WTA 24: Distance measurement and object detection in one device

The WTA 24 with its compact metal housing is immune to impacts, vibrations and other disturbances. This and numerous other features make this device suitable for a large number of applications such as profile measurement, the detection of coil diameters, level monitoring, for positioning tasks in warehousing and handling systems and min./max. regulation with combined switching points.

Non-contact distance measurement and object detection – the WTA 24 photoelectric proximity switch combines both these functions. The sensor, available in three versions, covers scanning distances ranging from 100 to 3,000 mm. The triangulation principle is used to detect the presence and position of an object. The presence of an object is signalled via the digital device outputs; continuous distance values are further processed by means of the analogue interface.
In continuous tyre production, supply loops regulate web tension and, therefore, the tensile force in the material. The WTA 24 ensures that the loops are fed evenly.

On circular cross-cut saws, the width is measured continuously while the boards are automatically advanced. WTA 24 sensors see to this reliably.
WTA 24 Photoelectric proximity switches with analogue output

- Analogue + digital output
- High resolution
- Switching outputs adjustable using simple teach-in
- Compact housing
- Insensitive to ambient light

### Scanning distance

100…3000 mm

### Adjustments possible

#### All types

1. Standard direction of object being scanned
2. Output Q₂ function indicator
3. Alignment sight
4. Output Q₁ function indicator
5. Centre of transmitter’s optical axis
6. Centre of receiver’s optical axis
7. M5 threaded mounting hole, 6 mm deep
8. M5 threaded mounting hole
9. Rotatable plug
10. “Teach-in” programming switch
11. “Teach-in” function indicator
12. “Q₁/Q₂” program switch
13. “Q/Q” program switch

### Adjustment instructions

Programming the switching outputs:
1. Move “Q₁/Q₂” switch to the switching output to be programmed. Move “Q/Q” switch to the desired switching mode.
2. Place object at the required switching distance.
3. Press “Teach-in” key. “OK” indicator illuminates when the switching limit has been saved to the memory.
4. Repeat steps 1/2/3 for the second switching output.
5. The device is ready for operation.

### Accessories

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5-pin, M 12
## Technical Data

### Light source, light type
- LED, infrared light

### Supply voltage $V_s$
- $12\ldots30\,\text{V DC}$

### Ripple
- $< 5\,\text{V}_{\text{rms}}$

### Current consumption
- $< 100\,\text{mA}$

### Switching outputs
- $Q_1, Q_2$: PNP, reversible
- Output current $I_{\text{out}}$: HIGH = $V_s$ – $< 2\,\text{V}$ / LOW = $< 2\,\text{V}$
- Max. switching frequency ($f_{\text{sw}}$): 100 Hz
- Response time ($t_{\text{resp}}$): 5 ms
- Max. switching frequency: 10 Hz
- Response time: 100 ms

### Capture range
- $200\ldots250\,\text{mm}$
- $400\ldots600\,\text{mm}$
- $500\ldots1000\,\text{mm}$
- $8\ldots100\,\text{mm}$

### Light spot diameter
- $4\ldots8\,\text{mm}$
- $15\ldots30\,\text{mm}$
- $20\ldots50\,\text{mm}$
- $8\ldots12\,\text{mm}$

### Angle of dispersion $\alpha$
- $7^\circ$
- $2^\circ$
- $0.5^\circ$
- $7^\circ$

### Reproducibility
- White: $\pm 1.0\%$
- Grey: $\pm 1.0\%$
- Black: $\pm 1.5\%$

### Accuracy
- White: $\pm 0.5\%$
- Grey: $\pm 3.0\%$
- Black: $\pm 8.0\%$

### Order information

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