor head pressure	Max 25 bar [360 psi]
Protection class	IP68 (DIN 40050)
Weight (incl. cable)	0.15 kg [0.33 lb]
Sensing distance	0.2 to 2.5 mm; 1.0 recom. [0.01 to 0.10 in; 0.04 recom.]
Transistor	NPN

**Cable**

Material	Teflon insulation
Length	5 m [16.4 ft]
No. of wires	3 (plus screen; white wire)
Wire area	4 x 0.24 mm <sup>2</sup> [AWG 24]
Screen	Stranded metal net (insulated from housing)

**NOTE:** Screen must be connected to 0 V (zero volt) power supply. The additional, brown wire is not used, it is cut off and sealed

Bending radius Min 60 mm [2.5 in]

**Connection**

Sensor wires are susceptible to radiated noise. Therefore, the following should be noted:

- Uninterrupted screened 3 wire cable must be used and the screen only connected to the appropriate instrument screen input terminal or 0V. Connections to power earth are not advisable.
- The sensor wires must be installed as far away as possible from electrical machines and must not run in parallel with power cables in the vicinity.

The maximum cable length that can be utilized is dependent on sensor voltage, how the cable is installed, and cable capacitance and inductance.

It is, however, always advantageous to keep the distance as short as possible.

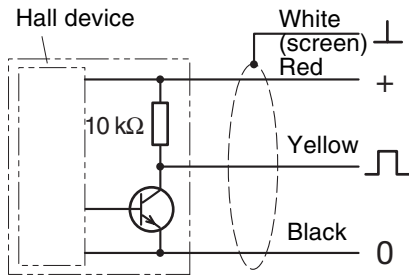
The sensor cable supplied can be lengthened via a terminal box located in an IP20 protected connection area (per DIN 40050).

Contact Parker Hannifin, Mobile Controls Division for recommendations.

**Installation information**

As the sensor has a built-in differential Hall-effect device, the sensor housing must be aligned according to the drawing below. If it is not, the sensor may not function properly and noise immunity decreases.

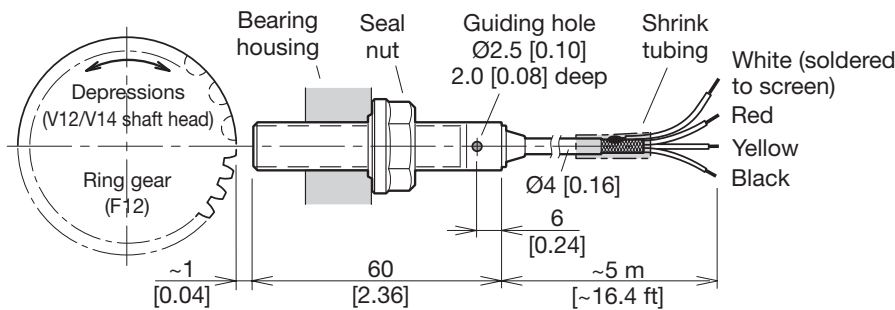
The sensor is non-sensitive to oil and the stain-less steel housing stands arduous environment conditions.



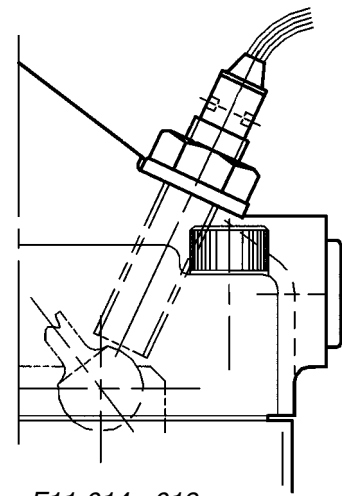
Speed sensor schematic.

**Installation procedure**

- Install the sensor in the threaded hole (M12x1) of the **F12/V12/V14** bearing housing; turn the sensor until its head just touches the ring gear teeth (F12) or the shaft head (V12/V14); refer to the installation drawing below.
- On **F11** the **pistons positions must be known** before mounting the sensor. Install the sensor in the threaded hole (M12\*1) of the F11 barrel housing; turn the sensor until its head just touches the piston.
- When mounting the sensor in the threaded hole be sure that you also rotate the cable so the cable not get twisted.
- Back off the sensor one turn (counter clockw.).
- If required, back it off further until the sensor guiding hole centerline is parallel to the F12/V12/V14 shaft centerline (either as shown or 180° opposite).
- Tighten the seal nut; max 12 Nm (100 lb in). Be sure that the position of the guiding hole centerline still is correct.
- Connect the electrical wires as shown in the schematic. Please note the instructions on page 1 regarding screening.
- Brown cable shall not be used.



Speed sensor installation, F11, V12, V14.



F11-014, -019.

**Ordering information**

- F11 - 014 - H B - C V - K - 000 - 000 - **S**
- F12 - 080 - M F - I H - K - 000 - L01 - **S**
- V12 - 080 - M S - S H - S - 000 - D - **S** - ...
- V14 - 110 - I H D - E P H 3 N - N 000 - **S** - ...
- S** - Speed sensor
- P** - Prepared for speed sensor

- Separate speed sensor:  
Order kit P/N 379 9424 (sensor and seal nut).

**NOTE:** - The speed sensor is not installed in the motor during transportation.