Dragon™ reader series

Industrial Hand-Held Laser Scanners

FEATURES

Dragon™ Desk:

- 2 meter drop resistance
- 3 optics available
- Man/machine interface: high tone beeper and strong illuminating LEDs

Dragon™ Mobile:

- Several models available:
  - With or without display
  - High Performance or Long Range optics system
  - 433MHz or 910MHz radio systems
- Point-to-Point & Multipoint transmission
- 100% compatible with STAR-System™
- 100% compatible with DLL6xxx-R
- Protective case and Desk/Wall holder included

APPLICATIONS

- Work-in-progress control
- Warehouse management
- Shipping and receiving control
- Cash & carry retail applications
- Fork lifts
- General use in harsh environments

GENERAL DESCRIPTION

Datalogic renews its range of industrial laser scanners introducing the **Dragon™** family: **Dragon™ Desk** and **Dragon™ Mobile**. Based on the same rugged and reliable mechanics of the well-established DLL6000 series, they have been completely renewed inside. Robustness and ergonomics, the main driver of our original project, remain unsurpassed: clearly audible beeper and bright "good read" LEDs for areas where noise levels are normally high; the aim mode, which helps point to the right code, has now been extended to the whole **Dragon™** family. Optical parts are completely suspended on shock absorbers and a careful choice of the body materials, such as the co-moulded rubber, protect the **Dragon™** from damage due to "falls".

New enhanced architecture, based on a M16 high-speed microprocessor, enables exceptional performance for promptness and reading speed of standard codes as well as the ability to read poorly printed and damaged codes. Puzzle Solver Technology™, a patent from Datalogic, adds further strength to the **Dragon™** powerful engine.

In all applications where mobility is a value, the new **Dragon™ M** represents the key to increase productivity and flexibility in the working area. **Dragon™ M** communicates through a low power, licence free radio in the 433 Mhz band (910 Mhz for USA version) and allows bi-directional communication between the base station and the host. **Dragon™ M** also includes a display and a 3 push-button keypad. Thanks to these features, the operator can receive information from the host, actively interact with the central system and visualise the code read. The cordless system offers scalable solutions to solve simple applications and complex projects:

- Point to point: each gun is associated with its own base station;
- Multipoint: many guns (up to 32) transmit data to one base station;
- Network: to cover a wide area, connecting up to 16 bases and 512 guns in automatic roaming simultaneously working.

Dragon™ M is 100% compatible with STAR-System™, the new Datalogic RF narrow band solution for mobile applications that provides the widest family of narrow band devices on the market.

DATALOGIC

DRAGON™ M, CONFIGURATIONS AND COMMUNICATION

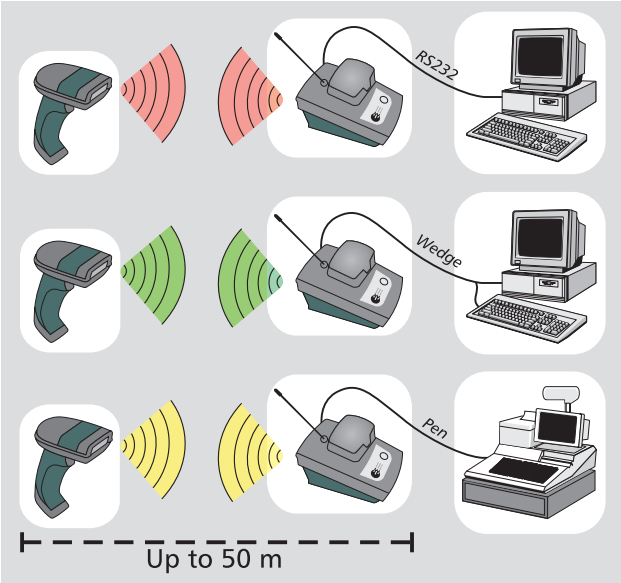


Fig. 1 - Dragon™ M point-to-point connection

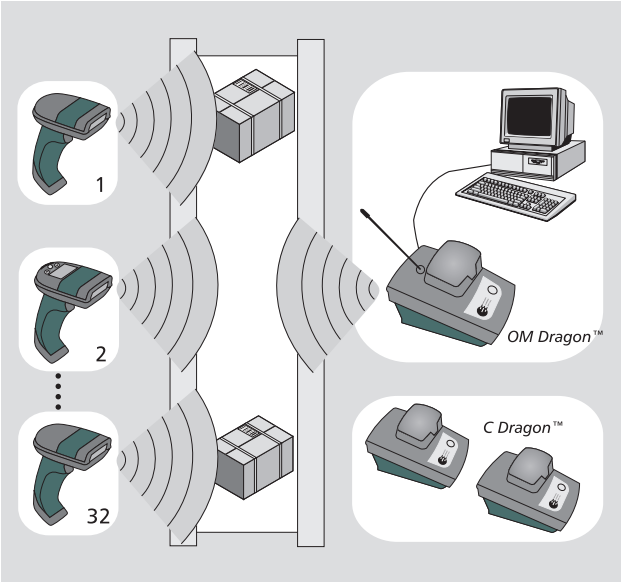


Fig. 2 - Dragon™M multi-point connection

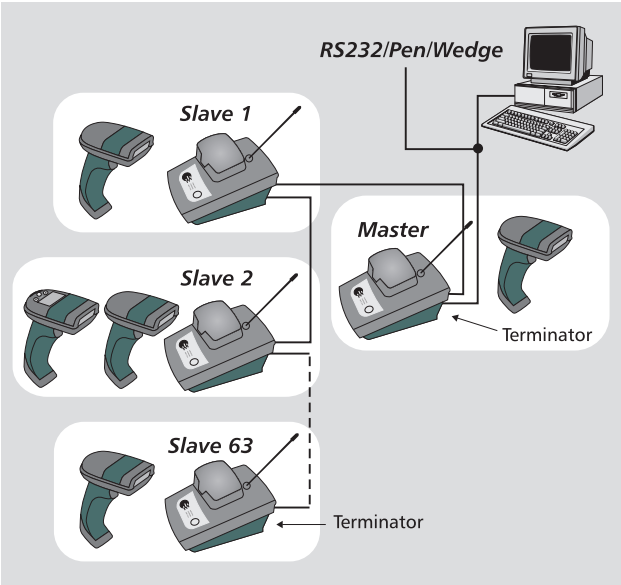


Fig. 3 - Dragon™ M network (Echelon kit required)

The basic configuration of the Dragon™ M system consists of one gun (Dragon™ M) and one cradle (OM-Dragon™).
In this case, the configuration is called point-to-point (fig. 1) and in terms of use, has the same functionality of a standard gun without cable constraint.
When more than one gun (up to 32), is connected to a single cradle, a multi-point configuration is created (fig. 2). Multiple user data collection is available in the range of 50 mt with no cabling requirements.
The system can be completed with gun battery chargers, called C Dragon™, to make the whole system less expensive.
In addition, different cradles can be connected to each other in a local area network configuration (fig. 3). In this case, the first cradle becomes the master, and can work together with up to 16 cradles, over a maximum length of 1200 meters. This possibility is available both with point-to-point and multipoint configurations.
Regarding communication between a remote gun and a cradle/host, two typical modes can be identified: the first with audible feedback from the cradle the second with visible and audible feedback from the host. The first mode is typical of the gun model without display (connection A - fig. 4). When a code is read the data is sent to the cradle and then to the host. The user hears a beep tone signaling that the code has been read and transmitted. A second short beep confirms that the CRADLE has correctly received the data (acknowledge). The cradle, offered with an integrated multistandard interface, immediately sends the data to the host (connection B) through the selected interface (WEDGE, PEN EMULATION or RS232). The second communication mode is possible when RS232 is selected (connection B). It provides the greatest advantage when used with the DRAGON™ M 101/D (with display). In this case, the system performs a virtual connection C, where the host can talk directly to the gun.
Furthermore, the new Dragon™ M is 100% compatible with the old DLL6xxx-R radio system. Simply by reading the "DLL6xxx-R compatible mode" command the Dragon™ M is made to behave like a DLL6xxx-R, therefore the existing configuration sequence and installation procedure can be applied without changes.

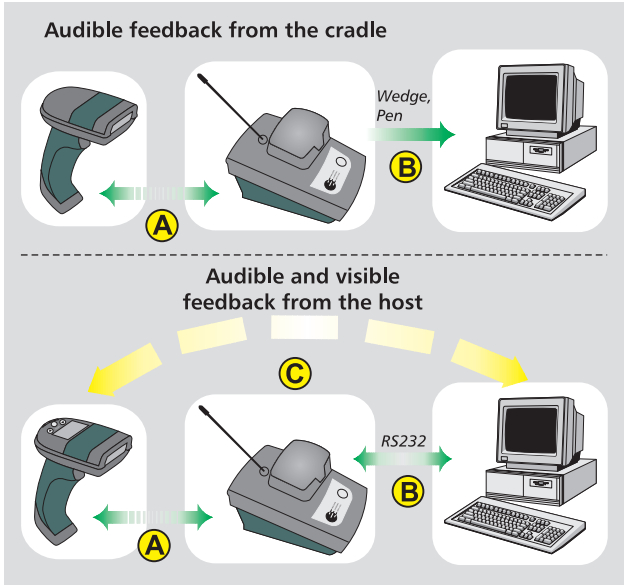
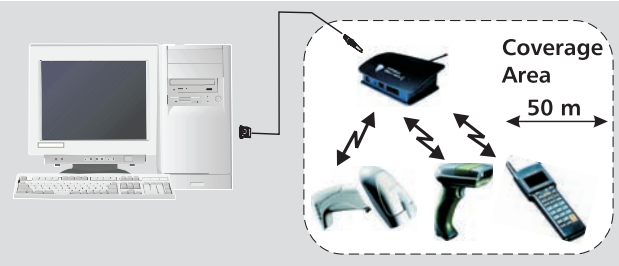


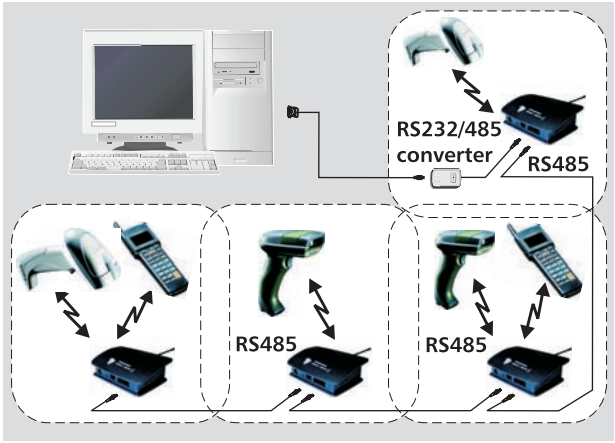
Fig. 4 - Dragon™ communication

STAR-System™ COMPATIBILITY



RS232 Stand Alone Configuration

One of the main features of the new Dragon™ M is the compatibility with the STAR-System™, the new Datalogic RF narrow band solution for mobile applications that includes all the RF system components: RF data collection devices, RF base station and software tools. In fact, STAR-System™ provides the widest range of narrow band devices for data collection ever seen on the market. The STAR-System™ is the ideal solution to satisfy and improve the performance of most common data collection applications requiring mobile automatic data capture (e.g. bar code) and real-time feed-back (e.g. price, description, location, etc.) from the ERP/WMS system such as Inventory, Picking, Shipping/Receiving, etc. STAR-System™ provides the most flexible wireless connection between data and business: "RS232 stand-alone" configurations as well as "RS485 network" solutions easily integrate the Datalogic wireless solution with any custom software application running on a standard Windows based PC. STAR-System™ conforms to the European ETSI standard EN300 220-3 and boasts a large number of benefits. It has a wide area coverage, and real-time connection with the user application. Large ranges of devices are able to solve various applications in different markets. Integration is easy in Windows-based applications, and no operating license is required. Furthermore it is a reliable, fast and cost-effective system with minimal installation costs. To fully support sales offers and complete equipment installations an entire set of professional hardware & software instruments have been developed: with these tools it is very easy to design a successful RF solution as well as to perform a qualified site-survey service. It's clear how the STAR-System™ can improve the throughput of the Dragon™ M, combining the Cordless System opportunities with the Dragon™ M features, it gives you economic and business benefits such as productivity improvement, lower costs and a substantial competitive advantage for the company.



RS485 Network Configuration

APPLICATIONS AND TARGET MARKETS

Dragon™Desk

Manufacturing:

- Shop floor (WIP, Tracking, Quality Control)
- Warehousing

The Dragon™ D is particularly useful in all activities that take place on the shop floor in manufacturing environments; Typically consisting of assembly line material tracking, quality control and work-in-progress. These processes are performed at the highest level of accuracy and speed thanks to the new Dragon™ D reader. Its high mechanical resistance guarantees product duration and investment protection.

Dragon™Mobile

Transportation & Logistics: Sorting

Distribution & Retail: Cash & Carry (POS)

Manufacturing: Shop floor (WIP, Tracking); Warehousing (Fork-lift truck, picking and loading, inventory, shipping and receiving, back store)

The Dragon™ M system is designed for tough industrial use: in factory or warehouse applications is a winning card: loading docks, shipping and receiving, inventory control and work in progress are the main activities that gain an incredible advantage with freedom from cable constraint. Forklift truck applications also based on vehicle RF terminals receive advantages in using the Dragon™ M system as a local extension of their data capturing capability.

Cash and Carry

Warehousing

Work-in-progress

Fork-lift truck

MODELS AND ACCESSORIES

MODEL	DESCRIPTION	ORDER NO.
Dragon D101 HP	High performance laser gun, with multistandard decoder and trigger 4 to 20 Vdc	902151230
Dragon D101 HD	High Density laser gun, with multistandard decoder and trigger 4 to 20 Vdc	902151240
Dragon D101 LR	Long Range laser gun, with multistandard decoder and trigger 4 to 20 Vdc	902151250
Dragon M101, 433Mhz	Cordless laser gun, High Performance scanning engine, no display	902201730
Dragon M101, 910 Mhz	Cordless laser gun, High Performance scanning engine, no display	902201760
Dragon M101/D, 433Mhz	Cordless laser gun, High Performance scanning engine, with display and keypad	902201740
Dragon M101/D, 910 Mhz	Cordless laser gun, High Performance scanning engine, with display and keypad	902201770
Dragon M101/D LR, 433Mhz	Cordless laser gun, Long Range scanning engine, with display and keypad	902201750
Dragon M101/D LR, 910 Mhz	Cordless laser gun, Long Range scanning engine, with display and keypad	902151780
ACCESSORIES		
OM Dragon™ RF (433 MHz)	Base station/charger with multistandard interface	90A301220
OM Dragon™ RF (910 MHz)	Base station/charger with multistandard interface	90A301230
OM Dragon™ RF B /C 433Mhz	Base station/charger with Echelon Network	90A301250
OM Dragon™ RF B /C 910Mhz	Base station/charger with Echelon Network	90A301260
C Dragon™	Smart battery charger	90A301240
B 6010- NM	3480 MWH Ni-Me-Hy battery set	90ACC1530
Cables	See HHD standard cable series	
ADP-102	5P din T-pass adapter	90ACC1030
ADP-103	6P minidin T-pass adapter	90ACC1040
ADP-200	USB adapter	90ACC1610
System Manual	Software manual for Dragon™ series	90ACC1855
SPC-6010	Desk/wall holder	90ACC1470
SPC-Dragon™	Desk/wall holder	90ACC1790
PC Dragon™	Protective case/belt coupler for Dragon™	90ACC1860
PG5 (110 Vac)*	Power supply unit	B9751038
PG5 (220 Vac)*	Power supply unit	B9751037
PG 110	Power supply unit	B9751057
PG 220	Power supply unit	B9751027

** Only available for Dragon™ D*

SPECIFICATIONS

MODEL	**DRAGON™ D**
POWER SUPPLY	4 to 20 Vdc
CONSUMPTION	250 mA @ 4 V; 170 mA @ 5 V; 40 mA @ 20 V
OPERATING TEMPERATURE	-10 to 50 °C (14 to 122 °F)
STORAGE TEMPERATURE	-20 to 60 C (-4 to 140 °F)
DROP RESISTANCE	Withstands repeated drops from 2 m onto a concrete surface
WEIGHT	Approx. 270 g (9,53 oz)

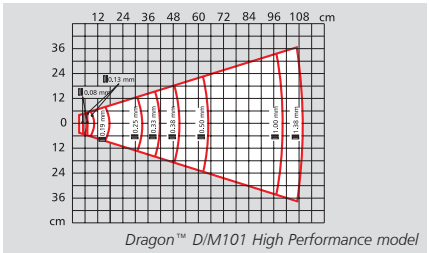
MODEL	**DRAGON™ M**
BATTERY TYPE	NiMh (3480 mWh) (All AA NiCD and Alkaline batteries can also be used)
DISPLAY (M101/D model only)	Graphic with backlight, 32 x 96 dots, and font dimension can be selected by the user (with default selection 4 lines x 16 columns)
KEYPAD (M101/D model only)	Membrane keypad with 3 keys
RECHARGE TIME	2 hours
OPERATING AUTONOMY	Over 60,000 with NiMh batteries (Test mode: 100 reads/min)
OPERATING TEMPERATURE	-10 to 40 °C (14 to 122 °F)
STORAGE TEMPERATURE	-20 to 50 C (-4 to 122 F)
DROP RESISTANCE	Withstands repeated drops from 1,8 m (M101), 1,5 m (M101/D) onto a concrete surface
WEIGHT	Approx. 340 g (12 oz)

CRADLE	**OM DRAGON™**
POWER SUPPLY	10 to 28 Vdc
POWER CONSUMPTION	max. 8 W
READING INDICATORS	Battery charging (red), Charge completed (green) Power/Data (yellow)
DIMENSIONS without antenna	185 X 115 X 104 mm (7.28 X 4.52 X 4.09 in)
CASE MATERIAL	ABS
WEIGHT	Approx. 600 g (21,1 oz)

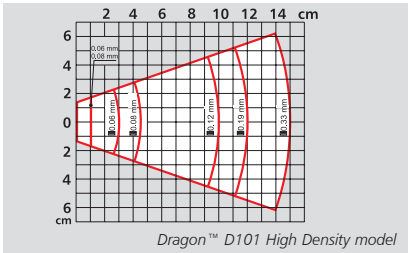
RADIO SPECIFICATIONS	
RADIO FREQUENCY	433.05- 434.79Mhz (Europe); 909.94- 910.06 Mhz (USA)
BIT RATE	19,200 baud (European models),36,800 (USA models)
EFFECTIVE RADIATED POWER	<10 mW (Europe); <1 mW (USA)
RADIO RANGE	Up to 50 m (Europe) - Up to 30 m (USA), depending on working area
MAX NR. COEXISTING SYSTEM	Max 32 devices per radio receiver; max 2000 devices in the same reading area

MODELS	**DRAGON™ D & DRAGON™ M**
LIGHT SOURCE	VLD 630 - 670 nm (depending on the model)
MAX SCAN RATE	35+/- 5 scans/sec
MAX RESOLUTION	0.08 mm: D101; 0.06 mm: D101: HD; 0.25 mm: D101 LR; 0.12 mm: M 101; 0.25 mm: M101 LR
PRINT CONTRAST RATIO (min)	15% D101, 40% D101 HD, D101 LR 15% M101 40% M101 LR
READING ANGLE	*Skew:* +/-60; *Pitch:* 5 to 55, -5 to -55; *Tilt:*+/-20
READING INDICATORS	Laser ON, Good Read, Beeper, Good transmission (Dragon™ M only)
BAR CODES	2/5 family, Code 39 (plus Code 32, Cip 39), EAN/UPC, EAN 128, 128, Code 128, Code 93, CODABAR, TELEPEN, PLESSEY, Code 49, Code MSI, Code Delta IBM, Code 11, CODABLOCK, Code 16K, ISBN/ISSN, ISBT 128
PROGRAMMING METHOD	
Manual	Reading special bar codes
Automatic (with RS 232)	S/W commands through the serial port
Sm@rtSet™	Windows configuration program
INTERFACES	RS 232, Wedge, Pen emulation
ENHANCED FEATURES	Puzzle Solver™, data editing and data concatenation
CASE MATERIAL	ABS and polycarbonate, plus co-moulded rubber
AMBIENT LIGHT CONDITIONS	Immune to light exposure in offices and facilities, and direct exposure to sunlight
HUMIDITY	90% non condensing
ENVIRONMENTAL PROTECTION	Immune to water and dust

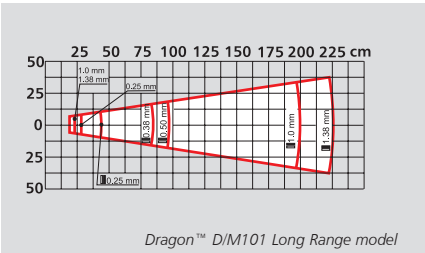
READING DIAGRAMS



Dragon™ D/M101 High Performance model



Dragon™ D101 High Density model



Dragon™ D/M101 Long Range model

DATALOGIC
code *e*-volution

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Via Salvatore Calenda, 6A
84126 SALERNO
Tel. 089 252625 - Fax 178 2726634
www.rce.it - e-mail vendite@rce.it

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