PRODUCT GUIDE

>Sensors & Safety

⊕DATALOGIC

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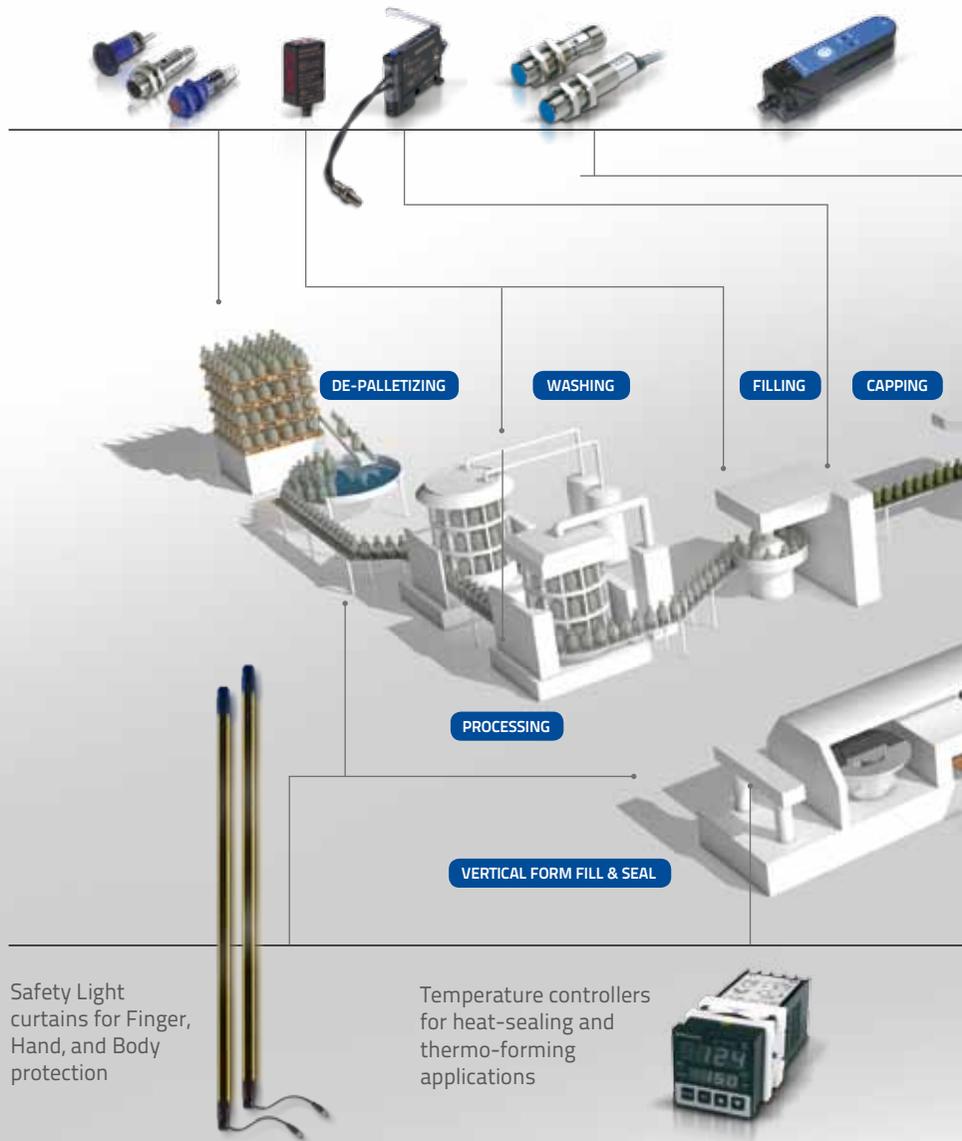
* (source: based on VDC 2010 - 2011)

Tubular, Miniature and Fiber Optic sensors for object detection

Inductive proximity sensors

Fork sensors for label detection

DE-PALLETIZING   WASHING   FILLING   CAPPING
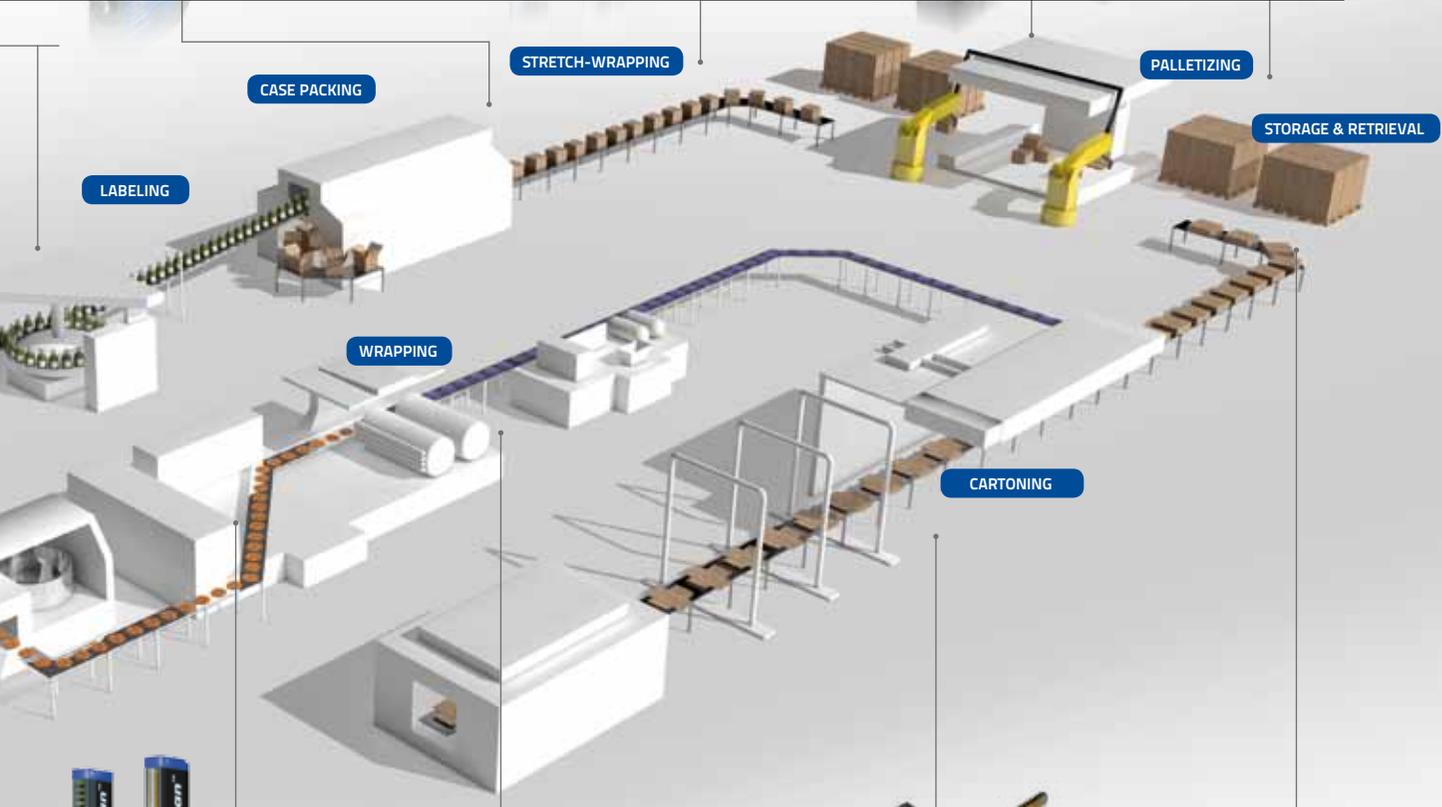
PROCESSING

VERTICAL FORM FILL & SEAL

APPLICATIONS

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

Safety Light curtains for Finger, Hand, and Body protection

Temperature controllers for heat-sealing and thermo-forming applications

SENSOR PRODUCTS

SENSORS PRODUCT RANGE

Photoelectric Sensors

Universal function				
M18 Tubular sensors	Fiber optic sensors	MINI size sensors	MIDI size sensors	MAXI size sensors

Application specific function				
Fork sensors	Contrast / Colour	Luminescence	Area sensors	Dimensional sensors	Distance sensors

other sensors

- Inductive
- Ultrasonic
- Capacitive
- Temperature

Contrast and Luminescence sensors

Area sensors

Maxi and compact sensors for object detection

CASE PACKING

STRETCH-WRAPPING

PALLETIZING

LABELING

STORAGE & RETRIEVAL

WRAPPING

CARTONING

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						other safety products	Controller
	FINGER PROTECTION	HAND PROTECTION	BODY PROTECTION	PRESENCE CONTROL				Light beam
								Module
	BASE / EXTENDED FUNCTIONALITIES							Relay unit
	AUTO / MAN RESTART	EXT DEVICE MONITORING	MUTING	OVERRIDE	BLANKING	CASCADABLE		Accessories

Subminiature sensors

SM-ALL

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

TECHNICAL DATA

- Fixed focus proximity 15, 20, 30, 50 cm
- 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
- IP 67 Plastic subminiature case

APPLICATION

- 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 70 cm
- Background suppression Red LED or Laser 50-300 mm
- Polarised RRX 4 m, Coaxial for Trasp. 2m, Laser 10 m
- Through-beam 15 m and Laser 30 m
- 3 wires connection with 2m Cable or M8 connector
- IP 67 Plastic miniature case
- Fixing holes on front side (Far-East standard)

APPLICATION

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

Miniature sensors

S40/S41

Product portfolio ranges from the cost effective S41 up to the high performing S40 in mini size cases
Space and cost saving, even with high performance models

TECHNICAL DATA

- Diffuse proximity 35 cm and Laser 15 cm
- Background suppression 15-100 mm Laser 20-60 mm
- Polarised RRX 2.5 m, Coaxial for Trasparent 1 m
- Through-beam 6 m
- NO-NC outputs with 2m Cable or M8 connector
- IP 67 Plastic miniature case
- Fixing holes on back side (European standard)

APPLICATION

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

Fork sensors

SR21

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

TECHNICAL DATA

- Slot width 2mm and depth 50 mm for label detection
- Very fast 20 μs response time and 25 kHz switch. freq.
- IR LED emission for label detection on translucid reel
- Red/Green LED emission for colour mark detection
- Auto-Set for teach-in or dynamic threshold setting
- NPN and PNP outputs with M8 4-poles connector
- Compact and robust metal case with IP65 protection

APPLICATION

- Packaging and labelling machinery
- Print and apply systems

Contrast sensors

TL46

High resolution, white or RGB emission, very fast response time
Performs precisely in packaging machinery and synchronization based mark detection, even when used in extremely fast processes

TECHNICAL DATA

- Operating distance 6-12 mm (80 mm with acc. lens)
- Bright light emission with Red, White, or RGB LED
- Mark/Bkgd automatic, manual and dynamic setting
- Trimmer or Teach-in setting with 4 digit display version
- Very fast switching frequency 15, 20 or 30 kHz
- Configurable NPN/PNP and 0-5 V analogue output
- Standard metal case with IP67 protection

APPLICATION

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

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 30-50 mm
- Teach-in setting and manual threeshold adjustment
- 5 segments bar-graph for sensitivity level indication
- Fast response time 250 μs and switching freq. 2 kHz
- NPN and PNP outputs and and 0-5 V analogue output
- Standard metal case with IP67 protection

APPLICATION

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

Compact sensors
S8

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

TECHNICAL DATA

- Background suppression 50-300 mm, Laser 20-200 mm
- Background suppr. for Transparent objects with reflective background
- Polarised RRX 5m, Laser 10 m, Coaxial for Transp. 2 m
- RGB Contrast sensor 6-12 mm, 10 kHz switch. freq.
- NO-NC outputs with 2m Cable or M8 connector
- IP 67 Plastic case and IP69L stainless steel version
- Ecolab and Diversey certification industrial detergents

APPLICATION

- 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 50x50 mm
housing, mounting holes, installation,
wiring, for all optic functions

TECHNICAL DATA

- Diffuse proximity 90 or 200 cm, Laser 90 cm
- Background suppr 30, 60, 120, 200 cm, Laser 15, 35 cm
- 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

APPLICATION

- Processing and Packaging machinery
- Conveyor lines, Material Handling
- Automotive assembly, intra-logistics

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

TECHNICAL DATA

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

APPLICATION

- Packaging end of line, palletizers
- Outdoor or indoor gates control
- Manufacturing plants

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 6 mm or flat 0.2x75 mm
- Minimum measurement resolution 7 mm or 4 mm
- Heights ranging from 100 mm (16 beams) to 300 mm (48 beams)
- Standard distance 2 m and Long distance up to 4 m
- PNP switching output and 0-10 V analog output

APPLICATION

- Processing and Packaging machinery
- Food, Cosmetic and Pharma industries
- Electronics and mechanical assembling
- 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 2400 mm (n x 150 mm)
- Standard resolution 25 mm, high resolution 6 mm
- Standard distance 5 m and Long distance 10 m
- PNP switching output with configurable function
- 0-10 V analog output with configurable function
- RS-485 or Ethernet port and Graphic User Interface

APPLICATION

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

Sensori di distanza
S80/81

Long distance sensor based on TOF
Accurate controls based on a target
object distance, and improved cost
saving with S81 Line

TECHNICAL DATA

- Time Of Flight (TOF) sensor with Red Laser emission
- Range on target 0.3 - 7 m (S80) or 0.3 - 4 m (S81)
- Range on reflector 0.3 - 20 m or 0.3 - 100 m (S80)
- Repeatibility <5 mm on 7 m (S80), 4 mm on 4 m (S81)
- NPN or PNP out, 4-20 mA analog output, RS-485 (S80)
- NPN or PNP out, 0-10 V analog output (S81)
- Teach-in setting and 4-digit display (S80 only)

APPLICATION

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

M18 tubular sensors

S15

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

TECHNICAL DATA

- Diffuse proximity 10, 35, or 100 cm, Fix focus 5 cm
- Background suppression 40-120 mm
- Retroreflex 5 m, Polarised 4 m, for Trasparent 1m
- Through-beam 20 m
- L/D input, 2m Cable, M12 connector, or pig-tail vers.
- IP 69K Plastic or Stainless steel case
- Johnson Diversey certification for industrial detergents

APPLICATION

- Processing and packaging machinery
- Assembling and conveyor lines

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

APPLICATION

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

Fiber Optic Amplifiers

S7

High resolution,
fiber optic sensor detection of small objects through fiber optic cable, even in confined spaces and high temperature environments. Installation of the sensor far from detection object

TECHNICAL DATA

- Diffuse fiber optics 25, 50, 100 mm
- Through-beam fiber optics 75, 150, 300 mm
- Red or White LED emission for contrast detection
- 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
- NPN or PNP output with 2m cable or M8 connector

APPLICATION

- Processing and Packaging machinery
- Electronics assembling
- Pharmaceutical industry

Ultrasonic sensor

US

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

TECHNICAL DATA

- M18 with range 3 - 30 cm and min object 5 mm
- M30 with range 0.2 - 2 m and min object 10 mm
- M50 with range 0.2 - 8 m and min object 20 mm
- 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 1 mm or 0.1% of distance range

APPLICATION

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

Inductive proximity

IS

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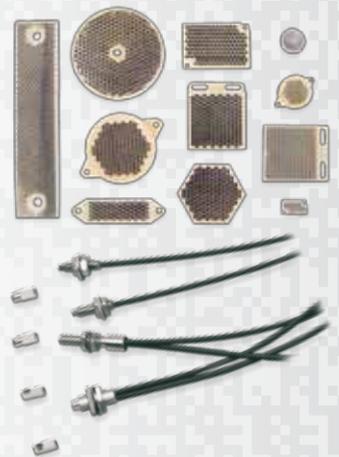Cost effective and reliable detection of any metal part

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 industrial detergents
- Multi-voltage, Metal face, Weld field immune models
- NO/NC, NPN or PNP output and programmable vers.

APPLICATION

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

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

Safety Light Curtains
SG2/SG4 BASE LINE

Finger and hand presence safety detection with basic functions
High reliability, easy installation and alignment, improved cost saving

TECHNICAL DATA

- Safety Type 2 (Pl=d, SIL2); Safety Type 4 (Pl=e, SIL3)
- Resolution Finger 14mm; Hand 30mm; Pres. 50/90mm
- Controlled heights from 150 to 1800mm (n x 150mm)
- Operating distance: Finger 6m; Hand 19m; Pres. 9/19m
- Auto/Manual restart; EDM; Anti-interference coding
- Easy and cost effective standard M12 5-pole connector

APPLICATION

- Automatic machinery
- Metalworking, Woodworking
- Manufacturing (textile, ceramics, etc)
- Material handling, assembling lines

Safety Light Curtains
SG4 PROGRAMMABLE

Finger and hand safety detection with programmable functions
Extended flexibility that fits a diverse range of machine needs, with remote configuration or monitoring and configuration cloning features

TECHNICAL DATA

- Programmable Safety Light Curtain Type 4 (Pl=e, SIL3)
- Resolution: Finger 14 mm; Hand 30 mm
- Controlled heights from 300 to 1800mm (n x 150mm)
- Operating distance: Finger 7m; Hand 20m
- Compact; No dead zone; up to 3 cascadable units
- Fully programmable: Auto/Man restart, EDM, coding, Muting (T/L, total/partial, with/without timeout, etc.), Fixed/floating blanking; reduced resolution function
- Ethernet Port, SG Dongle and Graphic User Interface

APPLICATION

- Processing and packaging machines
- Automotive, metalworking, presses
- Manufacturing assembly lines

Safety Light Curtains
SG BODY COMPACT

Body safety protection and perimeter access control
High reliability, easy installation and alignment, improved cost savings

TECHNICAL DATA

- 35x40 mm standard compact profile
- 2, 3, 4 Beams for Body protection and access control
- Controlled heights 500, 800, 900, 1200 mm
- Long operating distance up to 50 m
- Dip-switch configuration of Auto/Man, EDM, Coding
- Muting version with L or T integrated arms and lamp
- Easy and cost effective standard M12 connectors

APPLICATION

- Light Palletizer/de-palletizers
- Conveyor lines
- Automated warehousing
- Manufacturing lines

Safety Light Curtains
SG BODY BIG

Body safety protection and perimeter access control
Robust product with high reliability and easy installation

TECHNICAL DATA

- 52x56mm profile with improved mechanical resistance
- 2, 3, 4 Beams for Body protection and access control
- Controlled heights 500, 800, 900, 1200mm
- Longer operating distance 60m
- Dip-switch configuration of Auto/Man, EDM, Coding
- Muting version with integrated arms and top-lamp
- Reflector version with active unit and passive unit

APPLICATION

- Palletizing/de-palletizing areas
- Automotive, robotized lines
- Automated storage and retrieval
- Automated warehousing
- AGV and Forklift area protection

Safety Controller
SG BWS

Body safety protection
 and perimeter access control
Cost effective, Flexible safety layout and system configuration

TECHNICAL DATA

- Configurable safety control units type 4 (Pl=e, SIL3)
- Dip-switch configuration of Auto/Man restart, EDM
- SG-BWS-T4-MT with single or double muting function
- Controlling 2 light curtains or 1-4 safety light beams:
- S5 operating distance 0-8m, Laser 0-40m
- S300 operating distance 0-40m
- Double PNP output or SPST Relay 250Vac/24Vdc 5A

APPLICATION

- Light Palletizer/de-palletizers
- Conveyor lines
- Automated warehousing
- Manufacturing lines

SAFETY ACCESSORIES

- Mirror
- Protective stand
- Protective slits
- Safety module
- Safety relay
- Muting box
- Muting arm
- Muting lamp
- Laser pointer
- Brackets

◆DATALOGIC

www.datalogic.com