**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, Woodworking, Ceramics, Glass, Textiles etc.

*(source: based on VDC 2010 - 2011)*

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### SENSORS PRODUCT RANGE

**SENSORS**

- Universal function
  - M18 TUBULAR SENSORS
  - FIBER OPTIC SENSORS
  - MINI SIZE SENSORS
  - MIDI SIZE SENSORS
  - MAXI SIZE SENSORS

- Application specific function
  - FORM SENSORS
  - CONTRAST / COLOUR
  - LUMINESCENCE
  - AREA SENSORS
  - DIMENSIONAL SENSORS
  - DISTANCE SENSORS

**OTHER SENSORS**

- Inductive
  - Ultrasonic
- Capacitive
- Temperature
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
OVERIDE
BLANKING
CASCADEABLE

Controller
Light beam
Module
Relay unit
Accessories

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
**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 1.5m and Polarised 1m
- Through-beam 2m
- 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
- Polarisated RRX 4m, Coaxial for Trasp. 2m, Laser 10m
- Through-beam 15m and Laser 30m
- 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
- 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**

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

**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 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 7us 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
## S8

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

### 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

- 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, 25kHz switch freq.
- UV Luminescence sensor 10-30mm, 2kHz switch freq.
- NO-NC outputs with 2m Cable or M8 connector
- IP 67 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

## 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

### Miniature sensors

**S100**

- Through beam 12m
- Retrospective 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
- IP67 miniature plastic case
- M3x4 slotted holes on the back side
- M3 threaded holes on the front side

### TECHNICAL DATA

- Through beam 12m
- Retrospective 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
- IP67 miniature plastic 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

## AS1/DS1

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

### Area sensors

**AS1** Area Sensor for small object detection
**DS1** Light Array for small object measurement

### TECHNICAL DATA

- 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
- Ceramic tiles selection and sorting
- Wood working

## LD46

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

### Luminescence sensors

**LD46**

- 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 and 0-5 V analogue output
- Standard metal case with IP67 protection

### 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 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

## DS2

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

### Dimensional sensors

**DS2**

- 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

### 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**

**S300-PA/PR**

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

**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 B-places connector
- IP67 compact metal housing

**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
- Check filling level for liquid and objects

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**Distance sensors**

**S85**

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

**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 B-places connector
- IP67 compact metal housing

**APPLICATIONS**

- Processing and Packaging machinery
- Electronics assembly
- Pharmaceutical industry

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**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**

- 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
- Assembly and conveyor lines
- Automatic material handling
- Automated warehousing

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**Distance sensors**

**S65-M**

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

**APPLICATIONS**

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

**ENC41/ENC58**

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

**APPLICATIONS**
- Working and assembly lines
- Packaging machinery
- Light conveyors

**TECHNICAL DATA**
- Plastic or aluminium housing Ø41mm and Ø58mm
- Hollow or solid shaft
- Resolution from 1 to 10000 PPR
- 1.5m cable connection
- AB0/AB0 output signals
- Smart Push-Pull & Line-Drive output
- Power supply 5 – 30 Vdc

**Programmable incremental encoders**

**IEP58**

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

**APPLICATIONS**
- Automated machinery
- Conveyor lines

**TECHNICAL DATA**
- Standard housing Ø58mm
- Resolution from 1 to 16384 PPR
- 1.5m cable connection
- A0/B0 output signals
- Smart Push-Pull & Line-Drive output
- Power supply 5 – 30 Vdc

**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.

**APPLICATIONS**
- Motion control
- Automated machinery
- Length measurement/positioning

**TECHNICAL DATA**
- Aluminium anticorodal metal case Ø58mm
- Solid shaft Ø 6 or 10mm, hollow shaft Ø15mm
- M12, M23, or 1.5m cable connection
- Power supply 7.5 – 34 Vdc

**Sensors accessories**

- 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