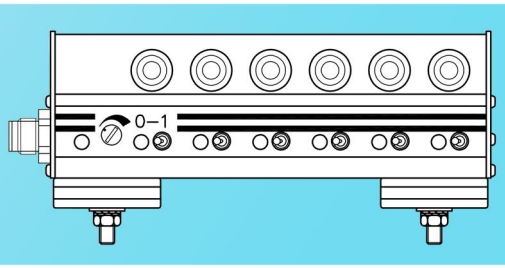
ELTEX OF SWEDEN

Instruction for thread break sensor 15965



Fitting

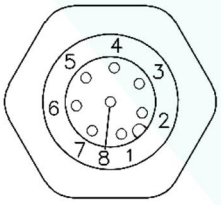
Position the thread sensor after the thread brake. The thread motion is detected most effectively when the thread deviates about 10–15° from the horizontal, when it passes through the ceramic eyelet.

Connection

The thread sensor is designed to be used with a PLC control system. It is equipped with a M12 male connector. For pin configuration, see drawing. A standard cable with M 12 8-pole female connector is used for the connection. The thread sensor has a run mode optocoupler input and a stop optocoupler output.
The PLC should be programmed to turn on the run mode optocoupler input, when the machine is in operation and threads are moving correctly.

- The run mode signal must be switched off as the machine is about to stop, otherwise the thread sensor will indicate a false stop.
- The thread sensor turns on the stop output optocoupler, if any thread moves incorrectly during run mode.
- As soon as the run mode is switched off after a thread stop, the stop output is deactivated; however, the stop indication will remain until next start of run mode, i.e. machine start again

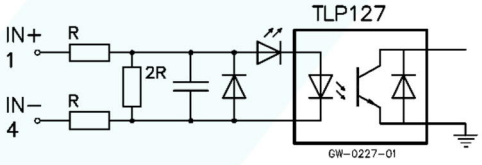
M 12 connector



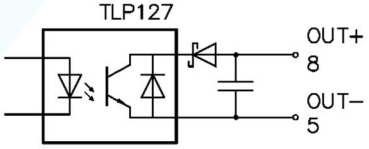
GW-0227-01

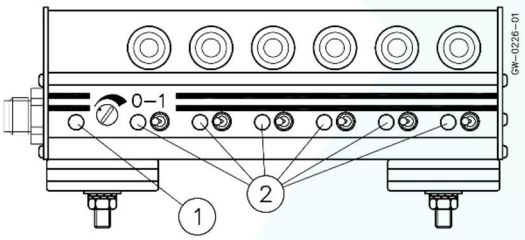
No	Colour	Function
1	White	Run mode input +
2	Brown	Power supply (+) 16–33V DC
3	Green	DNC
4	Yellow	Run mode input –
5	Grey	Stop output –
6	Pink	Sensor housing (– Ground)
7	Blue	Power supply – Ground
8	Red	Stop output +

RUN MODE INPUT
10–35V DC = RUN MODE ON



STOP OUTPUT
SPEC: 35 V/100 mA
TURNED ON AT STOP



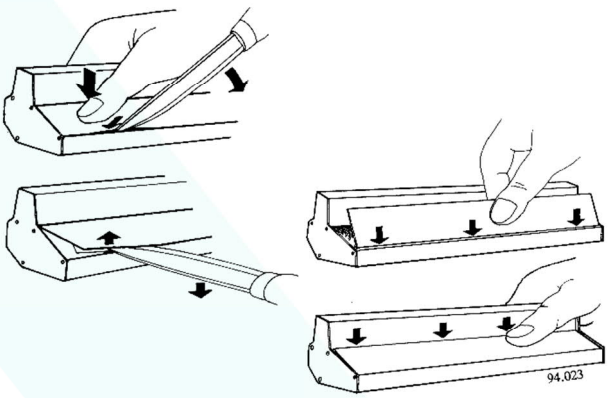


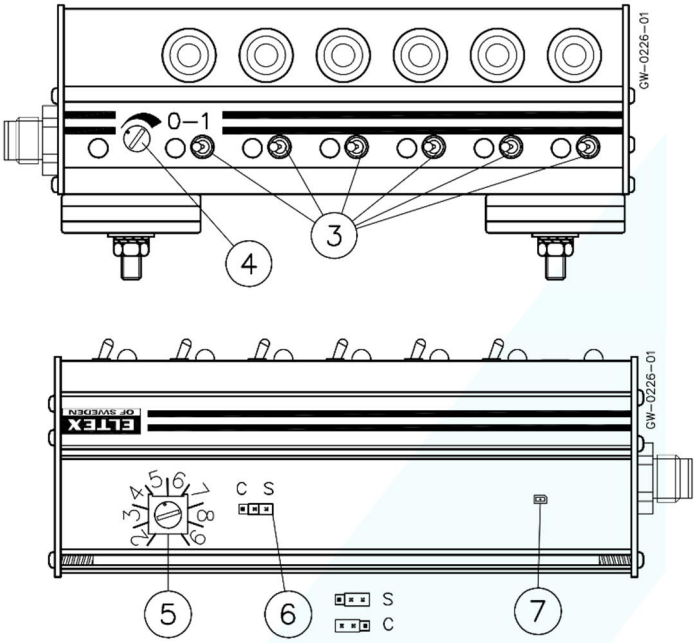
Indication

① The green LED indicates when the thread sensor is in run mode, sensing the movement of the threads.

② The 6 red LED's indicate in which position the thread sensor detected a fault.
The LED will light continuously when the thread is broken.
The LED will flash when the thread was moving continuously and not moving intermittent, as it should.

How to open and close the lid





Switches

③ Each thread position has a switch, setting the corresponding eyelet ON or OFF (OFF = 0, ON = 1).

Adjustments

④ The sensitivity can be changed with the GAIN potentiometer. Maximum setting (clockwise) for thin threads or thread with low tension or small thread movement.

⑤ The delay time of the detector circuit can be adjusted with a potentiometer inside the thread sensor. The delay time must normally be longer than the time for two stitches.
If the delay is set too short, the thread sensor will stop for no apparent reason, indicating thread broken. If the delay is set too long, the stop signal at a broken thread will be delayed many stitches before operating. The thread sensor is delivered with a default setting in position 5, which is normally OK for speeds above 1200 rpm.

Potentiometer position	**Delay (ms)**	
2	40	
3	60	
4	80	
5	100	(factory setting)
6	120	
7	140	
8	160	
9	180	

⑥ **S**: the thread must move in a stitch pulse fashion. At no or continuous movement, the sensor will give a stop output.

C: the sensor does not distinguish if the thread moves with stitch pulse or not, only that it moves.

Trouble shooting

- Thread sensor stops for no reason, indicated by continuous light at any red LED (indicating broken thread):
  - Increase the sensitivity setting clockwise.
- Thread sensor stops for no reason, indicated by flashing light at any red LED (indicating continuously moving thread):
  - Decrease the sensitivity setting counter-clockwise.
- The sensitivity is difficult to set, increasing causes stops with flash indication and decreasing causes stops with continuous indication:
  - Increase the delay time of the detector circuit. Try to set the sensitivity again.
- Thread sensor does not stop and no indication:
  - Check that green LED is ON when run mode is activated. If not – check connection cables.
- Machine does not stop, but the thread sensor indicates stop:
  - Check small LED (7) inside the thread sensor, this is ON when stop output is activated. Should be ON from stop detected until run mode is deactivated. If LED is ON and machine continues running, check connection cables.

When the 15965 sensor is replacing older models 15961 or 15962 with DB9 connection, the adapter cable 15904 can be used.

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