F 20 – A team full of

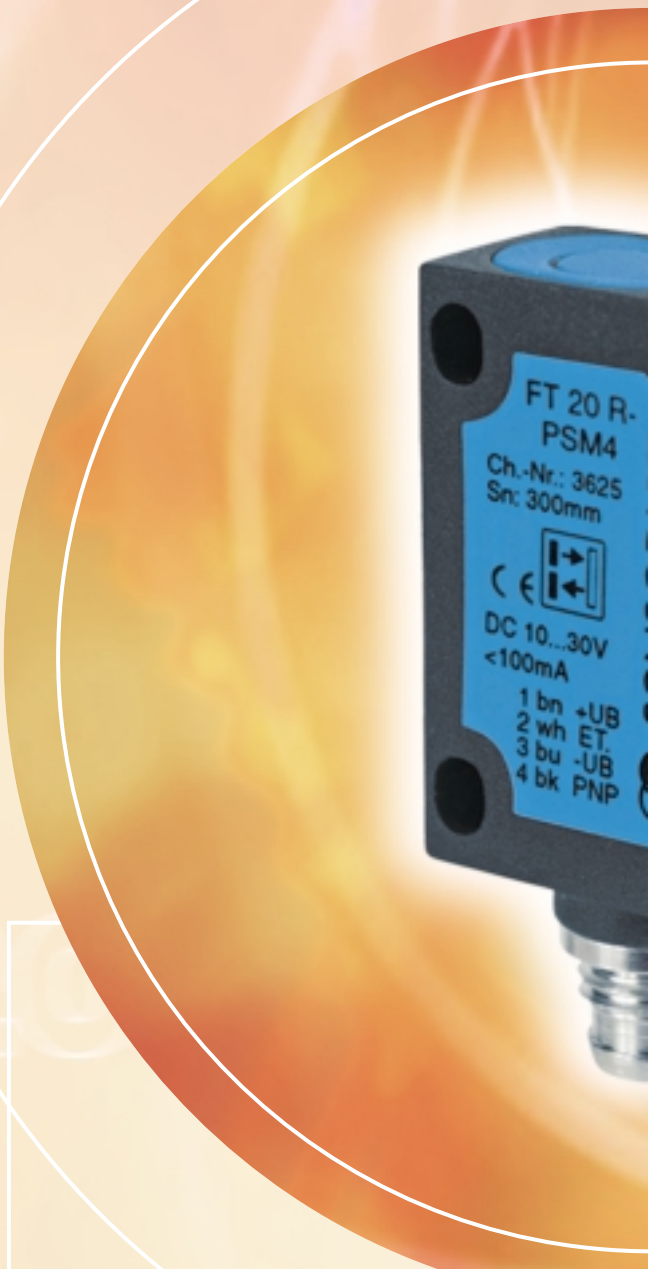
The F 20 miniature line forms a team of superlatives. As a product family, it covers **all requirements of optical sensor** technology – especially under confined space conditions – but also serves as a model for highly precise detection and most simple handling. The excellent relation between functionality and ultra-compact dimensions is world-class.

One example is the smallest teach-in laser sensor in the world: **FT 20 RLH** for the highly precise detection of smallest parts and the laser light barrier **FR 20 RL** with an exceptional scanning range. Or the patent solution for distance-dependent detection tasks within an adjustable switching range: the retro-reflective proximity switch **FT 20 RA.** This analogue sensor with digital output precisely detects and regulates all objects in the predefined window – no matter what colour, material and surface they have.

The **fiber optic amplifier FL 20 R** for plastic fibre optics facilitates use under extreme environmental conditions, whereas the **FT 20 IH** causes a sensation with its impressive scanning range.

Naturally, an outstanding performance and remarkable precision are the consistent features of all our classics: the proven **through-beam sensor FS/FE 20, the proximity switches FT 20 R** and **FT 20 RH** and the **retro-reflective light barriers FR 20 R, FR 20 RD** with increased scanning range as well as the expert for the detection of glass: **FR 20 RG.**

All products also available in connector/cable version and in PNP/NPN version.
Visible red light (LED), unless otherwise stated.



F 20 analogue and digital

WITH LED TECHNOLOGY

NEW! FT 20 RA
Proximity switch with analogue output

- *Limit frequency: 200 Hz*
- *Scanning distance: 20 to 80 mm*
- *Light source: red light*
- *Foreground and background suppression*

Typical applications:
Part sorting; distance measurement

The **F 20 top-cl**

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F 20 digital

WITH LASER TECHNOLOGY

Laserklasse 2

NEW! FT 20 RLH Laser proximity switch with background suppression
- *Switching frequency 1000 Hz*
- *Scanning distance: 20 to 60 mm*
- *Light source: red light laser diode*

Typical applications:
Detection of small parts, high accuracy for small parts approaching

New! FT 20 RL Laser contrast sensor
- *Switching frequency 1000 Hz*
- *Scanning distance: 40 to 150 mm*
- *Light source: red light laser diode*

Typical applications:
Ultra-precise detection of smallest contrast differences

NEW! FR 20 RL Laser light barrier
- *Switching frequency 1000 Hz*
- *Scanning distance: 100 to 1000 mm*
- *Light source: red light laser diode*

Typical applications:
Detection of small parts

WITH LED TECHNOLOGY

NEW! FL 20 R Fibre optic device for the adaptation of plastic fibre optics
- Scanning distance: up to 100 mm as switch, *up to 250 mm as barrier*
- *Switching frequency 1000 Hz*
- *Wide choice of fibre optics*

Typical applications:
Use under extreme conditions as e.g. high temperatures, equipment soiled with oil or restricted spaces

FT 20 RH Proximity switch with background suppression
- *Scanning distance: 20 to 100 mm*
- *Switching frequency 1000 Hz*

Typical applications:
Scanning of objects independent of their surface and colour

FT 20 IH Proximity switch with background suppression
- *Scanning distance: 30 to 150 mm*
- *Switching frequency 1000 Hz*
- *Light source: infrared light*

Typical applications:
Detection of dark objects

FT 20 R Proximity switch
- *Scanning distance: 300 mm*
- *Switching frequency 1000 Hz*

Typical applications:
Detection of contrast gradations and large objects

FR 20 R Retro-reflective light barrier
- *Scanning range: 2.5 m*
- *Switching frequency 1000 Hz*
- *Also available with increased scanning distance (3.5 m)*

Typical applications:
Detection of parts

FR 20 RG Retro-reflective light barrier for the detection of glass
- *Scanning range: 500 mm*
- *Switching frequency 1000 Hz*

Typical applications:
Detection of transparent objects as glass, foils, etc.

FS/FE 20 Through-beam sensor
- *Scanning range 6 m*
- *Switching frequency 500 Hz*

Typical applications:
Detection of parts at large distances