GENERAL INFORMATION

A speed sensor kit is available for series F11-12, F11-14 and F11-19, for series F12 (30-125) and the I and S versions of series V12 and V14.
The sensor consists of a ferrostat differential (Dual Channel) 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 2 phase shifted square wave signal within a frequency range of 0 Hz to 15 kHz.The sensor delects both speed and direction of rotation.
The sensor withstands high as well as low temperatures and is highly moisture protected (IP68).

Frame size	No. of pulses/rev
F11-12, 14, -19 (I and S)	5
F12 (30-125)	35
V12/V14 (I and S)	36
T12/V12-060 C	9

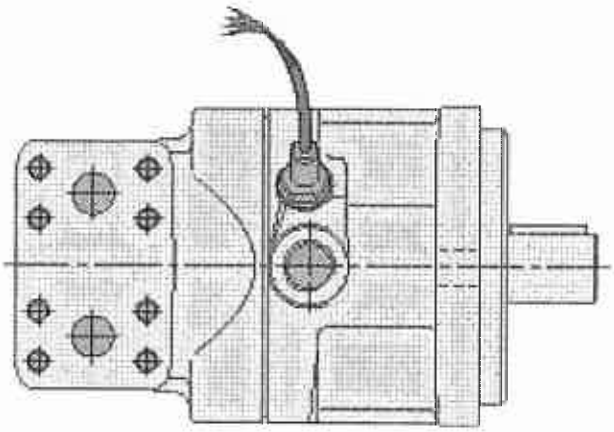
Pulses per shaft rev

TECHNICAL DATA

Power supply11V to 32V **protected against reverse polarity**
Current consumption (without load) Max 20 mA
Signal output- 2 phase shifted square wave signals:
- Open Collector outputs with 10Kohm pull-up, Imax = -20mA

The outputs are short circuit proof and protected against reverse polarity

Frequency	Min 0 Hz max 15 kHz
Insulation	Housing and electronics galvanically separated (500V/50Hz/1 min)
Operating	-40 to +125 °C
temperature	[-40 to +255 °F]
Sensor head	Max 25 bar
pressure	[360 psi]
Protection	P68
class	(DIN 40050)
Weight	0.15 kg
(incl. cable)	[0.33 lb]
Sensing	0.1 to 2.0 mm; 1.0 recom.
distance	[0.004 to 0.08 in; 0.04 recom.]
Transistor	NPN
Amplifier variant	Variant: .02 SHW Output 1: Speed Output 2: Speed Output type: Open Col. Power supply: 11-32V



Speed sensor (installed on an F12-60).

CABLE

Material	PUR casting
Length	2,5 m
No. of wires	4 (plus screen; transparent)
	Wire area 4 x 0.34 mm²
Screen	Stranded metal net (insulated from housing)
NOTE:	Screen must be connected to 0 V (zero volt) power supply.
	Bending radius Min 50 mm

CONNECTION

Sensor wires are susceptible to radiated noise.

Therefore, the following should be noted:

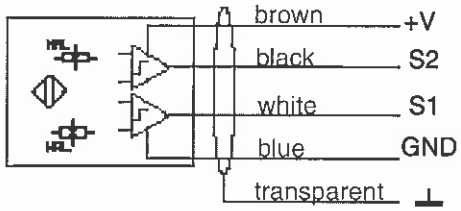
- Uninterrupted screened 4 wire cable must be used and the screen only connected to the appropriate instrument screen input terminal or 0V. Connections to power earth are not advi sable.
- The sensor wires must be installed as far away as possible from electrical machines and must not run in parallel with power cables in the vici nity.

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).

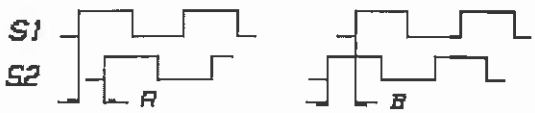
Contact Parker Hannifin, Pump and Motor Division for recommendations.

Connections:



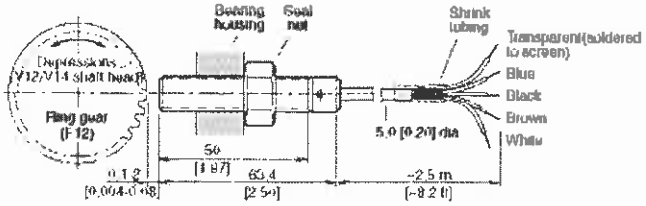
Pulse diagram:

directions of rotation directions of rotation



INSTALLATION INFORMATION

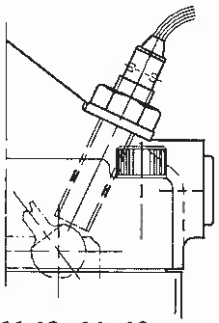
As the sensor has a built-in differential Hall-effect device, the sensor housing must be aligned according to the drawing of the Speed Sensor Installation picture. If it is not, the sensor may not function properly and noise immunity decreases. The sensor is non-sensitive to oil and the stainless steel housing stands arduous environment conditions.



Speed sensor installation, F12, V12, V14.

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 above.
- 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 tuches 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 cen terline still is correct.
- Connect the electrical wires as shown in the schematic. Please note the instructions on page 1 regarding screening.
- If you only use one signal, we recommend you to use S2 cable. Cut S1cable and isolate.



F11-12, -14, -19.

ORDERING INFORMATION

- F11 - 014 - H B - C V - K - 000 - 000 - **P**
- F12 - 080 - M F - I V - K - 000 - L01 - **P**
- V12 - 080 - MS - SV - S - 000 - D - **P** - ...
- V14 - 110 - IVD - EPH3N - N000 - **P** - ...

P - Prepared for speed sensor
The Hydraulic motors or pumps are ordered "P" prepared for speed sensor

- The speed sensor is ordered separately:
  Order kit P/N 378 5190 (sensor and seal nut).

NOTE: The speed sensor is not installed in the motor during tranportation.

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