PHOTO-ELECTRIC SENSORS
OPTIC FIBRES
SPECIFIC PRODUCTS
LASER SENSORS
VISION ASSISTED PROXIMITY DETECTION
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RETRO-REFLEX DETECTION SENSORS

RETRO-REFLEX POLARISED AXIAL SENSOR
- Reference: BA946 S
- Maximum sensing distance:
  - on reflector ø 46:
    - 10 cm to 1 m
  - on reflector ø 84:
    - 10 cm to 2 m
- Supply: 10 to 30 VDC
- Output: PNP / NPN
- Teach-in
- ON-delay or OFF-delay timer standard
- Dimensions: 13x30x60 mm
- Insensitivity to reflection interferences
- Simple and quick set-up for self-teach (standard and sensitive mode)
- Alignment indicator
- Dirty optics indicator
- Keyboard lock
- Remote input for self-teach (sensitive mode)
- Direct or inverse output
- Universal static output
- Cable or M8 plug
- Polycarbonate strong housing

Applications:
- Position or presence control of parts on conditioning machine
- Through-beam on a conveyor
- Detection of shiny parts

RETRO-REFLEX POLARISED LATERAL SENSOR
- Reference: BL946 S
- Maximum sensing distance:
  - on reflector ø 46:
    - 2 cm to 1 m
  - on reflector ø 84:
    - 2 cm to 2 m
- Supply: 10 to 30 VDC
- Output: PNP / NPN
- Teach-in
- ON-delay or OFF-delay timer standard
- Dimensions: 13x30x78 mm
- Thickness reduced to 13 mm
- Insensitivity to reflection interferences
- Simple and quick set-up for self-teach (standard and sensitive mode)
- Alignment indicator
- Dirty optics indicator
- Keyboard lock
- Remote input for self-teach (sensitive mode)
- Direct or inverse output
- Universal static output
- Cable or M8 plug
- Polycarbonate strong housing

Applications:
- Position or presence control of parts on conditioning machine
- Through-beam on a conveyor
- Detection of shiny parts

RETRO-REFLEX POLARISED AXIAL SENSOR
- Reference: BA966 S
- Maximum sensing distance:
  - On reflector ø 46:
    - 10 cm to 1 m
  - On reflector ø 84:
    - 10 cm to 2 m
- Supply: 10 to 30 VDC
- Output: PNP / NPN
- Friendly adjustment by +/- Bargraph
- Dimensions: 13x30x60 mm
- Insensitivity to reflection interferences
- Simple adjustment
- Sensitivity bargraph indicator
- Maximum and minimum sensitivity indication
- Keyboard lock
- Direct / inverse output
- Universal static output
- Cable or M8 plug
- Polycarbonate strong housing

Applications:
- Position or presence control of parts on conditioning machine
- Through-beam on a conveyor
- Detection of shiny parts

RETRO-REFLEX POLARISED LATERAL SENSOR
- Reference: BL966 S
- Maximum sensing distance:
  - On reflector ø 46:
    - 2 cm to 1 m
  - On reflector ø 84:
    - 2 cm to 2 m
- Supply: 10 to 30 VDC
- Output: PNP / NPN
- Friendly adjustment by +/- Bargraph
- Dimensions: 13x30x78 mm
- Thickness reduced to 13 mm
- Insensitivity to reflection interferences
- Simple adjustment
- Sensitivity bargraph indicator
- Maximum and minimum sensitivity indication
- Keyboard lock
- Direct / inverse output
- Universal static output
- Cable or M8 plug
- Polycarbonate strong housing

Applications:
- Position or presence control of parts on conditioning machine
- Through-beam on a conveyor
- Detection of shiny parts
RETRO-REFLEX POLARISED SENSOR

Applications:
• Through-beam on a conveyor: glass
• Detection of transparent parts (glass, PET, …)
• Bottle detection on blow-moulding machinery (PET, glass, …).

References:
• BAT 0618 S
• BLT 0618 S

• Simple and quick set-up for self-teach
• Anti-Dust feature (Auto adjustment)
• Coaxial transmitter/receiver
• No blind zone
• Immunity to reflections interferences
• NO/NC by teach
• Output: PNP / NPN
• Plastic or Stainless Steel M18 enclosure
• M8 connector or cable

SENSOR FOR TRANSPARENT PRODUCTS

Applications:
• Through-beam on a conveyor: glass
• Detection of transparent parts (glass, PET, …)
• Bottle detection on blow-moulding machinery (PET, glass, …).

References:
• BAT 1 956 S
• BAT 2 956 S

• Simple and quick set-up for self-teach
• Coaxial emitter-receiver
• Insensitivity to reflection interferences
• Alignment indicator
• Dirty optics indicator
• Keyboard lock
• Remote input for self-teach
• Direct or inverse output
• Universal static output
• M8 plugs
• Polycarbonate strong housing

DIMENSIONS: 13x30x60 mm

RETRO-REFLEX POLARISED SENSOR

Applications:
• Detection of metallic shiny parts

References:
• B 955 S

• Set-up with one round potentiometer
• On/Off indicator
• Signal indicator
• 2 m cable or M12 plug (contact NO only)
• ABS housing

DIMENSIONS: 18x50x50 mm

RETRO-REFLEX POLARISED SENSOR

Applications:
• Strip tearing sensing
• Handling
• Admittance control

References:
• B 954 S/R

• Simple and quick set-up for self-teach (standard and sensitive mode)
• Alignment indicator
• Dirty optics indicator
• Keyboard lock
• Remote test input (S type) simulate the beam cut-off
• Direct or inverse output
• Connection on screw terminal
• Polycarbonate strong housing

DIMENSIONS: 29x60x80 mm
**Applications:**
- Small pieces control on manufacturing machines
- Sensors positioning where space is limited

**References:**
- B 929 LS
- R 82

**M8 MINIATURE CYLINDRICAL SENSOR IN THRU-BEAM MODE**
- Minimum detection distance: 2 m
- Supply: 10 to 30 VDC
- Components:
  - Miniature M8 sensor
  - Robust enclosure
  - Integrated amplifier
  - Detection indication by LED
  - Cable or M8 connector

**Applications:**
- Detection of opaque parts on a conveyor
- Control of presence of parts
- Control of parts on a robot opaque parts

**POLARISED RETRO-REFLEX MINIATURE SENSOR (LASER EMISSION)**
- Reference: B 929 LS
- Sensing distance on reflector:
  - On reflector 50x50 mm: 1 m
  - On reflector ø 84: 1.5 m
- Supply: 10 to 30 VDC
- Output: PNP
- Teach-in
- Dimensions: 12x32x20 mm
- Components:
  - Miniaturised
  - Integrated amplifier
  - Detection indication by LED
  - Red pulsed visible light
  - Laser class 2
  - Direct / inverse output
  - Remote teach-in Functions lock
  - Dirty indicator
  - ABS housing
  - M8 plug

**Applications:**
- Parcels jam control
- Detection of shiny parts on material handling
- Admittance control

**MINIATURE RETRO-REFLEX POLARISED SENSOR**
- Reference: B 989 S
- Maximum sensing distance:
  - On reflector 50x50 mm: 1 m
  - On reflector ø 84: 1.5 m
- Supply: 10 to 30 VDC
- Output: PNP or NPN
- Trimmer sensibility set-up
- Dimensions: 10x13.5x40 mm
- Components:
  - Miniaturised
  - Integrated amplifier
  - Detection indication by LED
  - Lateral beam
  - Reflector inclus 50 x 50 (réf. 1111)
  - Direct / inverse output
  - Polarised visible light
  - 2 m cable or M8 plug
  - Strong housing
  - Cheap product

**Applications:**
- Control of position or presence of parts on machine, small conveyor, robot
- Detection of small parts, even shiny
- Small space positioning sensor

**Applications:**
- Control of position or presence of parts on machine, small conveyor, robot
- Detection of small parts, even shiny
- Small space positioning sensor

**MINIATURE RETRO-REFLEX POLARISED SENSOR**
- Reference: B 989 S
- Maximum sensing distance:
  - On reflector 50x50 mm: 1 m
  - On reflector ø 84: 1.5 m
- Supply: 10 to 30 VDC
- Output: PNP or NPN
- Trimmer sensibility set-up
- Dimensions: 10x13.5x40 mm
- Components:
  - Miniaturised
  - Integrated amplifier
  - Detection indication by LED
  - Lateral beam
  - Reflector inclus 50 x 50 (réf. 1111)
  - Direct / inverse output
  - Polarised visible light
  - 2 m cable or M8 plug
  - Strong housing
  - Cheap product

**Applications:**
- Control of position or presence of parts on machine, small conveyor, robot
- Detection of small parts, even shiny
- Small space positioning sensor

**Applications:**
- Control of position or presence of parts on machine, small conveyor, robot
- Detection of small parts, even shiny
- Small space positioning sensor

**Applications:**
- Control of position or presence of parts on machine, small conveyor, robot
- Detection of small parts, even shiny
- Small space positioning sensor
**MINIATURE SENSOR IN THROUGH-BEAM MODE**

- **Reference:** E/R 989 S
- **Maximum sensing distance:** 4 m
- **Supply:** 10 to 30 VDC
- **Output:** PNP ou NPN
- **Trimmer sensibility set-up**
- **Dimensions:** 10x13,5x40 mm

- **Applications:**
  - Detection of opaque parts on a conveyor
  - Detection of opaque parts far away
  - Control of parts position on a robot

**THROUGH-BEAM SENSORS**

- **Reference:** E 955 (Transmitter) R 955 R (Receiver)
- **Maximum sensing distance:** 15 m
- **Supply:** 18 / 240 V AC/DC
- **Output:** relay
- **Dimensions:** 18x50x50 mm

- **Applications:**
  - Material handling
  - Conveyor
  - Admittance control
  - Automatic warehousing

**RETRO-REFLEX POLARISED AXIALSENSOR**

- **References:** BA 598 S
- **Sensing distance on reflector ø 84 : 3 m**
- **Supply:** 10 to 30 VDC
- **Output:** PNP
- **Dimensions:** M18x80 mm

- **Applications:**
  - Detection of opaque parts on a conveyor
  - Control of position or presence of parts on assembly or conditioning machine

**RETRO-REFLEX POLARISED LATERAL SENSOR**

- **References:** BL 598 S
- **Sensing distance on reflector on reflector ø 84 : 3 m**
- **Supply:** 10 to 30 VDC
- **Output:** PNP
- **Dimensions:** M18x80 mm

- **Applications:**
  - Detection of reflecting or shiny parts
  - Detection of parts on a conveyor
## Applications:

**M8 MINIATURE CYLINDRICAL DIFFUSE SENSOR**

- Reference: P 85
- Maximum sensing distance: 5 cm
- Supply: 10 to 30 VDC
- Miniature M8 sensor
- Robusts Enclosure
- Integrated amplifier
- Detection indication by LED
- Cable or M8 onnerctor

**Applications:**
- Small pieces control on Automatic assembly machines
- Sensor positioning where space is limited

**DIFFUSE REFLECTION AXIAL SENSOR**

- Reference: PA 946 S
- Adjustable sensing distance on reflector: 0 to 50 cm on 100 x 100 mm white sheet 92%
- Supply: 10 to 30 VDC
- Output: PNP / NPN
- Teach-in and +/-
- ON-delay or OFF-delay timer standard
- Dimensions: 13x30x60 mm
- Simple and quick set-up for self-teach (standard and sensitive mode)
- Alignment indicator
- Dirty optics indicator
- Keyboard lock
- Remote input for self-teach (sensitive mode)
- Direct or inverse output
- Universal static output
- Cable or M8 plug
- Polycarbonate strong housing

**Applications:**
- Position or presence control of parts on assembly or conditioning machine
- Detection of opaque or transparent parts
- Control of parts in a container

**DIFFUSE REFLECTION LATERAL SENSOR**

- Reference: PL 946 S
- Adjustable sensing distance on reflector: 0 to 45 cm on 100 x 100 mm white sheet 92%
- Supply: 10 to 30 VDC
- Output: PNP / NPN
- Teach-in and +/-
- ON-delay or OFF-delay timer standard
- Dimensions: 13x30x78 mm
- Thickness reduced to 13 mm
- Simple and quick set-up for self-teach (standard and sensitive mode)
- Alignment indicator
- Dirty optics indicator
- Keyboard lock
- Remote input for self-teach (sensitive mode)
- Direct or inverse output
- Universal static output
- Cable or M8 plug
- Polycarbonate strong housing

**Applications:**
- Position or presence control of parts on assembly or conditioning machine
- Detection of opaque or transparent parts
- Control of parts in a container

**DIFFUSE REFLECTION AXIAL SENSOR**

- Reference: PA 966 S
- Max adjustable sensing distance on reflector: 50 cm on 100 x 100 mm white sheet 92%
- Supply: 10 to 30 VDC
- Output: PNP / NPN
- Friendly adjustment by +/-
- Bargraph
- Dimensions: 13x30x60 mm
- Simple adjustment
- Sensitivity bargraph indicator
- Maximum and minimum sensitivity indication
- Keyboard lock
- Direct / inverse output
- Universal static output
- Cable or M8 plug
- Polycarbonate strong housing

**Applications:**
- Position control on an assembly or conditioning machine
- Detection of objects inside the bottle
- Detection of opaque or transparent objects

**DETECTEURS DE PROXIMITE**

**Applications:**
- Presence of a cap on the bottle

**DIFFUSE REFLECTION AXIAL SENSOR**

- Application: Presence of a cap on the bottle
- Reference: PA 966 S
- Max adjustable sensing distance on reflector: 50 cm on 100 x 100 mm white sheet 92%
- Supply: 10 to 30 VDC
- Output: PNP / NPN
- Friendly adjustment by +/-
- Bargraph
- Dimensions: 13x30x60 mm
- Simple adjustment
- Sensitivity bargraph indicator
- Maximum and minimum sensitivity indication
- Keyboard lock
- Direct / inverse output
- Universal static output
- Cable or M8 plug
- Polycarbonate strong housing

**Applications:**
- Position control on an assembly or conditioning machine
- Detection of objects inside the bottle
- Detection of opaque or transparent objects
DIFFUSE REFLECTION LATERAL SENSOR

- **Applications:**
  - Strip tearing sensing
  - Handling
  - Admittance control
- **References:** P 952 S/R
- **Adjustable sensing distance:**
  - 4 m on white sheet 92%
- **Supply:**
  - 10 to 30 VDC
- **Output:**
  - PNP / NPN
- **Dimensions:**
  - 29x60x80 mm

- **Features:**
  - Simple and quick set-up for self-teach (standard and sensitive mode)
  - Alignment indicator
  - Dirty optics indicator
  - Keyboard lock
  - Remote test input (S type) simulate the beam cut-off
  - Direct or inverse output
  - Connection on screw terminal
  - Polycarbonate strong housing

AXIAL DIFFUSE REFLECTION SENSOR

- **Applications:**
  - Detection of transparent or opaque parts
  - Detection for handling or medium size conveyor
- **Reference:** P 955 R
- **Adjustable sensing distance on white paper 92%:**
  - 20 cm to 1,50 m
- **Supply:**
  - 18/240 VAC/DC
- **Output:**
  - relay
- **Dimensions:**
  - 18x50x50 mm

- **Features:**
  - Simple and quick set-up for self-teach (standard and sensitive mode)
  - Alignment indicator
  - Dirty optics indicator
  - Keyboard lock
  - Remote test input (S type) simulate the beam cut-off
  - Direct or inverse output
  - Connection on screw terminal
  - Polycarbonate strong housing
  - 2 m cable or M12 plug (NO contact only)

DIFFUSE REFLECTION SENSOR

- **Applications:**
  - Strip slack control
  - Handling
  - Admittance control
- **Reference:** P 954 S/R
- **Adjustable sensing distance on white paper 92%:**
  - 1.5 m on 300x300 mm white sheet
- **Supply:**
  - 10 to 30 VDC or 20 to 250 V AC/DC
- **Output:**
  - relay
- **Dimensions:**
  - 29x60x80 mm

- **Features:**
  - Simple and quick set-up for self-teach (standard and sensitive mode)
  - Alignment indicator
  - Dirty optics indicator
  - Keyboard lock
  - Remote test input (S type) simulate the beam cut-off
  - Direct or inverse output
  - Connection on screw terminal
  - Polycarbonate strong housing

DIFFUSE REFLECTION SENSOR

- **Applications:**
  - Strip slack control
  - Handling
  - Admittance control
- **Reference:** P 952 S/R
- **Adjustable sensing distance:**
  - 4 m on white sheet 92% from 300x300 mm
- **Supply:**
  - 10 to 30 VDC or 20 to 250 V AC/DC
- **Output:**
  - PNP / NPN ou relay
- **Dimensions:**
  - 29x60x80 mm

- **Features:**
  - Simple and quick set-up for self-teach (standard and sensitive mode)
  - Alignment indicator
  - Dirty optics indicator
  - Keyboard lock
  - Remote test input (S type) simulate the beam cut-off
  - Direct or inverse output
  - Connection on screw terminal
  - Polycarbonate strong housing
**MINIATURE DIFFUSE REFLECTION SENSOR**

- **Reference:** P 989 S
- **Adjustable sensing distance**
  - on reflector from 3 to 25 cm
  - on white sheet 92% from 100x100 mm
- **Supply:** 10 to 30 VDC
- **Output:** PNP or NPN
- **Trimmer sensibility set-up**
- **Dimensions:** 10x13.5x40 mm

**Applications:**
- Control of position or presence of parts on assembly machine
- Detection of opaque or transparent objects
- Small spaces positioning sensors

**DIFFUSE REFLECTION SENSOR**

- **References:** PAP 318 / 328 S
  - PAM 318 / 328 S
  - PLM 318 / 328 S
- **Maximum sensing distance:**
  - 318 fixed: 0,10 m
  - 328 adjustable: 0,40 m
  - on white sheet 92% from 100x100 mm
- **Supply:** 10 to 30 VDC
- **Output:** PNP
- **Dimensions:** M18x78 mm

**Applications:**
- Detection of various parts
- Control of position or presence of parts on a conveyor
- Presence of a cap on a bottle

**AXIAL DIFFUSE DETECTION ANALOGICAL SENSOR (LASER EMISSION)**

- **Reference:** P 925 L1 AN S
  - P 925 L2 AN S
  - P 925 L3 AN S
- **Sensing distance:**
  - P 925 L1 AN S: 40 to 60 mm
  - P 925 L2 AN S: 45 to 85 mm
  - P 925 L3 AN S: 80 to 300 mm
- **Supply:** 18 to 28 VDC
- **Output analogical:**
  - P 925 L1/L2: 0...10 V
  - P 925 L3: 4...20 mA
- **Dimensions:** 50x50x17 mm

**Applications:**
- Position control of an arm robot
- Thickness measurement of mechanical pieces

**Applications:**
- Control of position or presence of parts on a conveyor
- Detection indication by LED
- P 925 L1/L2: no necessary setting
- P 925 L3: setting by buttons
- Red pulsed visible light
- Laser class 2
- Minimum resolution: 0.01 mm
- Analogical output:
  - P 925 L1/L2: 0...10 V
  - P 925 L3: 4...20 mA
- Antichock ABS housing
- Orientable M12 connector

**Applications:**
- Position control of an arm robot
- Thickness measurement of mechanical pieces
PLASTIC FIBRE OPTICS AND PLASTIC FIBRE OPTIC SENSORS

PLASTIC FIBRE OPTIC SENSOR

- Reference: AF 400
- Sensing dist with plastic fibre: see "Plastic Fibre Optics"
- Supply: 115 / 230 V AC
- Output: relay
- Dimensions: 30x80x70 mm
- Self-cut plastic fibre
- Economical device
- Quick assembly of building blocks/modes
- Choice of six optics
- Plastic fibre sold by the meter
- Connecting block terminal
- ABS strong housing

Applications:
• Position or presence control of parts on assembly or conditioning machine
• Detection of opaque or transparent parts
• Control of parts in a container

Through-beam application in pharmaceutical plant with optics

PLASTIC FIBRE OPTIC SENSOR

- Reference: AFP 946 S
- Sensing dist with plastic fibre: see "Plastic Fibre Optics"
- Supply: 10 to 30 VDC
- Output: PNP / NPN
- Teach-in
- ON-delay or OFF-delay timer standard
- Dimensions: 13x30x60 mm
- Simple and quick set-up for self-teach (standard and sensitive mode)
- Alignment indicator
- Dirty optics indicator
- Keyboard lock
- Remote input for self-teach (sensitive mode)
- LO/DO output
- Direct or inverse output
- Universal static output
- Cable or M8 plug
- Polycarbonate strong housing

Applications:
• Position or presence control of parts on assembling or conditioning machine
• Detection of translucent parts on little conveyor
• Plastic fibre use in vibrating surroundings

Control of presence of pills in a blister pack

PLASTIC FIBRE OPTIC SENSOR

- Reference: AFP 966 S
- Sensing dist with plastic fibre: see "Plastic Fibre Optics"
- Supply: 10 to 30 VDC
- Output: PNP / NPN
- Friendly adjustment by +/-
- Bargraph
- Dimensions: 13x30x60 mm
- Simple adjustment
- Sensitivity bargraph indicator
- Maximum and minimum sensitivity indication
- Keyboard lock
- Direct / inverse output
- Universal static output
- Cable or M8 plug
- Polycarbonate strong housing

Applications:
• Position or presence control of parts on assembling or conditioning machine
• Detection of translucent parts on little conveyor
• Plastic fibre use in vibrating surroundings

Detection of a part from a bowl feeder

PLASTIC FIBRE OPTIC SENSOR

- Reference: AFP 954 R
- Sensing dist with plastic fibre: see "Plastic Fibre Optics"
- Supply: 20 to 250 V AC/DC
- Output: relay
- Teach in
- ON-delay + OFF-delay timer standard
- Dimensions: 29x60x80 mm
- Simple and quick set-up for self-teach (standard and sensitive mode)
- Alignment indicator
- Dirty optics indicator
- Keyboard lock
- Direct or inverse output
- Connection on screw terminal
- Polycarbonate strong housing

Applications:
• Position or presence control of parts on assembling or conditioning machine
• Detection of translucent parts on little conveyor
• Plastic fibre use in vibrating surroundings

Through-beam and direct sensing application with self-teach
PLASTIC OPTIC FIBRES

- Reference: FP (E/R)
- Up to 80 mm diffuse reflection white paper 92%: 0 to 200 mm, up to 1200 mm (with optics)
- With sensors:
  - AFP 946 S
  - AFP 954 R
  - AF 400
  - AFP 966 S
  - AFP 989 S
  - AF CLARYS
- Monofibre plastic (type FP)
- Multifibres: high mechanical resistance (type FPU)
- Useful diameter of the fiber 0.5 mm or 1 mm
- Sensing distance for a fibre length up to 2 meters
- Unexpensive product
- High use flexibility by adjustable length
- Applications:
  - Products detection on vibrating machines
  - Applications with moving fibres

PLASTIC FIBRE MINIATURE OPTIC SENSOR

- Reference: AFP 989 S
- Sensing distance on reflector avec fibre plastique : voir "Fibres Optiques Plastique"
- Supply: 10 to 30 VDC
- Output: PNP ou NPN
- Trimmer sensitivity set-up
- Dimensions: 10x13,5x40 mm
- Miniaturised
- Integrated amplifier
- Quick set-up of the plastic fibre
- Detection indication by LED
- Direct /inverse output
- Red pulsed visible light
- 2 m cable or M8 plug
- Inexpensive product
- Integrated circuit pins detection
- Analogical control of the cork position
- Applications:
  - Detection of parts in a difficult access
  - Plastic fibre use in vibrating surroundings
  - Small spaces conditioning sensors

PLASTIC OPTIC FIBRES

- Reference: FP (P)
- Up to 80 mm diffuse reflection white paper 92%: 0 to 80 mm
- With sensors:
  - AFP 946 S
  - AFP 954 R
  - AF 400
  - AFP 966 S
  - AFP 989 S
- Monofibre plastic (type FP)
- Multifibres: high mechanical resistance (type FPU)
- Useful diameter of the fiber 0.5 mm or 1 mm
- Sensing distance for a fibre length up to 2 meters
- Unexpensive product
- High use flexibility by adjustable length
- Applications:
  - Products detection on vibrating machines
  - Applications with moving fibres
  - Counting ball bearings on a conveyor
GLASS FIBRE OPTICS AND GLASS FIBRE OPTIC SENSORS

**GLASS FIBRE OPTIC SENSOR**

- Reference: AFV 946 S
- Sensing dist with glass fibre: see “Glass Fibre Optics”
- Supply: 10 to 30 VDC
- Output: PNP / NPN
- Teach-in and +/-
- ON-delay or OFF-delay timer standard
- Dimensions: 13x30x60 mm

- Simple and quick set-up for self-teach (standard and sensitive mode)
- Alignment indicator
- Adjustable timer
- Dirty optics indicator
- Keyboard lock
- Remote input for self-teach
  (sensitive mode)
- Direct or inverse output
- Universal static output
- Cable or M8 plug
- Polycarbonate strong housing

**Applications:**
- Position or presence control of parts on assembling or conditioning machine
- Detection of presence of parts in a plastic mould
- Detection under extreme conditions
- Glass fibre use in high-temperature surroundings (out of a furnace)

**GLASS FIBRE OPTIC SENSOR**

- Reference: AFV 966 S
- Sensing dist with glass fibre: see “Glass Fibre Optics”
- Supply: 10 to 30 VDC
- Output: PNP / NPN
- Friendly adjustment by +/-
- Bargraph
- Dimensions: 13x30x60 mm

- Simple adjustment
- Sensitivity bargraph indicator
- Maximum and minimum sensitivity indication
- Keyboard lock
- Direct / inverse output
- Universal static output
- Cable or M8 plug
- Polycarbonate strong housing

**GLASS FIBRE OPTIC SENSOR**

- Reference: AFV 954 R
- Sensing dist with glass fibre: see “Glass Fibre Optics”
- Supply: 20 to 250 V AC/DC
- Output: relay
- Friendly adjustment by +/-
- ON-delay + OFF-delay timer standard
- Dimensions: 29x60x80 mm

- Simple and quick set-up for self-teach (standard and sensitive mode)
- Alignment indicator
- Dirty optics indicator
- Keyboard lock
- Remote input for self-teach
  (sensitive mode)
- Direct or inverse output
- Connection on screw terminal
- Polycarbonate strong housing

**GLASS FIBRE OPTIC IN THROUGH-BEAM MODE**

- Reference: FV (E/R)
- Maximum sensing distance: 0 to 200 mm up to 3000 mm
  (with optics)

- Glass fibre 400 strands per mm
- Useful diameter of the fibre 1.2 mm
- Sensing distance given for a fibre length up to 1 meter

**Applications:**
- Detection in a high-temperature environment (up to 200°)
- Detection in corrosive environment
- Application requiring high performances
MULTICHANNEL SENSOR FOR OPTICAL PLASTIC AND GLASS FIBRES

- Reference: AF CLARYS 2,3,4
- Sensing distance with plastic fibre or glass fibre: see “Plastic Optical Fibres” or “Glass Optical Fibres”
- High resolution: up to 5/100th mm
- 2,3,4 channels + logical output AND/OR
- Models: output P, output N
- Optional: Analogue output
- Simple teach-in: 1 or 2 thresholds
- Timer ON/OFF delay: 0 to 10s
- Dimensions: 99x45x325 mm

Applications:
- Level controls: high and low
- High precision detection of movement
- Presence detection, up to 4 units simultaneously
- Up to 4 beams barrier
- Mark detection

GLASS FIBRE OPTIC IN REFLECTIVE MODE

- Reference: FV (P)
- Sensing distance: 0 to 80 mm
- Usable amplifiers:
  - AFV 946 S
  - AFV 954 R
  - AFV 966 S
- Glass fibre 400 strands per mm
- Useful diameter of the fibre 1.2 mm
- Sensing distance given for a fibre length up to 1 meter

Applications:
- Detection in a high-temperature environment (up to 200°)
- Detection in corrosive environment
- Application requiring high performances

FORK AND FRAME SENSORS

FRAME SENSOR

- References: CAD 30 S
  - CAD 60 S
- Spread: 30x30 mm or 60x60 mm
- Supply: 24 VDC
- Output: PNP / NPN
- Adjustable timer
- Built-in amplifier
- Detectable minimum object: 2 mm
- Dimensions:
  - CAD 30: 15x50x108 mm
  - CAD 60: 15x86x131 mm

Applications:
- Detection of parts at the output of a bowl feeder

GLASS FIBRE OPTIC IN REFLECTIVE MODE

- Reference: FV (P)
- Sensing distance: 0 to 80 mm
- Usable amplifiers:
  - AFV 946 S
  - AFV 954 R
  - AFV 966 S
- Glass fibre 400 strands per mm
- Useful diameter of the fibre 1.2 mm
- Sensing distance given for a fibre length up to 1 meter

Applications:
- Detection in a high-temperature environment (up to 200°)
- Detection in corrosive environment
- Application requiring high performances

MULTICHANNEL SENSOR FOR OPTICAL PLASTIC AND GLASS FIBRES

- Reference: AF CLARYS 2,3,4
- Sensing distance with plastic fibre or glass fibre: see “Plastic Optical Fibres” or “Glass Optical Fibres”
- High resolution: up to 5/100th mm
- 2,3,4 channels + logical output AND/OR
- Models: output P, output N
- Optional: Analogue output
- Simple teach-in: 1 or 2 thresholds
- Timer ON/OFF delay: 0 to 10s
- Dimensions: 99x45x325 mm

Applications:
- Level controls: high and low
- High precision detection of movement
- Presence detection, up to 4 units simultaneously
- Up to 4 beams barrier
- Mark detection

GLASS FIBRE OPTIC IN REFLECTIVE MODE

- Reference: FV (P)
- Sensing distance: 0 to 80 mm
- Usable amplifiers:
  - AFV 946 S
  - AFV 954 R
  - AFV 966 S
- Glass fibre 400 strands per mm
- Useful diameter of the fibre 1.2 mm
- Sensing distance given for a fibre length up to 1 meter

Applications:
- Detection in a high-temperature environment (up to 200°)
- Detection in corrosive environment
- Application requiring high performances

MULTICHANNEL SENSOR FOR OPTICAL PLASTIC AND GLASS FIBRES

- Reference: AF CLARYS 2,3,4
- Sensing distance with plastic fibre or glass fibre: see “Plastic Optical Fibres” or “Glass Optical Fibres”
- High resolution: up to 5/100th mm
- 2,3,4 channels + logical output AND/OR
- Models: output P, output N
- Optional: Analogue output
- Simple teach-in: 1 or 2 thresholds
- Timer ON/OFF delay: 0 to 10s
- Dimensions: 99x45x325 mm

Applications:
- Level controls: high and low
- High precision detection of movement
- Presence detection, up to 4 units simultaneously
- Up to 4 beams barrier
- Mark detection

GLASS FIBRE OPTIC IN REFLECTIVE MODE

- Reference: FV (P)
- Sensing distance: 0 to 80 mm
- Usable amplifiers:
  - AFV 946 S
  - AFV 954 R
  - AFV 966 S
- Glass fibre 400 strands per mm
- Useful diameter of the fibre 1.2 mm
- Sensing distance given for a fibre length up to 1 meter

Applications:
- Detection in a high-temperature environment (up to 200°)
- Detection in corrosive environment
- Application requiring high performances

MULTICHANNEL SENSOR FOR OPTICAL PLASTIC AND GLASS FIBRES

- Reference: AF CLARYS 2,3,4
- Sensing distance with plastic fibre or glass fibre: see “Plastic Optical Fibres” or “Glass Optical Fibres”
- High resolution: up to 5/100th mm
- 2,3,4 channels + logical output AND/OR
- Models: output P, output N
- Optional: Analogue output
- Simple teach-in: 1 or 2 thresholds
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- Mark detection

GLASS FIBRE OPTIC IN REFLECTIVE MODE

- Reference: FV (P)
- Sensing distance: 0 to 80 mm
- Usable amplifiers:
  - AFV 946 S
  - AFV 954 R
  - AFV 966 S
- Glass fibre 400 strands per mm
- Useful diameter of the fibre 1.2 mm
- Sensing distance given for a fibre length up to 1 meter

Applications:
- Detection in a high-temperature environment (up to 200°)
- Detection in corrosive environment
- Application requiring high performances

MULTICHANNEL SENSOR FOR OPTICAL PLASTIC AND GLASS FIBRES

- Reference: AF CLARYS 2,3,4
- Sensing distance with plastic fibre or glass fibre: see “Plastic Optical Fibres” or “Glass Optical Fibres”
- High resolution: up to 5/100th mm
- 2,3,4 channels + logical output AND/OR
- Models: output P, output N
- Optional: Analogue output
- Simple teach-in: 1 or 2 thresholds
- Timer ON/OFF delay: 0 to 10s
- Dimensions: 99x45x325 mm

Applications:
- Level controls: high and low
- High precision detection of movement
- Presence detection, up to 4 units simultaneously
- Up to 4 beams barrier
- Mark detection

GLASS FIBRE OPTIC IN REFLECTIVE MODE

- Reference: FV (P)
- Sensing distance: 0 to 80 mm
- Usable amplifiers:
  - AFV 946 S
  - AFV 954 R
  - AFV 966 S
- Glass fibre 400 strands per mm
- Useful diameter of the fibre 1.2 mm
- Sensing distance given for a fibre length up to 1 meter

Applications:
- Detection in a high-temperature environment (up to 200°)
- Detection in corrosive environment
- Application requiring high performances

MULTICHANNEL SENSOR FOR OPTICAL PLASTIC AND GLASS FIBRES

- Reference: AF CLARYS 2,3,4
- Sensing distance with plastic fibre or glass fibre: see “Plastic Optical Fibres” or “Glass Optical Fibres”
- High resolution: up to 5/100th mm
- 2,3,4 channels + logical output AND/OR
- Models: output P, output N
- Optional: Analogue output
- Simple teach-in: 1 or 2 thresholds
- Timer ON/OFF delay: 0 to 10s
- Dimensions: 99x45x325 mm

Applications:
- Level controls: high and low
- High precision detection of movement
- Presence detection, up to 4 units simultaneously
- Up to 4 beams barrier
- Mark detection

GLASS FIBRE OPTIC IN REFLECTIVE MODE

- Reference: FV (P)
- Sensing distance: 0 to 80 mm
- Usable amplifiers:
  - AFV 946 S
  - AFV 954 R
  - AFV 966 S
- Glass fibre 400 strands per mm
- Useful diameter of the fibre 1.2 mm
- Sensing distance given for a fibre length up to 1 meter

Applications:
- Detection in a high-temperature environment (up to 200°)
- Detection in corrosive environment
- Application requiring high performances

MULTICHANNEL SENSOR FOR OPTICAL PLASTIC AND GLASS FIBRES

- Reference: AF CLARYS 2,3,4
- Sensing distance with plastic fibre or glass fibre: see “Plastic Optical Fibres” or “Glass Optical Fibres”
- High resolution: up to 5/100th mm
- 2,3,4 channels + logical output AND/OR
- Models: output P, output N
- Optional: Analogue output
- Simple teach-in: 1 or 2 thresholds
- Timer ON/OFF delay: 0 to 10s
- Dimensions: 99x45x325 mm

Applications:
- Level controls: high and low
- High precision detection of movement
- Presence detection, up to 4 units simultaneously
- Up to 4 beams barrier
- Mark detection

GLASS FIBRE OPTIC IN REFLECTIVE MODE

- Reference: FV (P)
- Sensing distance: 0 to 80 mm
- Usable amplifiers:
  - AFV 946 S
  - AFV 954 R
  - AFV 966 S
- Glass fibre 400 strands per mm
- Useful diameter of the fibre 1.2 mm
- Sensing distance given for a fibre length up to 1 meter

Applications:
- Detection in a high-temperature environment (up to 200°)
- Detection in corrosive environment
- Application requiring high performances

MULTICHANNEL SENSOR FOR OPTICAL PLASTIC AND GLASS FIBRES

- Reference: AF CLARYS 2,3,4
- Sensing distance with plastic fibre or glass fibre: see “Plastic Optical Fibres” or “Glass Optical Fibres”
- High resolution: up to 5/100th mm
- 2,3,4 channels + logical output AND/OR
- Models: output P, output N
- Optional: Analogue output
- Simple teach-in: 1 or 2 thresholds
- Timer ON/OFF delay: 0 to 10s
- Dimensions: 99x45x325 mm

Applications:
- Level controls: high and low
- High precision detection of movement
- Presence detection, up to 4 units simultaneously
- Up to 4 beams barrier
- Mark detection
FRAME SENSOR

Applications:
• Detection of parts of various material (plastic or metal), various shape and colour while in motion
• Counting of parts
• Tools protection by ejection control of parts from press

References:
• CAD 120 S
• CAD 180 S
• CAD 250 S

Spread: 120 to 250 mm
Supply: 24 VDC
Outputs: PNP / NPN
Adjustable timer
Amplificateur intégré
Dimensions: 25x230x205 mm to 25x230x335 mm according to the type

Simple and quick adjustment by potentiometer
Dirty optics indicator
Output indicator
Faulty supply indicator
Mechanical protection of the optics
Direct or inverse output
Built-in amplifier
M12 plug
Painted aluminium strong housing

Minim object size detected: 4 mm

FRAME SENSOR

Applications:
• Comptage de pièces
• Contrôle d’éjection de pièces en sortie de machine d’injection plastique
• Détection de passage de pièces travers un conduit translucide
• Détection d’objets par gravité ou accéléré

References:
• FRS 120 S
• FRS 180 S
• FRS 250 S

Spread: 120 to 250 mm
Supply: 24 VDC
Output: PNP / NPN
Adjustable timer
Dimensions: 25x230x205 mm to 25x230x335 mm according to the type

Inexpensive product designed to detect any product in a spread from 120 x 200 mm to 250 x 200 mm
Minimum object size detected: 10 mm
Universal static output
M12 plug
Painted aluminium strong housing

NEPTUNE OPTICAL FORKS

Applications:
• Detection of label
• Detection of double sheet
• Detection of marks
• Detection on a conveyor
• Detection on a vibrating rail

Reference:
• F NEPTUNE

Spread: 2 to 120 mm
Depth: 42 to 95 mm
Supply: 10 to 30 VDC
Outputs: PNP and NPN independent
High sensitivity
Ultra high-speed detection: 10 kHz
Dimensions: 10x57x32 mm to 10x110x150 mm according to the type

Potentiometric set-up type (green keyboard)
Teach-in set-up type background / object (yellow keyboard)
Keyboard locking
Direct / inverse (L/D)
Independent PNP and NPN outputs
Output indicator
Function indicator
M8 connector
Metal and polyamid/glass housing

FOURCHES OPTIQUES NEPTUNE LASER

Applications:
• Detection of marks
• Detection of transparent object
• Detection on a vibrating rail

Reference:
• FL NEPTUNE

Spread: 2 to 120 mm
Depth: 42 to 95 mm
Supply: 10 to 30 VDC
Sorties : PNP and NPN independent
High sensitivity
Ultra high-speed detection: 10 kHz
Dimensions: 10x57x32 mm to 10x110x160 mm according to the type

LASER : modulated red Class I 670 nm
Potentiometric set-up type (green keyboard)
Teach-in set-up type background / object (yellow keyboard)
Keyboard locking
Direct / inverse (L/D)
Independent PNP and NPN outputs
Output indicator
Function indicator
M8 connector
Metal and polyamid/glass housing

Detection of transparent bottles (glass, PET…)

Ejection control at the output of a press
**PRODUITS SPECIFIQUES**

**DIFFUSE DETECTION SENSOR WITH DOUBLE TRIANGULATION**
- **Reference:** PS2 945 S
- **Adjustable sensing distance on reflector:** 50 to 600 mm
- **Supply:** 10 to 30 VDC
- **Output:** PNP / NPN
- **High accuracy in distance**
- **Dimensions:** 18x60x60 mm
- **Applications:**
  - Simple and quick teach-in set-up
  - High speed of detection
  - Integrated Amplifier
  - Distance control
  - Contrasted objects detection
  - Universal static output
  - M8 plug
  - Polyamide strong housing

**Applications:**
- Lateral shift control of a belt
- Handling: control of tools travel
- Detection of sheets over-lapping
- Detection of marks on a translucent film

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**LASER DIFFUSE DETECTION SENSOR**
- **Reference:** PS1 L 965 S
- **Adjustable sensing distance:** 50 to 300 m
- **Supply:** 10 to 30 VDC
- **Output:** PNP / NPN
- **ON-delay or OFF-delay timer standard**
- **High accuracy**
- **Dimensions:** 18x60x65 mm
- **Applications:**
  - Emission by visible red light
  - Spot size by adjustable focus
  - Distance adjustment by precision screw
  - Direct and inverse function
  - Programmable timer to 40 ms max
  - Laser class 2
  - On / Off function

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**TEACH-IN FORK SENSOR**
- **Reference:** FA 98 S
- **Spread:** 3 mm or 5 mm
- **Supply:** 10 to 30 VDC
- **Output:** PNP / NPN
- **Teach-in automatic set-up**
- **High accuracy in distance**
- **Dimensions:** 12x37,5x80 mm
- **Applications:**
  - Simple and quick teach-in set-up
  - High speed of detection
  - Integrated Amplifier
  - Set-up on the fork or by external input
  - Set-up lock
  - Output indicator
  - Direct / inverse output
  - Universal static output
  - M8 plug
  - Anodised aluminium strong housing

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**FORK SENSOR**
- **Reference:** F 95 S
- **Spread:** 2 to 225 mm
- **Supply:** 10 to 30 VDC
- **Outputs:** PNP / NPN
- **High sensitivity**
- **High speed of detection**
- **Integrated Amplifier**
- **Dimensions:** 12x60x37 mm to 12x77x158 mm according to the type
- **Applications:**
  - Simple and accurate adjustment by potentiometer (25 rotations)
  - Output indicator
  - Direct / inverse output
  - Universal static output
  - M8 plug
  - Painted aluminium strong housing

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**Applications:**
- Position control on a moving belt
- Detection of tags on a conveyor
- Detection of “double sheet”
- Mark detection on a translucent film

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**Applications:**
- Control of small parts on a production machine
- Detection of components on a printed circuit
- Presence control of crack in a part
- Level control
- Elimination of background

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**Applications:**
- Break control of a drill on a tool-machine
**MINIATURE SENSOR WITH BACKGROUND SUPPRESSION**

- Reference: PS 989 S
- Adjustable sensing distance: 1.5 to 8 cm
- Supply: 10 to 30 VDC
- Output: PNP ou NPN
- Set-up by precision screw
- Dimensions: 13x32x20 mm

**Applications:**
- Control of position or presence of parts with background suppression
- Detection of object height on a conveyor
- Detection of solid granulates level

**MARKS AND CONTRASTS SENSOR**

- Reference: DCF 966 S
- Détecteur de repères à apprentissage automatique
- Supply: 10 to 30 VDC
- Output: PNP / NPN
- White light spot: ø 1.5 mm
- Very high speed: 20 KHz
- Dimensions: 13x30x60 mm

**Applications:**
- Detection of marks:
  - on packagings
  - in printing machinery
  - detection on difficult access area
  - on label

**HIGH PRECISION COLOUR SENSOR**

- Reference: LC CLARYS
- Detection of 1 to 26 recorded colours
- Supply: 12 / 30 VDC
- Output: PNP
- Teach-in
- Sensing distance 2...70mm depending on fiber

**Applications:**
- Detection of little marks and colored tags
- Quality control:
  - lids colour.
  - presence of labels.
- Detection of coloured wires

**PLASTIC FIBRE OPTIC BRIGHTNESS SENSOR**

- Reference: AFL 966 S
- Supply: 10 to 30 VDC
- Output: PNP / NPN
- Friendly adjustment by +/-
- Adjustable timer
- Dimensions: 13x30x60 mm

**Applications:**
- Functional test of signal lamps on domestic appliances
- Head-lights tests on assembly line

**Applications:**
- Car head-light test on an assembly line

**Applications:**
- Detection of marks on tubes
DIFFUSE REFLECTION MINIATURE SENSOR WITH BACKGROUND SUPPRESSION (LASER EMISSION)

- Reference: PS 929 L1 S
- Reference: PS 929 L2 S
- Sensing distance on adjustable reflector:
  - PS 929 L1 S : 1 to 6 cm
  - PS 929 L2 S : 3 to 11 cm
- Supply: 10 to 30 VDC
- Output: PNP
- Teach-in
- Dimensions: 12x32x20 mm

MULTISENSORS LOGICAL MODULE

- Reference: MC 97
- Sensor connections: 1 to 6
- Supply: 12 to 30 VDC
- Output: PNP or NPN
- Use in mode “AND” or “OR”
- Visualisation of inputs and the output by LEDs
- Dimensions: 25x79x100 mm

COLOUR SENSOR WITH MICROPROCESSOR

- References:
  - LC 2001 (1 colour)
  - LC 2004 (4 colours)
- Choose between 7 sensing fibres:
  - fibre tips from ø1.8 to ø18 mm
- Sensing distance from 2 to 60 mm
- Supply: 24 VDC
- Outputs: PNP / NPN
- Response time: 1 ms or 20 ms according to the mode
- Dimensions: 61x26x125 mm

DETECTEUR MINIATURE DE CONTRASTE (EMISSION LASER)

- Reference: PC 929 LS
- Sensing distance on reflector réglable: 4 to 15 cm
- Supply: 10 to 30 VDC
- Output: PNP
- Teach-in
- Dimensions: 12x32x20 mm

Applications:

- Small pieces control on manufacturing machines with background suppression
- Sensors positioning where space is limited
- Mark detection:
  - on packing
  - on labels
  - on paper films, plastic…
- Sensors positioning where space is limited

Applications:

- Remote control
- Save money on wiring
- PLC connection simplification
- Detection of little marks and colored tags
- Quality control
- Detection of colored wires
- Detection of translucent colored parts
- Sorting out of colored parts
- Detection of one to four recorded colours
- Fibres (see info sheet)
- Focalized beam with FPCF fibre
- Diffuse reflection with FPCP fibre
- Simple and quick set-up for self-teach (large, standard or thin discrimination)
- External input for self-teach (channel1)
- Adjustable timer
- Direct or inverse output
- Keyboard lock
- Universal static output
- Dimensions: 12x32x20 mm
- Miniaturised
- Integrated amplifier
- Detection indication by LED
- Red pulsed visible light
- Laser class 2
- Background suppression
- Direct / inverse output
- Remote teach-in
- Functions lock
- Dirty indicator
- ABS housing
- M8 plug

Detection of marks on packaging paper

Detection of a small object out of a feeding bowl

Verification of the closing strip