

Laser Sentinel Series

QUICK REFERENCE GUIDE

This Quick Reference Guide does not replace the Instruction Manual. Download the Instruction Manual by reading the QR code here or at www.datalogic.com. Click on Support > Search by product and enter the Laser Sentinel family name, then select your product from the dropdown list. Click on the Manuals & Technical Literature link to download your Instruction Manual. The Instruction Manual must be available at all times when installing and working with the product.



Scan or tap on the QR code to download the Instruction Manual.

Safety Laser Scanner
Stand Alone and Master/Slave Models

SAFETY INFORMATION



For a correct use of the Laser Sentinel, the following points must be observed:

NOTE

- The machine stopping system must be electrically controlled.
- This control system must be able to stop the dangerous movement of the machine within the total machine stopping time T and during all the working cycle phases.
- The device mounting and connections must be carried out by qualified personnel only, according to the indications included in the special sections (refer to chapters 6 and 7 of the Instruction Manual) and in the applicable standards.
- The safety laser scanner must be securely placed in such a way that access to the dangerous zone is not possible without passing through the safety area (refer to chapter 5 of the Instruction Manual).
- The personnel operating in the dangerous area must be well trained and must have adequate knowledge of all the operating procedures of the safety laser scanner.
- In case of Manual Restart, the Restart button must be located outside the safety area to let the operator control the safety zone during resetting or testing sessions.
- Please carefully read the instructions for the correct functioning before powering the device.
- The requirements for the electrical safety and electromagnetic compatibility and the regulations or standards in all countries and/or regions, must be met by the power supply where the Laser Sentinel is used. If the Laser Sentinel power supply is shared with the machine or other electronic devices, voltage reduction to the Laser Sentinel or noise influence on the device may occur due to the temporary increase in current consumption on the machine or the other electronic devices. We do not recommend sharing the Laser Sentinel power supply with the one for the machine or the other electronic devices, because a device error status may occur.
- Do not place the connection cables in contact with or near high-voltage cables and/or cables with undergoing high current variations (e.g. motor power supplies, inverters, etc.).
- Do not connect any of the Laser Sentinel inputs to DC power sources outside of the declared range or to any AC power source, in order to avoid the risk of electric shock.
- Every access to the configuration tools must be allowed to restricted and highly qualified personnel only. Access to the configuration through the GUI is only allowed by password.
- Periodically monitor the optic window during the entire product lifecycle checking for any damage, scratches or dirt spots. In the presence of highly reflective backgrounds, these may cause a reduction in the detection capability of the scanner.
- The laser scanner must not be used underwater or in explosive hazardous areas.
- The laser scanner is not suitable for outdoor use.



Class 1 laser product. Invisible laser radiation. Do not view directly with optical instruments. IEC 60825-1:2007 & 2014.



WARNING

Failing to respect the instructions contained in this manual and in the Instruction Manual may affect the detection capability and correct functioning of the laser scanner.

MECHANICAL MOUNTING

For mechanical mounting, the Laser Sentinel has two different procedures depending on the operation necessities. The two mounting possibilities are: direct mounting or angle adjustment bracket mounting (if the pitch and the roll angles need to be adjusted).

Optionally, the protection bracket can be added to applications using the angle adjustment brackets.



NOTE

Required tool: adjustable torque driver with 3 mm hex bit.

Direct Mounting

The device has two M5 threaded holes on the back and four M5 threaded holes on the side.

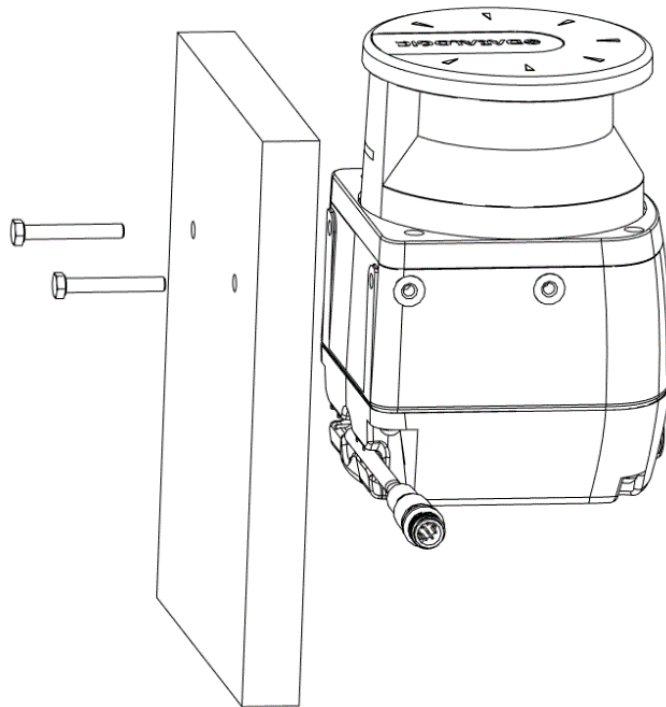
For direct mounting, use both M5 threaded holes in the back or all four M5 threaded holes on the two sides, taking into account the following values:

- M5 on the back (tightening torque 2.3 - 5.5 Nm), maximum depth of thread engagement 9.5 mm.
- M5 on the side (tightening torque 2.3 - 3 Nm), maximum depth of thread engagement 8 mm.



NOTE

For direct mounting on the sides, if the wall or panel obstructs the output window, this plane cannot be used for safety zone monitoring. The safety zone must adhere to the minimum distance to wall value given in the Laser Sentinel Reference Manual.



CONNECTIONS

All power connections to the Laser Sentinel must strictly comply with standard regulations. The device requires a supply voltage of 24 Vdc. Power must be supplied in accordance with SELV/PELV (IEC 60204-1) for all the devices electrically connected to the safety laser scanner. Make sure that the safety laser scanner is provided with an appropriate electrical fuse protection and the earthing system method is the same for all the devices connected to the Laser Sentinel.

Laser Sentinel Stand Alone Model

The Laser Sentinel Stand Alone model has one OSSD pair and includes three programmable signals. These signals allow the user to configure the device with different functions: the detection of a person or an object in the Warning Zone, the switching of the detection areas by employing external signals (Area Switch), the restart of the device caused by the OSSD Off-status (Restart) and restoring the device after a failure condition (Reset), the automatic deactivation of the safety status on the whole safety area (Muting) and the Single line pattern Muting Override used to force the safety function deactivation whenever it is necessary to restart the machine.



Make sure that the signals are aligned with the pin features and their specific function. In addition, they must be correctly connected to the external device.

NOTE

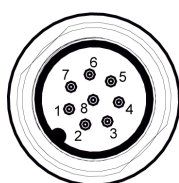


Figure 1 - Connector (M12, 8 poles)

CATEGORY	TYPE	COLOR	DESCRIPTION	PIN OUT
POWER	POWER SUPPLY	BROWN	24Vdc	2
	GND_ISO	BLUE	0 V	7
INPUT/OUTPUT	MULTI IN/OUT	GREEN	Selectable by GUI	3
	MULTI IN/OUT	YELLOW	Selectable by GUI	4
	MULTI IN/OUT	WHITE	Selectable by GUI	1
SAFETY OUTPUTS	OSSD 1/1	GRAY	Safety Output	5
	OSSD 1/2	PINK	Safety Output	6
OTHER	F_EARTH	RED	Functional Earth	8

The **Multi In/Out** is a Pin that can be configured either as input or output.

TYPE	FUNCTION	CONNECTION
	RESTART/RESET	
	AREA SWITCH	
	OVERRIDE (Single line pattern)	
	MUTING 1 MUTING 2	
	MUTING ENABLE	
MULTI-OUT	WARNING	
	MUTING LAMP	
OSSD	OSSD 1/1 OSSD 1/2	

Laser Sentinel Master Model

Master M12 8-pole connector

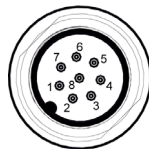


Figure 2 - Connector (M12, 8 poles)

CATEGORY	TYPE	COLOR	DESCRIPTION	PIN OUT
POWER	POWER SUPPLY	BROWN	24Vdc	2
	GND_ISO	BLUE	0 V	7
INPUT/OUTPUT	MULTI IN	GREEN	Selectable by GUI	3
	MULTI IN	YELLOW	Selectable by GUI	4
	MULTI IN/OUT	WHITE	Selectable by GUI	1
SAFETY OUTPUTS	OSSD 1/1	GRAY	Safety Output	5
	OSSD 1/2	PINK	Safety Output	6
OTHER	F_EARTH	RED	Functional Earth	8

The **Multi In/Out** is a Pin that can be configured either as input or output.

TYPE	FUNCTION	CONNECTION
	RESTART/RESET	
	AREA SWITCH	
	OVERRIDE (Single line pattern)	
	MUTING 1 MUTING 2	
	MUTING ENABLE	
MULTI-OUT	WARNING	
	MUTING LAMP	
OSSD	OSSD 1/1 OSSD 1/2	

Master M12 12-pole connector

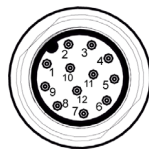


Figure 3 - Connector (M12, 12 poles)

CATEGORY	TYPE	COLOR	DESCRIPTION	PIN OUT
POWER	POWER SUPPLY	BROWN	24Vdc	1
	POWER SUPPLY	GREEN	24Vdc	4
	GND_ISO	BLUE	0 V	2
	GND_ISO	YELLOW	0 V	6
INPUT	MULTI IN	WHITE	Selectable by GUI	3
INPUT/OUTPUT	MULTI IN/OUT	BLACK	Selectable by GUI	7
	MULTI IN/OUT	RED	Selectable by GUI	9
	MULTI IN/OUT	VIOLET	Selectable by GUI	10
	MULTI IN/OUT	GRAY/PINK	Selectable by GUI	11
SAFETY OUTPUTS	OSSD 1/1	GRAY	Safety Output	8
	OSSD 1/2	PINK	Safety Output	5
OTHER	F_EARTH	RED/BLUE	Functional Earth	12



In case of configurations with one or more Slave devices, both POWER SUPPLY and GND_ISO cables must be connected.

NOTE

Multi In (8-pole and 12-pole models)

The Multi In are input signals configurable depending on the safety application needed.

TYPE	FUNCTION	DESCRIPTION	CONNECTION
MULTI IN	RESTART	Restarts the device following OSSD Off-status	
	RESET	Restores the device after a failure condition	
	RESTART 1 / RESET	Restarts or restores the device	
	AREA SWITCH 1	Switches the detection areas by employing external signals	
	AREA SWITCH 2		
	AREA SWITCH 3		
	AREA SWITCH 4		
	AREA SWITCH 5		
	MUTING ENABLE 1	If it is a high level, the Muting feature is enabled, and Muting will be performed	
	MUTING 11	Automatically deactivates the safety status on the whole safety zone	
MUTING 12			

Multi Out (8-pole and 12-pole models)

The Multi Out are output signals, configurable depending on the safety application needed.

TYPE	FUNCTION	DESCRIPTION	CONNECTION
MULTI OUT	MUTING LAMP 1	Active Muting function signal. Connect LED lamp providing it with 24 Vdc	
	WARNING 1	Outputs for detections in the warning area	
	WARNING 2		
	ALARM 1	Clean window	
	ALARM 2	Device error	
NO FUNCTION	not used		

Multi In/Out (8-pole and 12-pole models)

The Multi In/Out are signals that can be configured both as inputs and outputs. Laser Sentinel allows the operator to connect from one to three OSSD pairs; it is possible to assign to the same electrical pin input and output signals defined as Multi In or Multi Out.



The additional OSSDs are aligned to the main outputs OSSD11 and OSSD12 requirements (OSSD11 and OSSD12 are not configurable). If a Multi Out pin is selected, a second signal linked to it will be automatically configured (EN 61496).

NOTE

TYPE	FUNCTION	DESCRIPTION	CONNECTION
MULTI IN/OUT	MULTI IN	MULTI IN/OUT inputs can be configured as MULTI IN inputs	
	MULTI OUT	MULTI IN/OUT inputs can be configured as MULTI OUT inputs	

Master M12 17-Pole Connector

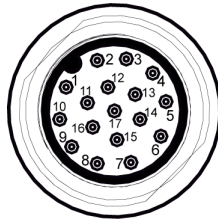


Figure 4 - Connector (M12, 17 poles)

CATEGORY	TYPE	COLOR	DESCRIPTION	PIN OUT
POWER	POWER SUPPLY	BROWN	24Vdc	1
				10
				11
	GND_ISO	BLUE	0 V	2
				3
				12
INPUT	MULTI IN	WHITE	Selectable by GUI	14
	MULTI IN	BLACK	Selectable by GUI	7
	MULTI IN	ORANGE	Selectable by GUI	6
	MULTI IN	VIOLET	Selectable by GUI	17
OUTPUT	MULTI OUT	GREEN	Selectable by GUI	4
	MULTI OUT	YELLOW	Selectable by GUI	15
INPUT/OUTPUT	MULTI IN/OUT	WHITE/BLACK	Selectable by GUI	5
	MULTI IN/OUT	RED	Selectable by GUI	9
SAFETY OUTPUTS	OSSD 1/1	GRAY	Safety Output	13
	OSSD 1/2	PINK	Safety Output	8
OTHER	F_EARTH	YELLOW/GREEN	Functional Earth	16

Master M12 17+8 Pole Connector

The M12 17-pole connector can be associated to the M12 8-pole connector for additional functions, e.g. encoders.

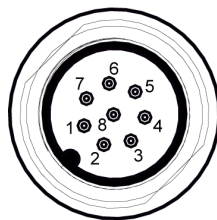











Figure 5 - Connector (M12, 8 poles)

CATEGORY	TYPE	COLOR	DESCRIPTION	PIN OUT
SPEED INPUT	MULTI IN SPEED	GRAY	Encoder 1-1. Selectable by GUI	8-4
	MULTI IN SPEED	PINK	Encoder 1-2. Selectable by GUI	8-6
	MULTI IN SPEED	YELLOW	Encoder 2-1. Selectable by GUI	8-5
	MULTI IN SPEED	RED	Encoder 2-2. Selectable by GUI	8-8
INPUT	MULTI IN	GREEN	Selectable by GUI	8-3
	MULTI IN	BLUE	Selectable by GUI	8-7
	MULTI IN	BROWN	Selectable by GUI	8-2
	MULTI IN	WHITE	Selectable by GUI	8-1


Multi In (17 pole and 17+8 pole models)

The Multi In are input signals configurable depending on the safety application needed.

TYPE	FUNCTION	DESCRIPTION	CONNECTION
MULTI IN	SHUT OFF	Enables the Shut Off function for energy saving	
	EDM 1	Enables the External Device Monitoring	
	EDM 2		
	RESTART 1	Restarts the device following OSSD	
	RESTART 2	Off-status	
	RESET	Restores the device after a failure condition	
	RESTART 1/RESET	Restarts or restores the device	
	RESTART 2/RESET		
	RESTART 1/RESET/EDM 1	Restarts or restores the device, or enables the EDM function	
	RESTART 2/RESET/EDM 2		
	AREA SWITCH 1	Switches the detection areas by employing external signals	
	AREA SWITCH 2		
	AREA SWITCH 3		
	AREA SWITCH 4		
	AREA SWITCH 5		
	AREA SWITCH 6		
	AREA SWITCH 7		
	AREA SWITCH 8		
	OVERRIDE 11 (PULSED)	Enables the override function (either pulsed or level)	
	OVERRIDE 11 (LEVEL)		
	OVERRIDE 12 (LEVEL)		
	OVERRIDE 21 (PULSED)		
	OVERRIDE 21 (LEVEL)		
	OVERRIDE 22 (PULSED)		
	MUTING ENABLE 1	If it is a high level, the Muting feature is enabled, and Muting will be performed	
	MUTING 11	Automatically deactivates the safety status on the whole safety zone	
	MUTING 12		
	MUTING ENABLE 2	If it is a high level, the Muting feature is enabled, and Muting will be performed	
MUTING 21	Automatically deactivates the safety status on the whole safety zone		
MUTING 22			
NO FUNCTION	not used		

Multi In Speed (17+8 pole models)

The Multi In Speed are input signals configurable depending on the safety application needed. If the application uses encoders, all encoder inputs are employed (ENCODER 11, ENCODER 12, ENCODER 21, ENCODER 22).

TYPE	FUNCTION	DESCRIPTION	CONNECTION
MULTI IN SPEED	ENCODER 11	Enables the encoder function. Both couples are automatically activated.	
	ENCODER 12		
	ENCODER 21		
	ENCODER 22		
	MULTI IN		

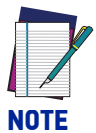
Multi Out (17 pole and 17+8 pole models)

The Multi Out are output signals, configurable depending on the safety application needed.

TYPE	FUNCTION	DESCRIPTION	CONNECTION
MULTI OUT	MUTING LAMP 1	Active Muting function signal. Connect LED lamp providing it with 24 Vdc	
	MUTING LAMP 2		
	WARNING 1	Outputs for detections in the warning area	
	WARNING 2		
	ALARM 1	Clean window	
	ALARM 2	Device error	
	OSSD 21	Activates the second OSSD pair	
	OSSD 22		
	OVERRIDE STATUS	If it is high level, Override is active	
NO FUNCTION	not used		

Multi In/Out (17 pole and 17+8 pole models)

The Multi In/Out are signals that can be configured both as inputs and outputs. Laser Sentinel allows the operator to connect from one to three OSSD pairs; it is possible to assign to the same electrical pin input and output signals defined as Multi In or Multi Out.



NOTE

The additional OSSDs are aligned to the main outputs OSSD11 and OSSD12 requirements (OSSD11 and OSSD12 are not configurable). If a Multi Out pin is selected, a second signal linked to it will be automatically configured (EN 61496).

TYPE	FUNCTION	DESCRIPTION	CONNECTION
MULTI IN/OUT	OSSD 31	Activates the third OSSD pair	
	OSSD 32		
	MULTI IN	MULTI IN/OUT inputs can be configured as MULTI IN inputs	
	MULTI OUT	MULTI IN/OUT inputs can be configured as MULTI OUT inputs	

Laser Sentinel Slave Model

Slave devices are equipped with rotatable side connectors for the input and output connection and will receive data and power supply from the previous devices which in turn will send it to the others. 8-pole connectors are used to connect Slave devices.

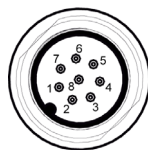
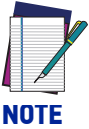


Figure 6 - Connector (M12, 8 poles)

PIN OUT	INPUT PORT	OUTPUT PORT
1	V _{PWR}	V _{PWR}
7	V _{PWR}	V _{PWR}
6	I _{TX+}	O _{TX+}
5	I _{RX+}	O _{RX+}
4	I _{TX-}	O _{TX-}
8	I _{RX-}	O _{RX-}
2	GND_ISO	GND_ISO
3	GND_ISO	GND_ISO



Download the DLSentinel GUI at www.datalogic.com. Click on [Support](#) > [Search by product](#) and enter the **Laser Sentinel family name, then select your product and click on the [Software & Utilities](#) link to download your **Graphic User Interface**.**

NOTE

1. On the PC that will be used for configuration, download the DLSentinel.zip file, unzip it and run the installation program by double-clicking the **SetupDLSentinel.msi** file. The downloaded folder also contains Windows framework provided by Datalogic in case you need to update your operating system. Run the .msi setup file first, and only install the framework .exe file if requested.
2. When the installation is complete, the DLSentinel entry is created in the Start > All Programs menu under “Datalogic” along with a desktop icon. Double-click the desktop icon to run it.
3. For the configuration procedure follow the steps included in the DLSentinel User’s Manual.



Configuration to the connected device requires the alignment between the IP Addresses of the device and the computer LAN. For further information refer to the DLSentinel User’s Manual.

NOTE

Minimum System Requirements











COMPONENT	RECOMMENDE	MINIMUM
Processor(s)	Pentium 4	Pentium 4
Clock frequency	>= 3 GHz	>= 2 GHz
RAM	2 GB	1 GB
Free hard drive space	70 MB	70 MB
Monitor resolution	1280x768	1024x768
Supporting Operating System	Windows XP, Windows 7, Windows 8, Windows 10	










MONITORING BY DISPLAY










DISPLAYED ICON		NAME	DESCRIPTION
VALID CONFIGURATION	CONFIGURATION PENDING ACCEPTANCE		
		ON State	The device is correctly functioning (OSSDs GO Condition). No presence detected in the Safety and Warning Area.
		Warning for intrusion into Warning Area	The device is correctly functioning. The device has detected a presence in the Warning Area.
		OFF State for intrusion into Safety Area	The device is correctly functioning (OSSDs STOP Condition). The device has detected a presence in the Safety Zone.
		OFF State for Reference Points	The device has detected that Reference Points have moved. The Display Sector in the direction of the moved reference point is lit in blue.










DIAGNOSTICS

DISPLAYED ICON	DISPLAYED FAULT CODE	DEVICE STATUS	OSSD STATUS	DESCRIPTION
	DLDNF	NORMAL	OFF	Downloading new firmware.
	DLDNC	NORMAL	OFF	Downloading new configuration.
	CLEANW2	NORMAL	ON	It is suggested to clean the window to avoid entering lockout condition.
	ITLOCKx	NORMAL	OFF	Interlock. Waiting for the relevant OSSD pair to restart.
	INTF6	NORMAL	ON	Micro integrity test failure. Internal peripheral test for non safety relevant functions.
	BOOTF	NORMAL	OFF	Invalid boot. Re-boot the system until the normal condition is restored. If warning persists, contact Datalogic Technical Support.
	MUT TIMEOUT	NORMAL	ON	Muting has expired because it is maintained beyond the maximum timeout time.
	MUTING ERR	NORMAL	ON	Muting has not activated because the correct sequence was not followed.
	MUTING	NORMAL	ON	The Muting function is active.
	OVERRIDE ERR	NORMAL	ON	Override has not been activated because the correct sequence has not been followed or there are no override conditions.

DISPLAYED ICON	DISPLAYED FAULT CODE	DEVICE STATUS	OSSD STATUS	DESCRIPTION
	OVERRIDE	NORMAL	ON	The Override function is active
	OVERTEMP	NORMAL	ON	The external temperature is above the limit.
	OVR TIMEOUT	NORMAL	ON	The Override timeout function has expired.
	HIGH REFL-BKG	NORMAL	ON	A high reflecting background is detected that could have an impact on detection capability. Take the measures described in " Precautions for Environmental Interference " on page 11 or reduce/remove the reflecting background.
	CHECK MASTER	NORMAL	ON	The Slave unit warns against a problem on the Master device.
	WINDOW REPLACE	NORMAL	OFF	Window replacement procedure in progress.
	WR FAILED	LOCKOUT	OFF	Window calibration failed. Repeat the procedure or change the window.
	COMMIT ON FIELD	NORMAL	OFF	The device needs a commit when it has been restored on field after window replacement.
	SHUT-OFF	NORMAL	OFF	Shut Off function enabled.
	RES SHUT-OFF	NORMAL	OFF	Shut Off function disabled.

DISPLAYED ICON	DISPLAYED FAULT CODE	DEVICE STATUS	OSSD STATUS	DESCRIPTION
	WAITING CONF	LOCKOUT	OFF	The device is waiting the first configuration (e.g. after a Factory Reset)
	CLEANW1	NORMAL	OFF	Window needs to be cleaned. Repeat this action until the normal condition is restored. Otherwise contact Datalogic Technical Support to replace the damaged part.
	INPUTCF1	LOCKOUT	OFF	Invalid input configuration or connection.
	INPUTCF2	LOCKOUT	OFF	Invalid input transition.
	OSSDF1	LOCKOUT	OFF	OSSD integrity test failure.
	OSSDxF3	LOCKOUT	OFF	OSSDx overcurrent or short circuit.
	INTFx	LOCKOUT	OFF	Internal Failure. Reset the system by using the reset function or cycle power to device. If failure persists, contact Datalogic Technical Support.
	INTF18	LOCKOUT	OFF	Internal Failure. Reset the system by using the reset function or cycle power to device. If failure persists, contact Datalogic Technical Support. This fault also occurs when a device of the Master/Slave cluster is replaced or removed (Topology fault). In this case, connect to the GUI and upload a new configuration.
	INTF20	NORMAL	OFF	Master/Slave connection failure. Check network connector or the integrity of Slave devices and restore normal network operation. If failure persists, contact Datalogic Technical Support.

DISPLAYED ICON	DISPLAYED FAULT CODE	DEVICE STATUS	OSSD STATUS	DESCRIPTION
	ENC OUT OF FREQ	LOCKOUT	OFF	The input received from Encoder 1 or Encoder 2 exceeds the maximum pulse frequency. The device enters lockout status after three consecutive events.
	ENC ERROR	LOCKOUT	OFF	This error can occur if one of the following conditions is met: <ul style="list-style-type: none"> •The difference between the speed measures collected by Encoder 1 and Encoder 2 exceeds the Encoder Δ beyond the allowable time window. •The encoders are not connected properly.
	SLAVE ERROR	LOCKOUT	OFF	The Master device warns against a fault or error condition in a Slave unit.
	EDM	LOCKOUT	OFF	EDM error. Contact Datalogic Technical Support.
	MG NO MATCHING	BOOT	OFF	Memory Group does not match with the configuration. Replace the Memory Group with the right model.
	MG FAILURE	BOOT	OFF	Memory Group failure. Create a new configuration via GUI, perform a backup configuration from the Master device, or replace the Memory Group.
	MG EMPTY	BOOT	OFF	The Memory Group has no configuration stored on board. Create a new configuration via GUI or perform a backup configuration from the Master device.
	DEVICE EMPTY	BOOT	OFF	The Master device has no configuration stored on board. Create a new configuration from GUI or restore the configuration from the Memory Group.
	CFG NO MATCHING	BOOT	OFF	The device configuration does not match with the Memory Group configuration. Follow the displayed instructions.

DISPLAYED ICON	DISPLAYED FAULT CODE	DEVICE STATUS	OSSD STATUS	DESCRIPTION
 INCOHERENCE	INCOHERENCE	BOOT	OFF	The device found an incoherent configuration. A new configuration via GUI is necessary.
 BKP IN PROGRESS	BKP IN PROGRESS	BOOT	OFF	Fast replacement backup phase in progress. Wait and do not push any button.
 BKP DONE	BKP DONE	BOOT	OFF	Fast replacement backup phase completed.
 BKP FAILED	BKP FAILED	BOOT	OFF	Fast replacement backup phase failed. Try again or create a new configuration via GUI.
 RES IN PROGRESS	RES IN PROGRESS	BOOT	OFF	Fast replacement restore phase in progress. Wait and do not push any button.
 RESTORE DONE	RESTORE DONE	BOOT	OFF	Fast replacement restore phase completed.
 RES FAILED	RES FAILED	BOOT	OFF	Fast replacement restore phase failed. Try again or create a new configuration via GUI.
 RES VALIDATION	RES VALIDATION	BOOT	OFF	The fast replacement restore phase needs validation by the user to go back to normal operation after checking that the safety conditions have been restored.
 RES ABORT	RES ABORT	BOOT	OFF	If the safety conditions have not been restored after the fast replacement restore phase, the user can abort the restore phase and create a new configuration via GUI.

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1.4 Portions of the Datalogic Product are protected by the relevant and applicable patent and copyright laws, international treaty provisions, and other applicable laws. Therefore, End User must treat the Datalogic Product like any other copyrighted material (e.g., a book or musical recording) except that End User may make one copy of the Software solely for back-up purposes. Unauthorized duplication of the Software constitutes copyright infringement.

1.5 Any use of the Software outside of the conditions set forth herein is strictly prohibited and will be deemed a breach of this Agreement resulting in immediate termination of this Agreement. In the event of a breach of this Agreement, Datalogic will be entitled to all available remedies at law or in equity (including but not limiting to immediate termination of the license without notice, immediate injunctive relief and repossession of all Datalogic Products).

1.6 Without prejudice of the foregoing, End User grants to Datalogic and its independent accountants or consultants the right to examine End User's books, records and accounts during End User's normal business hours to verify compliance with this Agreement. In the event such audit discloses non-compliance with this Agreement, Datalogic shall be entitled to immediately terminate the Agreement, request End User to promptly pay all (additional) license fees due and any further damages, if any.

2. License Fee

License fees shall be due by End User to Datalogic according to the terms provided for in the relevant contract for the purchase of the Datalogic Product.

3. Termination

Without prejudice to any other rights or remedies Datalogic may have, Datalogic may terminate this Agreement if End User fails to comply with the terms and conditions of this Agreement. Datalogic may terminate this Agreement by offering you a superseding Agreement for the Software or any replacement or modified version of or upgrade to the Software and conditioning your continued use of the Software or such replacement, modified or upgraded version on your acceptance of such superseding Agreement. In addition, either party may terminate this Agreement at any time. Subject to the foregoing, termination shall be effective upon notice to the other party. In the event that this Agreement terminates for any reason, End User's license to use the Software will immediately terminate, and End User must immediately stop using the Software, destroy all copies of the Software and all of its component parts, and, upon request, provide an affidavit certifying your compliance with the foregoing. The provisions of Sub-sections 1.2, 1.3, 1.4, 1.5, 4, 5, 6, 8, and 11 shall survive termination of this Agreement.

4. Limited Warranty

Datalogic warrants that, under normal use and operation, the Software will conform substantially to the applicable Datalogic Product documentation for the period specified in the same, provided that the Software is used with the Datalogic Product. Datalogic's entire liability and End User's sole and exclusive remedy for any breach of the foregoing limited warranty will be, at Datalogic's option, the provision of a downloadable patch or replacement software.

Datalogic does not warrant (i) that Software will meet End User's requirements; (ii) that Software will be uninterrupted or defect error free; (iii) any non-conformity derived from unauthorized use, and/or improper installation or repair not in compliance with Datalogic Product documentation. End User agrees that the existence of such non conformities or errors and Datalogic's inability to remedy such errors shall not constitute a breach of this Agreement.

EXCEPT AS PROVIDED IN THIS AGREEMENT, THE DATALOGIC PRODUCT IS PROVIDED "AS IS" AND DATALOGIC MAKES NO WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, WRITTEN OR ORAL, WITH RESPECT TO THE DATALOGIC PRODUCT OR SOFTWARE, AND SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

5. Limitation of Liability

EXCEPT AS PROVIDED IN THIS AGREEMENT, NEITHER DATALOGIC NOR ITS LICENSORS SHALL BE LIABLE FOR ANY CLAIMS AGAINST END USER BY ANY OTHER PARTY. IN NO EVENT SHALL DATALOGIC'S LIABILITY FOR DAMAGES, IF ANY, WHETHER BASED UPON CONTRACT, TORT (INCLUDING NEGLIGENCE), PRODUCT LIABILITY, STRICT LIABILITY, WARRANTY, OR ANY OTHER BASIS, EXCEED THE PRICE OR FEE PAID BY END USER FOR THE DATALOGIC PRODUCT. UNDER NO CIRCUMSTANCES SHALL DATALOGIC OR ITS LICENSORS BE LIABLE TO END USER OR ANY THIRD PARTY FOR LOST PROFITS, LOST DATA, INTERRUPTION OF BUSINESS OR SERVICE, OR FOR ANY OTHER SPECIAL, CONSEQUENTIAL, CONTINGENT, INDIRECT, INCIDENTAL, PUNITIVE, EXEMPLARY, OR OTHER SIMILAR DAMAGES, EVEN IF DATALOGIC OR ITS LICENSORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. END USER MUST BRING ANY ACTION UNDER THIS AGREEMENT WITHIN 12 (TWELVE) MONTHS AFTER THE CAUSE OF ACTION ARISES.

6. Indemnification

To the maximum extent permitted by law, End User agrees to defend, indemnify and hold harmless Datalogic, its affiliates and their respective directors, officers, employees and agents from and against any and all claims, actions, suits or proceedings, as well as any and all losses, liabilities, damages, costs and expenses (including reasonable attorney's fees) arising out of or accruing from or related to Licensee's failure to comply with the terms of this Agreement, including but not limited to (1) noncompliance with any applicable laws or regulations with Datalogic product documentation, (2) unauthorized use or disclosure of Software, and (3) use of Software in combination with software, hardware, systems, or other items not provided by Datalogic.

7. Support

End User may request support for Software from Datalogic at Datalogic's standard support fees and under Datalogic's standard support terms and conditions in effect at the time the support is requested.

8. Government Restricted Rights; International Use

8.1 Use, duplication, or disclosure of the Software by the U.S. Government is subject to the restrictions for computer software developed at private expense as set forth in the U.S. Federal Acquisition Regulations at FAR 52.227-14(g), or 52.227-19 or in the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013(c)(1)(ii), whichever is applicable.

8.2 If End User is using the Datalogic Product outside of the United States, End User must comply with the applicable local laws of the country in which the Datalogic Product is used and with U.S. export control laws. Without prejudice of the foregoing, the End User agrees to not export or re-export the Software, any part thereof, or any process or service that is the direct product of the Software to any country, person or entity subject to U.S. export restrictions. End User specifically agrees not to export or re-export any of the Software: (i) to any country to which the U.S. has embargoed or restricted the export of goods or services or to any national of any such country, wherever located, who intends to transmit or transport the Software back to such country; (ii) to any person or entity who you know or have reason to know will utilize the Software in the design, development or production of nuclear, chemical or biological weapons; or (iii) to any person or entity who has been prohibited from participating in U.S. export transactions by any federal agency of the U.S. government. End User warrants and represents that neither the U.S. Commerce Department, Bureau of Export Administration nor any other U.S. federal agency has suspended, revoked or denied its export privileges.

9. Third Party Software

The Datalogic Product may contain one or more items of third party software which use is governed by separate third party license, unless otherwise stated.

10. Notices

All notices required or authorized under this Agreement shall be given in writing, and shall be effective when received, with evidence of receipt. Notices to Datalogic shall be sent to the attention of Datalogic IP Tech S.r.l., Legal & IP Department, Via San Vitalino 13, 40012 Calderara di Reno (Bologna), Italy, or such other address as may be specified by Datalogic in writing.

11. General Provisions.

11.1. Entire Agreement; Amendment. This document contains the entire agreement between the parties relating to use of the Datalogic Products and the licensing of the Software and supersedes all prior or contemporaneous agreements, written or oral, between the parties concerning the use of the Datalogic Products and licensing of the Software. This Agreement may not be changed, amended, or modified except by written document signed by Datalogic.

11.2. Waiver. A party's failure to enforce any of the terms and conditions of this Agreement shall not prevent the party's later enforcement of such terms and conditions.

11.3. Governing Law; Venue: End User agrees to the application of the laws of the country in which End User obtained the license to govern, interpret, and enforce all of End User's and Datalogic's respective rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Agreement, without regard to conflict of law principles. The United Nations Convention on Contracts for the International Sale of Goods does not apply.

All rights, duties, and obligations are subject to the courts of the country in which End User obtained the license. For licenses granted by Licensee who operates in the countries specified below, the following terms applies.

For Americas:

This Agreement is governed by the laws of the State of Oregon. This Agreement and the rights of the parties hereunder shall be governed by and construed in accordance with the laws of the State of Oregon U.S.A, without regard to the rules governing conflicts of law. The state or federal courts of the State of Oregon located in either Multnomah or Lane counties shall have exclusive jurisdiction over all matters regarding this Agreement, except that Datalogic shall have the right, at its absolute discretion, to initiate proceedings in the courts of any other state, country, or territory in which End User resides, or in which any of End User's assets are located. In the event an action is brought to enforce the terms and conditions of this Agreement, the prevailing party shall be entitled to reasonable attorneys' fees, both at trial and on appeal.

For Europe, Middle East and Africa:

This Agreement is governed by the laws of Italy. This Agreement and the rights of the parties hereunder shall be governed by and construed in accordance with the laws of Italy, without regard to the rules governing conflicts of law. Italian Court of Bologna shall have exclusive jurisdiction over all matters regarding this Agreement, except that Datalogic shall have the right, at its absolute discretion, to initiate proceedings in the courts of any other state, country, or territory in which End User resides, or in which any of End User's assets are located. In the event an action is brought to enforce the terms and conditions of this Agreement, the prevailing party shall be entitled to reasonable attorneys' fees, both at trial and on appeal.

For Asia- Pacific Countries:

The validity, interpretation and construction of the Agreement shall be governed by and construed in accordance with Laws of the Republic of Singapore. Parties expressly disclaim the application of the United Nations Convention for International Sale of Goods.

Any dispute arising out of or in connection with this contract, including any question regarding its existence, validity or termination, shall be referred to and finally resolved by arbitration administered by the Singapore International Arbitration Centre ("SIAC") in accordance with the Arbitration Rules of the Singapore International Arbitration Centre ("SIAC Rules") for the time being in force, which rules are deemed to be incorporated by reference in this clause. The seat of the arbitration shall be Singapore.

The number of arbitrators will be three, with each side to the dispute being entitled to appoint one arbitrator. The two arbitrators appointed by the parties will appoint a third arbitrator who will act as chairman of the proceedings. Vacancies in the post of chairman will be filled by the president of the SIAC. Other vacancies will be filled by the respective nominating party. Proceedings will continue from the stage they were at when the vacancy occurred. If one of the parties refuses or otherwise fails to appoint an arbitrator within 30 days of the date the other party appoints its, the first appointed arbitrator will be the sole arbitrator, provided that the arbitrator was validly and properly appointed. All proceedings will be conducted, including all documents presented in such proceedings, in the English language. The English language version of these terms and conditions prevails over any other language version.

11.4. Attorneys' Fees. In the event an action is brought to enforce the terms and conditions of this Agreement, the prevailing party shall be entitled to reasonable attorneys' fees, both at trial and on appeal.

- END -

This is an extract from the original instructions (821005982 Rev. C)

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