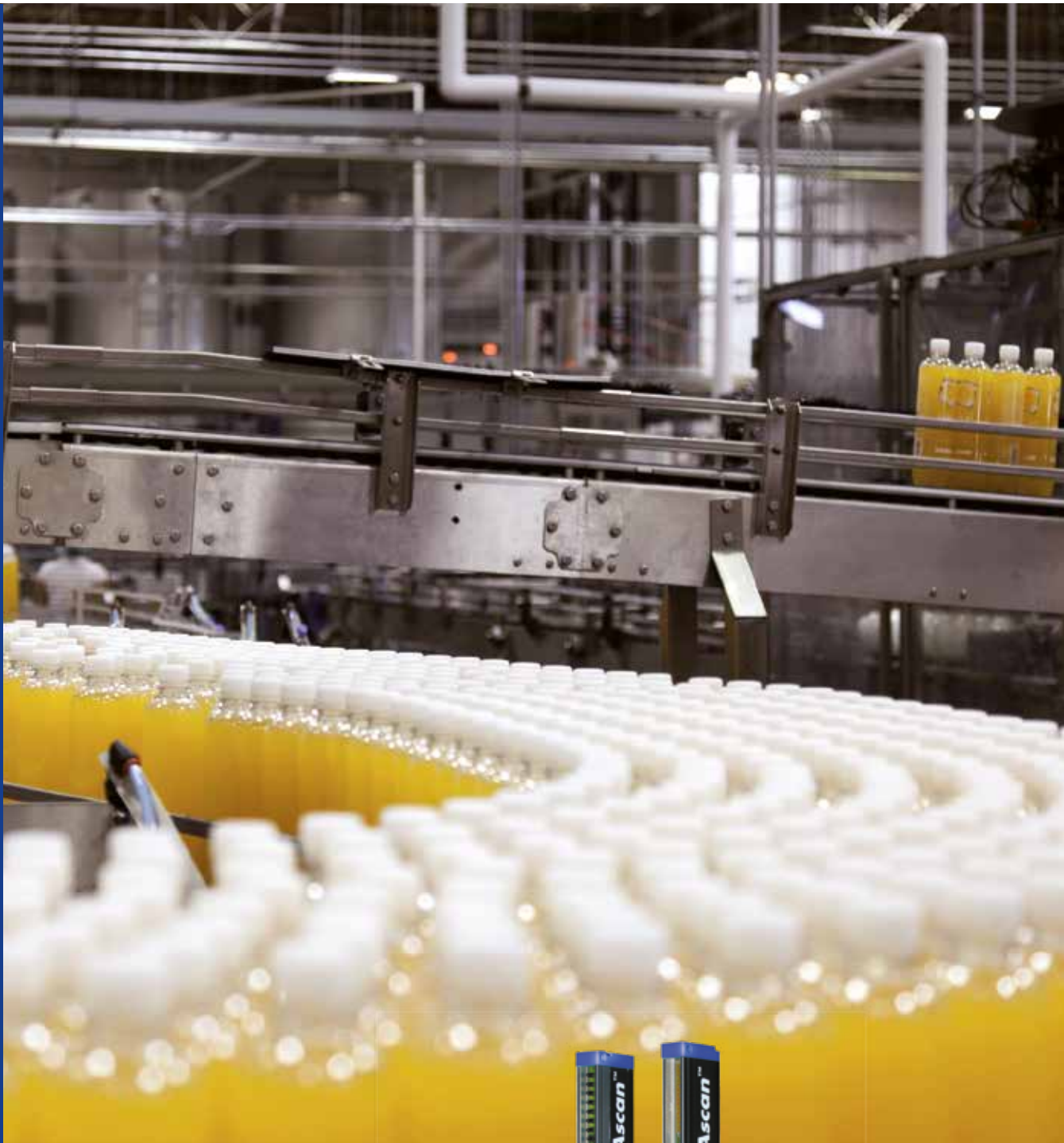


PRODUCT GUIDE



>Sensors

SENSORS & SAFETY

Datalogic has more than 40 years of experience in the sensors and safety sector, developing their first product, a **Photoelectric Sensor**, in 1972. Today, Datalogic is one of the largest manufacturers of sensor and safety products worldwide.

Datalogic is the market leader in Italy for photoelectric sensors and safety light curtains, ranking among the **top-10 manufacturers** in Europe by market share*

Datalogic's **Sensors and Safety** portfolio solves customer applications in **Factory Automation**, specializing in Processing and Packaging machinery, and Automated Material Handling Systems related to Manufacturing Industries such as Automotive, Electronics, Pharmaceutical, Food & Beverage, Paper and Printing, Wood-working, Ceramics, Glass, Textiles etc.

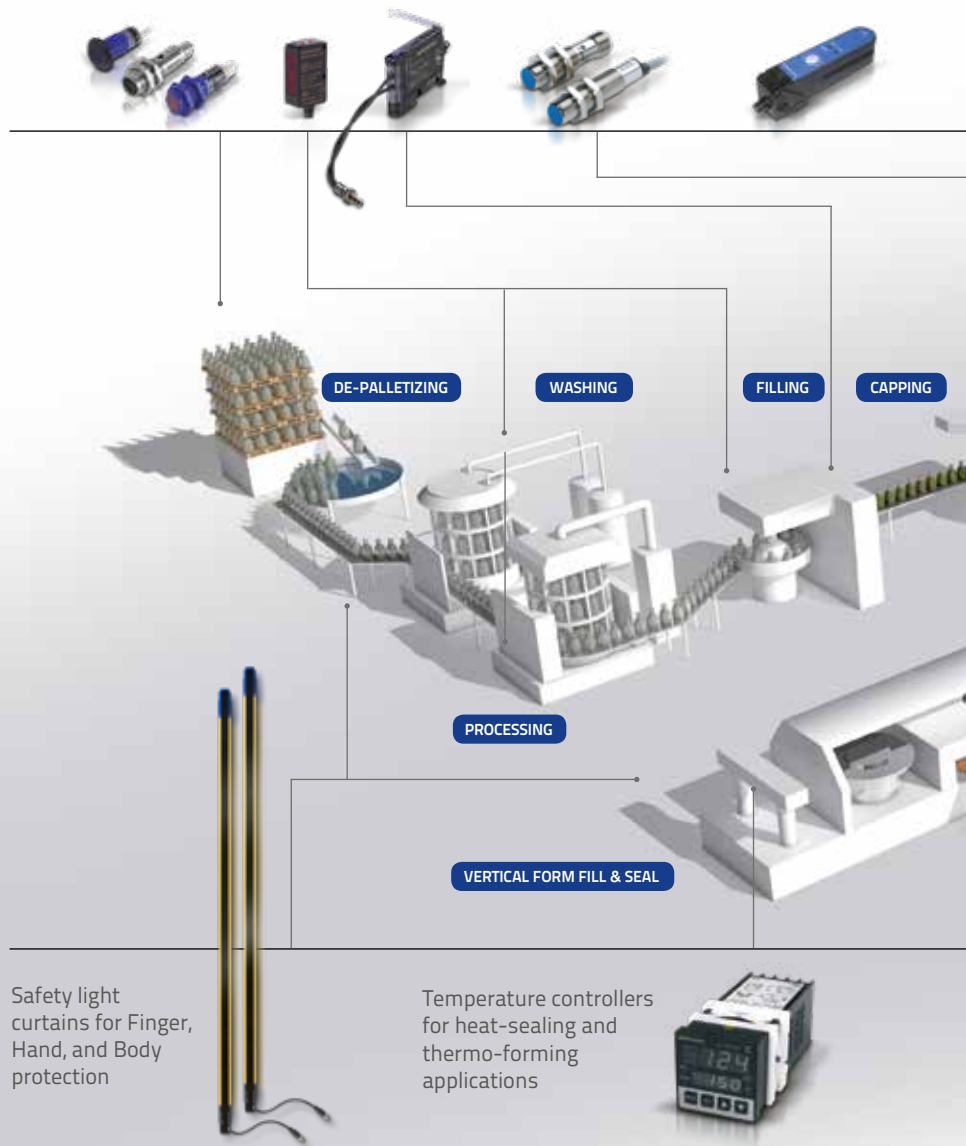
* (source: based on VDC 2010 - 2011)

APPLICATIONS	De-Palletizing	Storage & Retrieval
	Washing	Cartoning
	Filling	Wrapping
	Capping	Vertical Form Fill & Seal
	Labeling	Processing
	Case Packing	
	Stretch-wrapping	
	Palletizing	

Tubular, Miniature and Fiber Optic sensors for object detection

Inductive proximity sensors

Fork sensors for label detection

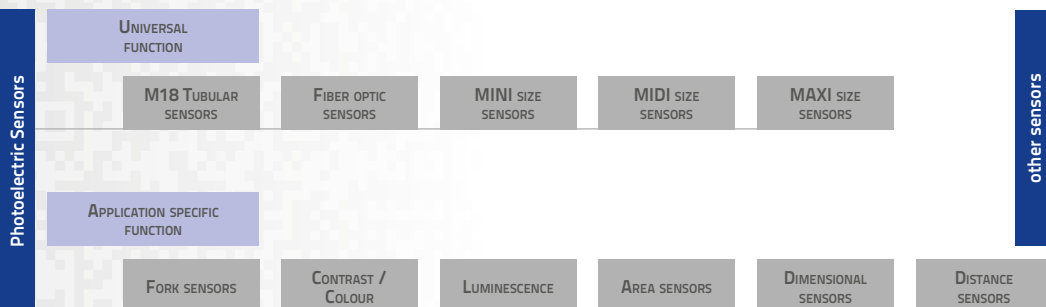


Safety light curtains for Finger, Hand, and Body protection

Temperature controllers for heat-sealing and thermo-forming applications

SENSOR PRODUCTS

SENSORS PRODUCT RANGE



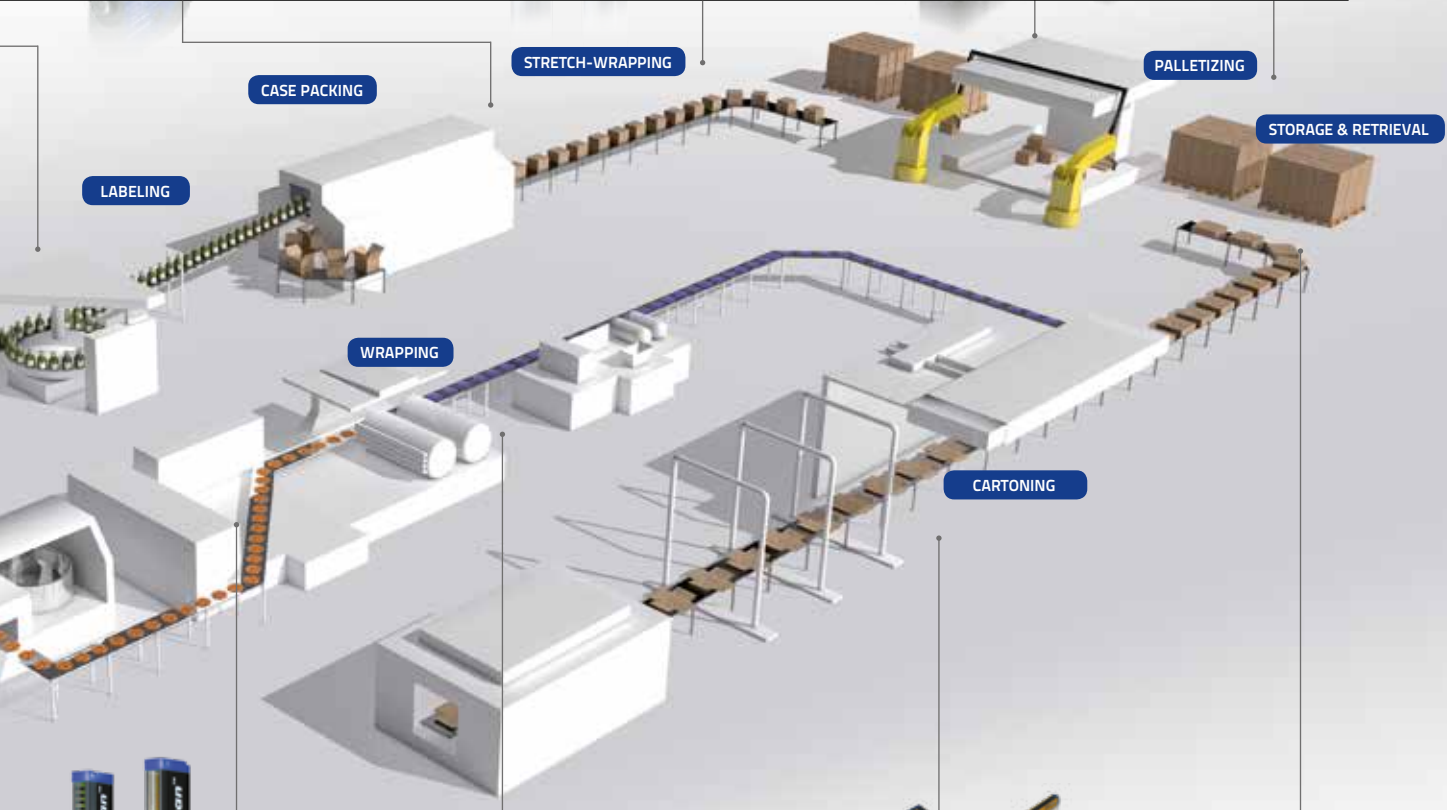
Contrast and Luminescence sensors



Area sensors



Maxi and Compact sensors for object detection



Dimensional sensors for height/width measurement and object positioning



TOF distance sensors for measurement and object positioning



Safety light curtains for body protection with Muting function

SAFETY PRODUCTS

SAFETY PRODUCT RANGE

Safety Light Curtains Type 2 and Type 4

HIGH / LOW RESOLUTION

FINGER PROTECTION

HAND PROTECTION

BODY PROTECTION

PRESENCE CONTROL

BASE / EXTENDED FUNCTIONALITIES

AUTO / MAN RESTART

EXT DEVICE MONITORING

MUTING

OVERRIDE

BLANKING

CASCADABLE

other safety products

Controller
Light beam
Module
Relay unit
Accessories



Subminiature sensors

SM-ALL

The smallest photoelectric sensor with all universal optic functions
Detection of hard to reach objects or in small spaces

TECHNICAL DATA

- Fixed focus proximity 15, 20, 30, 50cm
- Retroreflex 1.5 m and Polarised 1 m
- Through-beam 2 m
- NPN or PNP version with NO-NC outputs
- 4 wires connection with 2m Cable
- IP67 Plastic subminiature case

APPLICATIONS

- Processing and Packaging machinery
- Electronics assembling
- Small appliance and vending machines



Miniature sensors

S3Z

High performance in standardized miniature housing
Replaces larger sensors and fits in limited space in smaller machinery

TECHNICAL DATA

- Diffuse proximity 15 or 70cm
- Background suppression Red LED or Laser 50-300mm
- Polarised RRR 4 m, Coaxial for Trasp. 2m, Laser 10 m
- Through-beam 15 m and Laser 30 m
- 3 wire connection with 2m Cable or M8 connector
- IP67 Plastic miniature case
- M3 threaded holes on the front side

APPLICATIONS

- Processing and Packaging machinery
- Electronics assembling
- Small machinery and access control



Miniature sensors

S45

High performance sensor with teach-in regulation and rugged plastic housing IP69K and Ecolab tested. All-in-one sensor family with LED and Laser emission for easy mounting and installing

TECHNICAL DATA

- RED and Laser emissions
- Precise risk free laser class 1 emission
- Diffused LED proximity 800mm
- Background Suppression 400mm
- Retroreflective Laser 15m / LED 7m
- Through beam Laser 20m / LED 15m
- IP69K housing
- 2m Cable or M8 4 connector version
- PNP or NPN output with remote teach-in input

APPLICATIONS

- Processing and Packaging machinery
- Cosmetic and Pharmaceutical industry
- Electronics assembling
- Conveyor lines, material handling



Fork sensors

SR21/SR23

High-resolution, very fast response time
Execution of precise positioning, applying and printing of labels, even when integrated in fast machinery and processes

TECHNICAL DATA

- Slot width 2mm or 5mm and depth 50mm for normal label or booklet label detection
- Up to 20 μ s response time and 25 kHz switching frequency
- IR LED emission for label detection on translucent reel
- Red/Green LED emission for color mark detection
- Auto-Set for teach-in or dynamic threshold setting
- NPN and PNP outputs with M8 4-pole connector
- Compact and robust metal case with IP65 protection

APPLICATIONS

- Packaging and labeling machinery
- Print and apply systems



Fork sensors

SRX3

High resolution, fast response time
Execution of precise positioning, applying and printing of labels, even with any type/format of labels and bearer tapes, transparent on transparent and metallic ink

TECHNICAL DATA

- Dynamic or static teach models
- Slot size 3mm
- High resolution up to 2mm label gap
- M8 connector with PNP or NPN output
- M12 connector with PNP/NPN output and external teach-in
- Rugged and sturdy aluminium housing

APPLICATIONS

- Detection of transparent, opaque labels, metallic ink label.
- Double sheet detection
- Adhesive surface detection



Contrast sensors

TL46

High resolution, White, Red or RGB emission, very fast response time
Thanks to its new Low jitter models performs very precisely per in packaging machinery and synchronization based mark detection, even when used in extremely fast processes

TECHNICAL DATA

- Operating distance 6-12mm (80mm with acc. lens)
- Bright light emission with Red, White, or RGB LED
- Mark/Background automatic, manual and dynamic setting
- Trimmer or Teach-in setting with 4 digit display version
- Very fast switching frequency 15, 20, 25, 30 or 50 kHz
- Very high precision model with less than 7 μ s jitter
- Configurable NPN/PNP and 0-5V analogue output
- Standard metal case with IP67 protection and IP69K (S45W)

APPLICATIONS

- Packaging and labeling machinery
- Food & Bev., Cosmetic, Pharma industry
- Printing machinery



Miniature sensors

S100

Universal Miniature Photoelectric Sensor

Cost saving: best price on the market

Space saving: standard miniature dimension and universal mounting

Time saving: quick and easy mechanical and electrical installation

TECHNICAL DATA

- Through beam 12m
- Retroreflective 7m
- Polarized retroreflective 3m and 5,5m
- Diffuse proximity 30 and 50cm
- Fixed focus 70mm
- Background suppression 100mm
- NPN or PNP output with L/D input
- 2m cable or M8 connector version
- IP67 plastic miniature case
- M3x4 slotted holes on the back side
- M3 threaded holes on the front side

APPLICATIONS

- Processing and Packaging machinery
- Conveyor lines, material handling
- Automated warehousing



Compact sensors

S8

Extremely high performance
Solves difficult detection applications (i.e. target objects that are too small, too fast, too clear, too shiny)

TECHNICAL DATA

- Background suppression 50-300mm, Laser 20-200mm
- Background suppression for transparent objects with reflective background
- Polarised retroreflective 5m, Laser 10m, Coaxial for transparent objects 2m
- RGB Contrast sensor 6-12mm, 25 kHz switch. freq.
- UV Luminescence sensor 10-30mm, 2kHz switch. freq.
- NO-NC outputs with 2m Cable or M8 connector
- IP67 Plastic case and IP69K stainless steel version
- Ecolab and Diversey certification

APPLICATIONS

- Processing and Packaging machinery
- Food and Beverage Industry
- Cosmetic and Pharmaceutical industry
- Electronics assembling



Compact sensors

S62

50x50 Standard universal sensor with improved performance and pricing
Standardization of the same 50x50mm housing, mounting holes, installation and wiring for all optic functions

TECHNICAL DATA

- Diffuse proximity 90 or 200cm, Laser 90cm
- Background suppression 30, 60, 120, 200cm, Laser 15, 35cm
- Retroreflex 13 m, Polarized 8 m, Laser 20 m
- Through beam 25 m
- 10-30 Vdc version with NO-NC, NPN or PNP output
- Multivoltage 24-240Vac/24-60Vdc with Relay output
- 2m cable or M12 rotatable connector

APPLICATIONS

- Processing and packaging machinery
- Conveyor lines, material handling
- Automotive assembly, intra-logistics



Luminescence sensors

LD46

UV high power emission LED with high sensitivity
Precise packaging machinery synchronization or material sorting and selection based on luminescent "invisible" mark detection

TECHNICAL DATA

- High power UV light emission at 375 nm wavelength
- Operating distance 10-20, 20-40, or 30-50mm
- Teach-in setting and manual threshold adjustment
- 5 segments bar graph for sensitivity level indication
- Fast response time 250µs and switching freq. 2kHz
- NPN and PNP outputs and 0-5 V analogue output
- Standard metal case with IP67 protection

APPLICATIONS

- Packaging and labeling machinery
- Food, Cosmetic and Pharma industries
- Ceramic tiles selection and sorting
- Wood working



Area sensors

AS1/DS1

High resolution area sensor
Detection and measurement of small objects crossing the area, even in a random positions

TECHNICAL DATA

- AS1 Area Sensor for small object detection
- DS1 Light Array for small object measurement
- Minimum object detection Ø 6mm or flat 0.2x75mm
- Minimum measurement resolution 7mm or 4mm
- Heights ranging from 100mm (16 beams) to 300mm (48 beams)
- Standard distance 2m and Long distance up to 4m
- PNP switching output and 0-10 V analog output

APPLICATIONS

- Processing and Packaging machinery
- Food, Cosmetic and Pharma industries
- Electronics and mechanical assembly
- Conveyor lines and sorting systems



Dimensional sensors

DS2

Dimensional sensor with extended controlled heights
Set controls based on height or width measurement and object positioning

TECHNICAL DATA

- Measurement light array with IR parallel beams
- Controlled heights from 150 to 2400mm (n x 150mm)
- Standard resolution 25mm, high resolution 6mm
- Standard distance 5 m and Long distance 10m
- PNP switching output with configurable function
- 0-10 V analog output with configurable function
- RS-485 or Ethernet port and Graphic User Interface

APPLICATIONS

- Secondary Packaging eg. cartons
- Automated vertical warehouses
- Automotive assembly eg. paint shop
- Non-LFT measurement in logistics



Distance sensors

S65-M

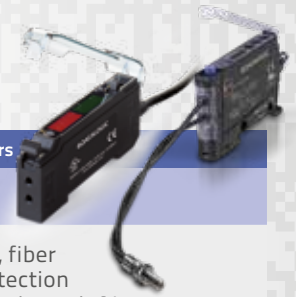
Cost Effective Long Range Background Suppressor with Time Of Flight (TOF) technology and Infrared emission



Distance sensors

S85

Long distance sensor based on TOF Accurate controls based on a target object distance and improved cost saving



Fiber Optic Amplifiers

S7/S70

High resolution, fiber optic sensor detection of small objects through fiber optic cable, even in confined spaces and high temperature environments. Sensor can be installed at distance far from detection object

TECHNICAL DATA

- Long Range background suppression detection up to 5m
- Cost effective solution for precise and reliable detection
- Risk-free Infrared LED emission and embedded green LED pointer
- Two independent fully programmable outputs
- NPN/PNP or IO-Link connection models
- Rugged plastic housing in compact 50x50x24 mm format

APPLICATIONS

- Presence of all medium and large sized objects on conveyors
- Critical object detection in front of problematic background
- Positioning tasks in palletizing
- Position limiter for deck and robot in automotive manufacturing
- Collision prevention limit switch for AGV applications
- Check filling level for liquid and objects

TECHNICAL DATA

- Time Of Flight (TOF) sensor with Red Laser emission
- Detection and measurement range up to 10 or 20m
- 1mm resolution/repeatability and 7mm accuracy
- 4-20mA or 0-10V scalable analog output and 2 push-pull digital outputs
- RS485 serial interface
- Built-in graphic display and push buttons
- Standard M12 8-poles connector
- IP67 compact metal housing

APPLICATIONS

- Packaging end of line
- Paper reel unwinding control
- Automated warehousing
- Trans-elevator and crane positioning
- Automotive assembling lines
- Non-LFT measurement in logistics

TECHNICAL DATA

- Diffuse fiber optics up to 500mm
- Through beam fiber optics up to 1800mm
- Red or White LED emission for contrast detection
- Double 4-digit display
- 4-digit display and teach-in or trimmer setting
- 10 bits (1024 points) or 12 bits (4096 points) resolution
- Switching Freq. 1kHz, Fast 5kHz, Ultra-fast 10kHz and 50kHz
- NPN or PNP output with 2m cable or M8 connector
- I/O link connection

APPLICATIONS

- Processing and Packaging machinery
- Electronics assembly
- Pharmaceutical industry



Maxi sensors

S300-PA/PR

Heavy duty, multi-voltage sensors with terminal block and internal relay Durability for integration in outdoor applications and harsh environments



M18 tubular sensors

S15

Short barrel and IP69K protection plastic or stainless steel case Space and cost saving, performs in harsh environments including in water-jets and aggressive cleaning agents



M18 tubular sensors

S50/S51

Standardization of the same M18 housing with mounting holes, installation and wiring for all optic functions. Further cost saving with S51 basic line

TECHNICAL DATA

- Diffuse proximity 2 m (-PA), 5 m (-PR)
- Background suppression 2 m (-PA), 2.5 m (-PR)
- Polarized retroreflex 7 m (-PA), 22 m (-PR)
- Through beam 50 m (-PA), 60 m (-PR)
- 10-30 Vdc version with NPN or PNP outputs
- Multi-voltage with Relay output and terminal block
- Configurable timing function for turn-ON/OFF delay
- IP67 plastic case, fiber glass reinforced

APPLICATIONS

- End-of-line packaging, palletizers
- Outdoor or indoor gates control
- Manufacturing plants

TECHNICAL DATA

- Diffuse proximity 10, 35, or 100cm, fix focus 5cm
- Background suppression 40-120mm
- Retroreflex 5 m, Polarised 4m, for Transparent 1m
- Through beam 20m
- L/D input, 2m Cable, M12 connector, or pig-tail vers.
- IP69K Plastic or Stainless steel case
- Johnson Diversey certification for industrial detergents

APPLICATIONS

- Processing and Packaging machinery
- Assembly and conveyor lines

TECHNICAL DATA

- Diffuse proximity 10, 40, or 70cm, and Laser 35cm
- Fix-focus 100mm and Background suppr. 50-100mm
- Polarised RRX 4m, Laser 16m, for Transparent 1m
- Through-beam 20m and Laser 60m
- Contrast sensor 10mm, Luminescence sensor 20mm
- 2m Cable or M12 connector with NO-NC outputs
- Axial or Radial optics, Plastic flat or Metal M18 case

APPLICATIONS

- Processing and Packaging machinery
- Assembly and conveyor lines
- Automatic material handling
- Automated warehousing



Incremental encoders

ENC41/ENC58

Versatile and flexible incremental encoders with compact and standard dimensions.
Hollow or solid shaft and universal output circuit

TECHNICAL DATA

- Plastic or aluminium housing $\varnothing 41\text{mm}$ and $\varnothing 58\text{mm}$
- Hollow or solid shaft
- Resolution from 1 to 10000 PPR
- 1.5m cable connection
- ABO/ABO output signals
- Smart Push-Pull & Line-Drive output
- Power supply 5 – 30 Vdc

APPLICATIONS

- Working and assembly lines
- Packaging machinery
- Light conveyors

Programmable incremental encoders

IEP58

Programmable incremental encoder reduces storage cost and downtime with to customer specific programming.

TECHNICAL DATA

- Standard housing $\varnothing 58\text{mm}$
- Resolution from 1 to 16384 PPR
- 1.5m cable connection
- ABO/ABO output signals
- Smart Push-Pull & Line-Drive output
- Power supply 5 – 30 Vdc

APPLICATIONS

- Automated machinery
- Conveyor lines



Absolute encoders

AST58/AMT58

Compact optical single and multi-turn encoder
Extremely high accuracy
Serial interface SSI up to 25 bit
Modular fieldbus ProfiBus, Profinet; EtherCat, DeviceNet, CanOpen up to 30 bit.

TECHNICAL DATA

- Aluminium anticorrosion metal case $\varnothing 58\text{mm}$
- Solid shaft $\varnothing 6$ or 10mm , hollow shaft $\varnothing 15\text{mm}$
- M12, M23, or 1.5m cable connection
- Power supply 7.5 – 34 Vdc

APPLICATIONS

- Motion control
- Automated machinery
- Length measurement/positioning



Ultrasonic sensor

US

Distance measurement
Accurate positioning or distance control, immune to object color or light reflection

TECHNICAL DATA

- Square miniature or M18 background suppression with range 5 – 50cm and through beam up to 60cm
- M30 with range 0.2 – 2 m and min object 10mm
- M50 with range 0.2 – 8 m and min object 20mm
- Teach-in push-button and remote teach input
- NPN and PNP switching outputs for object detection
- 0–10 V or 4 – 20 mA analog out for distance measure
- High resolution to 1mm or 0.1% of distance range

APPLICATIONS

- Packaging machinery
- Beverage and bottling plants
- Paper reel unwinding control



Inductive proximity

IS

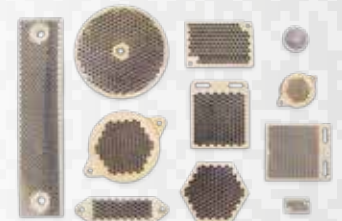
Non-contact detection
Cost effective and reliable detection of any metal part

TECHNICAL DATA

- Standard proximity M4, M5, M8, M12, M18, M30
- Double range (i.e. M12 4mm, M18 14mm, M30 20mm)
- Unshielded or shielded models for flush mounting
- Nickel brass or stainless steel short and long housing
- Ecolab and Diversey certification for industrial detergents
- Multi-voltage, Metal face, Weld field immune models
- NO/NC, NPN or PNP output and programmable versions.

APPLICATIONS

- Processing and Packaging machinery
- Assembling and conveyor lines
- Metal working and machine tools



- High efficiency reflectors for longer operating distance
- Micro-prismatic reflectors for high resolution detection
- High temperature, Extra-flexible, High efficiency fibers
- Fiber optics light array, Fiber units with focusing lens
- Cables with axial or right angle M8 or M12 connectors
- Plastic support and metal bracket for sensor mounting



www.datalogic.com

Rev. 02, 06/2016



9C514800E