Description

- TVPC temperature speed controller is consist of two main assemble TVP temperature probe, âTVPS magnetic sensor, the TVP temperature probe is mounted on fluid coupling.TVPC temperature speed controller can be in place of thermal trip switch, and offered as a standard accessory on fluid coupling. it will provide protection against overheating,
- if the coupling is overload, overheating, low speed (speed is lower than pre-set speed value), are used in place of standard fusible fill plugs, and thermal trip switch. If an overload jam, stall or fluid leak occurs, the fluid coupling slip will increase, Continuous high slip will cause the fluid temperature to rise, at the designated temperature speed probe will change the magnetic specification, TVPS magnetic sensor will test overheating, sound an alarm , light an alarm or cut out the drive motor.During normal operation, the TVP temperature speed probe is magnetic material, TVPS magnetic sensor can monitor the rotate speed of fluid coupling. When overload or other situation the fluid temperature is overheat (excessive the pre-setting Value Such as 125), the magnetic sensor will give alarm signal , cutout the drive motor.Also the magnetic sensor will give alarm signal when the rotate speed if fluid coupling is down the pre-setting speed value.
- A TVPC temperature speed controller in the motor starter control circuit of controlled torque coupling is recommended for protection of connected equipment and coupling where damaging thermal buildup could develop.

  TVPC temperature speed controller is adjustable at the control box. It is set at a required speed and continually compares the actual speed of the driven shaft with the set cutout speed.During overload, the coupling slips at a predetermined speed.
- When the driven shaft speed drops below the cutout switch speed setting, it opens the motor circuit and the drag load stops the motor shaft.When the under speed cut-out switch is wired for automatic reset, the drive is immediately ready for service (after overload is removed) without resetting the circuit at any point.
- To restart the drive, just press either the main or remote control start button. The motor will not maintain normal operation if the overload has not been removed because the motor contractor circuit will reopen as soon as the start button is released.The customer may incorporate a warning light or an alarm to the circuit to signal the operator of an overload or shutdown condition.

Caution : the effect of open keyways on coupling or clutch balance should always be considered.
Mounting Diagram of TVPC temperature speed controller

Principle :

- While the coupling is rotating and below the response temperature of 125âï¿½ï¿½, each time the pick-up is passed the transmitter emits an impulse signal which is transmitted to the evaluating instrument.
- The pulse number is compared in the evaluating instrument with the required value set on the front plate and, when the pulse number is fallen below, causes the output relay to cut out.
- If as a result of an operating fault the response temperature (oil temperature) exceeds the actuating temperature of 125, the transmitter stops emitting pulses and the output relay of the evaluating instrument drops out.

- The output relay can trigger a fault signal or trip the drive cut-out. The evaluating instrument has a time delay which prevents a fault signal during the drive starting phase. If the monitoring system has cut out, the operating fault must first be rectified. The transmitter must not be exchanged.
- After it has cooled down to below the actuating temperature, the coupling is once more ready to operate. Depending on the starting heating to be expected (moment of inertia of the drive unit), however, the drive should be switched on only at coupling temperatures under 90.

Note : If the coupling is started up again without cooling down, as would be possible because of the time delay, the coupling may further heat up (starting heating), and there is a risk that the fusible safety plug will operate.

Application

- The controller of temperature and speed monitors the required operating condition of the fluid coupling contactless and requires no maintenance. Spraying and loss of operating fluid if the coupling overheats and the pollution of the environment associated with it can be avoided.
- In the case of internal-gear drives the output speed (minimum value), in addition to the temperature, can be monitored.
- In this case the controller of temperature and speed cuts out immediately the output speed falls below its required value or the drive stops even before the coupling overheats. The controller of temperature and speed can be used on coupling and upward at peripheral speeds > 15 m/s.
- The transmitter is fitted to the coupling in place of the screw plug fusible plug

Fitting

- The controler of temperature and speed comprises the transmitter(probe of temperature and speed), the pick-up (magnetic sensor) and the evaluating instrument. The transmitter is fitted to the coupling housing in place of the screw plug (fusible plug or thermal trip plug).
- Also the fusible safety plug (160) remains in the coupling as an emergency safety device. The pick-up is positioned flush with the turning circle of the transmitter, so that there is a gap of 2 mm between the end faces of the transmitter and the pick-up.
- The pick-up must be mounted vibration free on a firm bracket or part of the bell-housing.Flush-fitting in metal parts is also possible.
- The evaluating instrument must preferably be installed in a switch cabinet of the control system provided.
- Fitting transmitter not included in our delivery
- Retrofitting of the controler of temperature and speed in already installed fluid couplings is possible without reworking.

Component description

- Transmitter
    - The transmitter comprises an stainless steel bearer screw with an in-built magnet system which changes its field strength according to the temperature.
    - The magnet system is designed so that at a pick-up distance of 2 mm a cut-out temperature of 125results. If the gap between the pick-up and the transmitter is greater,

the controler of temperature and speed donot work at lower temperatures.

Technical data

- 5.2 Pick-up (magnetic sensor)
- The pick-up records the magnetic field of the transmitter each time it is passed and, if there is sufficient field strength, sends a square-wave signal to the evaluating instrument. Below a fixed field-strength threshold (temperature switching point) no signal is sent.

Technical feature

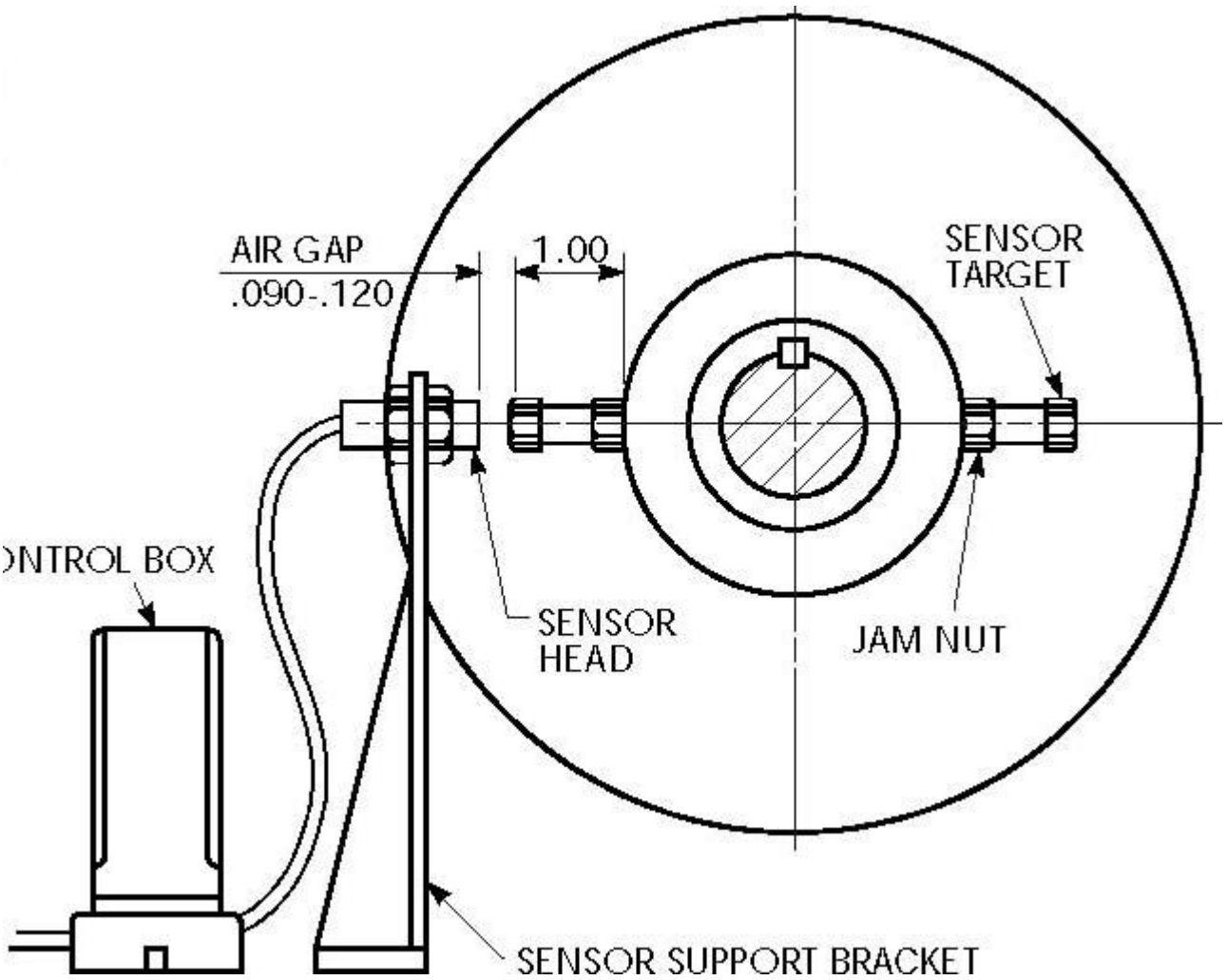
Type designation

- Output signal to EN 60947-5-6
- Type MS threaded tube chromed M18 x 1 x 70mm, also M18 x 1 x 50mm can be selectable.
- Type of fitting flush / not flush
- Type of protection IP67
- Operating temperature –25to +70

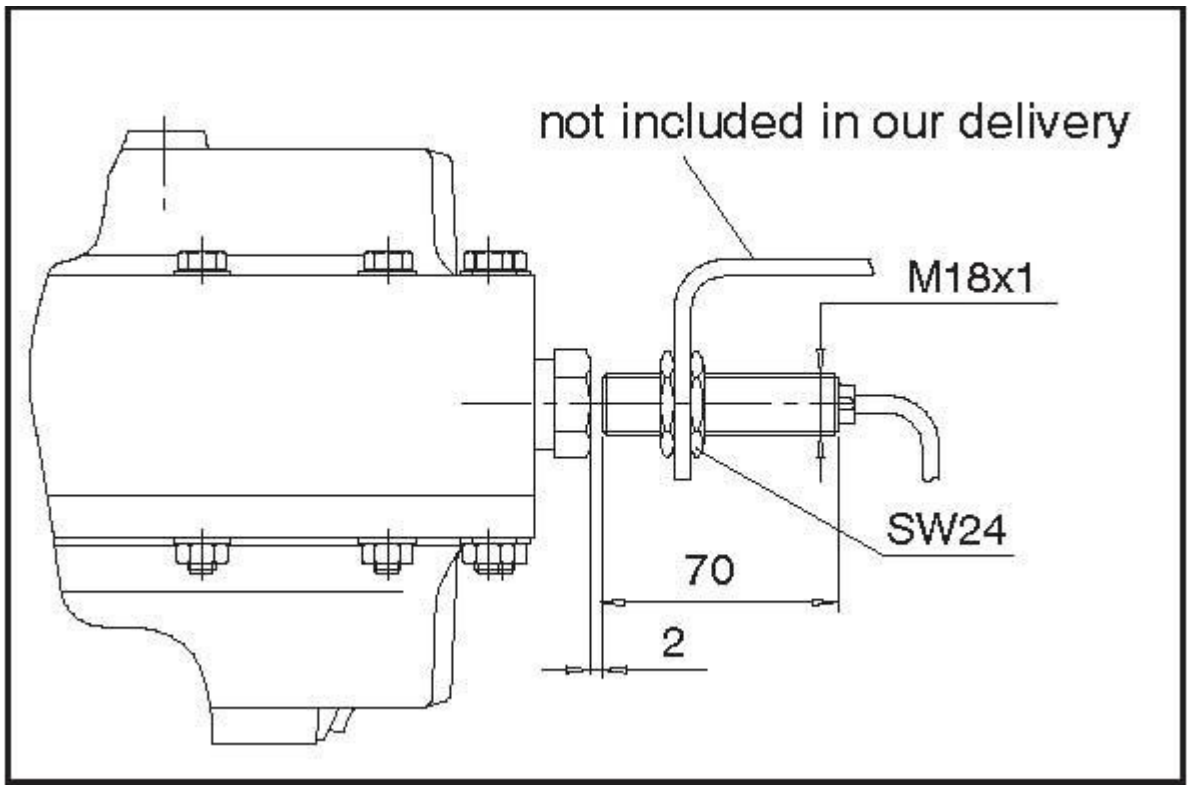
Connection

- The connection between the pick-up and the evaluating instrument is established via a two-coreconductor. The max. length of conductor with a conductor cross-sectional area of 1.0 mm2 is 500 m.
- The feed line must always be laid separately and not with others in multi-core conductors (risk ofcoupling-in interfering voltages).

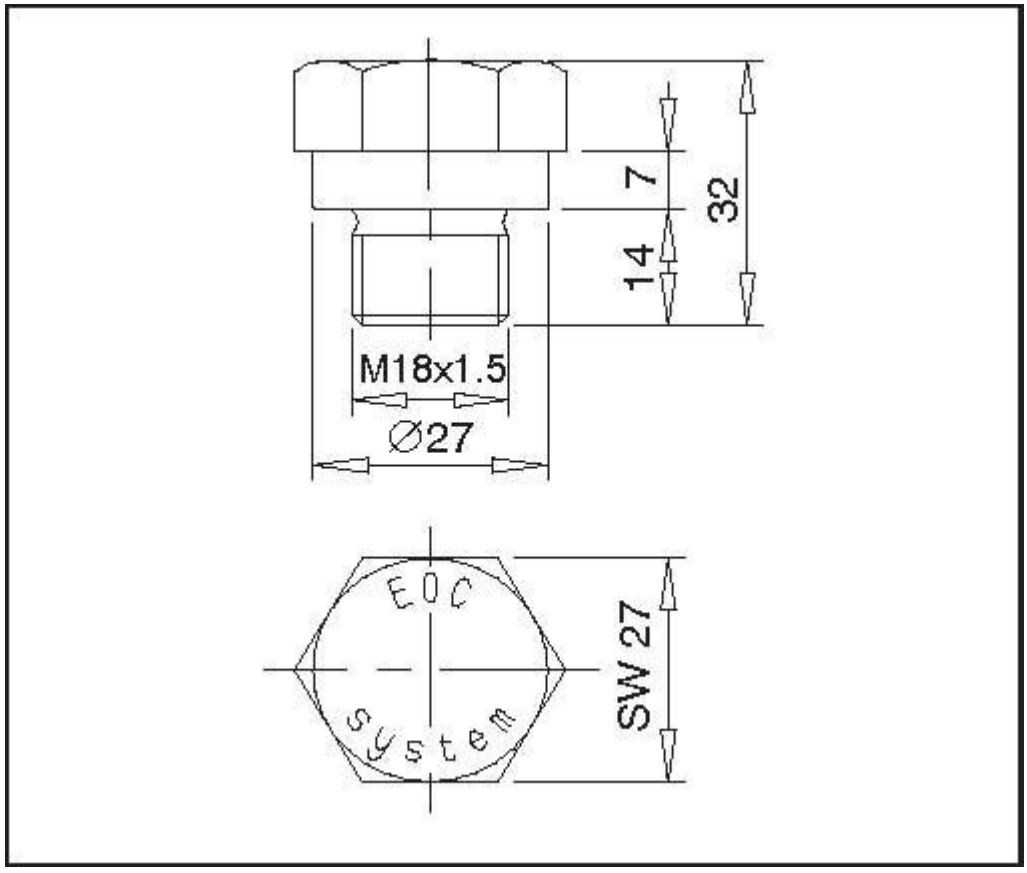
Graph Image 01



Graph Image 02



Graph Image 03



Graph Image 04