

# Pilger mill in tube rolling mills

Infrared sensors for signalling  
in the tube rolling mill



Infrared sensor with fiber optic cable

The increasing flexibility of production lines requires a high adaptability of sensors. Continually changing object geometries, different temperatures and very high radiation or surrounding temperatures are no rarity.

In a pilger mill those rough conditions can be found, among others in the production of seamless steel pipes. The raw steel blocks, each weighing a few tons are heated up first in a round oven at a temperature of 1300 °C.

After descaling of the surface, the steel block is prepunched in a hole press with a strength from a converted 2000 t. In the next sloping rolling mill the growing pipe rotates between two rollers that are positioned at an angle to each other. The punching is widened to the size of the mandrel diameter.

The sensor that was installed at this application is the Piros infrared sensor OKA 2038.38 G with tube OL 19. The signal of the infrared sensors controls the movement of centering device and abutment. The point of view is restricted by the tube and prevents disturbances by steam in the cooling phase.

An optimum adaptation to the operating conditions is given due to the adjustable response temperature. The Piros with self-learning response temperature (Auto-Teach function) is suited to continually changing

conditions. The OKA exists of a compact sensor with a stainless steel housing and stands firm to surrounding temperatures of up to 75° C. The application of a cooling jacket raises this up to 200° C. Alternatively there are also available sensors with fibre optic cables which permit an application at ambient temperatures up to 600° C without cooling. Different lenses are available.

#### At a glance

- Maintenance-free
- High temperature stability
- Recognition of hot objects at big distances
- Self adjustment with Auto-Teach or step switch

#### Accessories

- Piros swivel stand HM2
- Tube OL 19
- Pilot light unit (for alignment) DAK 308 + OL 26
- Different cable lengths (e.g. 15 m)

#### Technical data

Output:	PNP n.o. PNP n.c.
Operating voltage:	10 - 55 V DC
Current load:	0 - 400 mA
Ambient temperature:	-20 up to 75° C (with cooling housing up to 200° C) (with fibre optic cable up to 600° C)
Protection class:	IP 67
Connection:	2 m POKT Therm-cable