USER MANUAL

TOKHEIM ProGauge

MAGLINK LX

Rev. 9 – 04-2016

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SUMMARY

1 PREFACE

Start Italiana S.r.l. has made every effort possible so that this document is complete, accurate and updated. With every revision of the console, the corresponding information is periodically added to the document. Start Italiana S.r.l. reserves the right to make unannounced improvements and/or changes in the product and/or associated programs. Start Italiana S.r.l. is not liable for damages of any kind, including those resulting in the document, including typographical errors.

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2 GENERAL WARNINGS

Before working on this equipment, please be certain to carefully read the instructions in this manual.

Configuration must be performed by properly trained personnel.

The manufacturer is not responsible for any operation performed which is not covered in this manual.

Any tampering with the equipment and software relieves the manufacturer of any responsibility in regards to competent bodies.

In case of failure or defect, refer to an authorized service provider or manufacturer directly.

The manufacturer accepts no responsibility for any injury and/or damage to persons and/or property and/or pets caused by failure to follow instructions relating to safety.

Qualified and trained staff has to know all safety requirements in this manual, in the user manual and in the installation manual.

In case of doubt concerning the operation of the equipment, refer to an authorized service provider or manufacturer directly.

	IMPORTANT: It is compulsory to consult safety instructions before using the equipment

	IMPORTANT: Improper use, not in accordance with the requirements described herein, may compromise safety

3 INTRODUCTION

This manual has been prepared in accordance with IEC 82079-1 standards. “Preparation of instructions for use - Structuring, content and presentation - Part 1: General principles and detailed requirements”and according to the ATEX Directive 2014/34/EU concerning equipment and protective systems intended for use in potentially explosive atmospheres.

The manual provides all necessary information on using a Maglink LX console.

The following table lists the symbols used in the document:

Symbol	Description
	ATTENTION: Important information and notes regarding operations and use considerations
	IMPORTANT: Danger to persons (including death), to property or to the environment

The following table lists reference data of the manufacturer:

Data	Description
Name	Manufacturer_name
Address	Address 20813 Bovisio Masciago (MB)Address ItaliaAddress
Telephone	Tel
Fax	Fax
Website	www
e-Mail	eMail

	ATTENTION: This manual must be used in conjunction with the following manuals: • Configuration Manual • Installation Manual In order to use the console as described below in this manual, you must have installed the consoles as per Installation Manual and use the console as per the Configuration Manual

	ATTENTION: This manual must be used in conjunction with safety instructions:

	IMPORTANT: Console installation should be performed by qualified/trained personnel, as shown in the Installation Manual, Configuration Manual and according to safety instructions

The Maglink LX console complies with the requirements of Directive 2012/19/EC on waste of electrical and electronic equipment (WEEE) and hence displaying the according symbol:

	IMPORTANT: The crossed out wheelie bin symbol indicates that the product, at the end of its useful life, must be disposed of with household waste and must be brought to a collection point for electrical and electronic equipment

	ATTENTION: The units of measurement contained in this manual refer to a specific choice by the user himself/herself. You can set the measurement units in a different way (see Configuration Manual)

4 GENERAL DESCRIPTION

4.1 Labelling and type designation

The following table lists the labels placed on the equipment:

Labelling	Description
	The labelling on the outer container contains the following data: • Name and address of the manufacturer • CE marking with the Notified Body • Product Name • The "Caution" symbol (0434B of 01/2004), according to ISO 7000 • Serial number • Year of production • Power Supply(VAC and Hz) • Power consumption (VA) • Operating temperature (°C) • Ingress protection (IP grade) • Fuse rating • Indication that inside there is intrinsically safe circuit
	ATEX labelling on the outer container contains the following data: • Name and address of the manufacturer • Equipment Type (BRA-SIP, or BRA-2SIP) • ATEX Reference number of the certificate • ATEX Marking: Ex II (1) G [Exia] IIB FISCO power supply UM=250 V [Exia] IIB • Serial number • Electrical data

4.2 Description

The console is a device for the monitoring of the level of probes and for signalling the relative tank alarms. 32 probes can be supported, 16 on-board (8 with the addition of a MagDirect ,Max 2 MagDirect), 32 DVD (Fuel Quality Sensors, one for each tank), 4 on board relays, 6 inputs on board, and an external expansion module that can carry up to 4 expansion cards. Each expansion card supports 8 relay outputs, 8 Digital Inputs or 4-20mA. With a combination of these cards the system can support 32 relays and 0 inputs, 32 inputs and 0 relays, and combinations of both with modularity of 8.

The console can be interfaced with the FCC/POS on the station via either serial or Ethernet.

The console is equipped with a resistive type touch screen, so it is possible to use it with fingers (even with gloves), special pens and likewise. It required to contact and apply a pressure to use it.

The following table lists the principal technical characteristics of the console:

Characteristic	Value
Power supply	100 ÷ 240 V~, 50÷60 Hz
Consumption	15 VA
Operating temperature	(-10 ÷ +50) °C
Relative humidity	(5 ÷ 95)%, non-condensing
Number of probes	32
Number of ON-OFF external sensors	Up to 32
Number of ON-OFF internal sensors	6 (only with Dipswitch 2 on ON)
External relay outputs	Up to 32
Internal relay outputs	4
Lower power of the relay output	0,5 A, 33 V~, or 2 A, 30 V DC
Output power for the probes	12 V DC, 100 mA per output per probe, connectors MR3 MR4 (up to 8 probes per connector)
Serial communication of the probes	RS485
Host communication (management)	RS232
Printer communication and management software	RS232
Integrated web server for configuration, consultation, communication, and emails.	TCP/IP
GSM modem for SMS service	1 Optional
IFSF	1 Optional
Case	Plastic
Protection	IP40
Dimensions	265 x 190 x 95 mm

4.3 Compatible probes

The following table lists the probes compatible with the MAGLINK LX console:

Probe
XMT EXD 485
XMT SI 485
XMT RF (RF receiver required)

The following table lists the auxiliary equipment of the MAGLINK LX console:

Auxiliary equipment
Expansion cards, up to 32 relays and 0 inputs, up to 32 inputs and 0 relay, and various combinations in modules of 8
Local printer

5 INTENDED USE AND REASONABLY FORESEEABLE MISUSE

The intended use for the MAGLINK LX console is only for that described in this manual.

The console is used for monitoring the level of the probes installed in the tanks.

The console must be installed in a safe area and includes an Intrinsic safety barrier, 2 channels (BRA-2SIP) that serve to connect the XMT-SI-485 probes

The following table lists the characteristics of use of the intrinsically safe barrier contained in the console:

MAGLINK LX Features (barrier)	**Description**
Group (area of use)	II (Surface industries different from mines)
Category and type of potentially explosive atmosphere	(1) G
Protection mode	ia
Group of substances (gases, vapours or mists)	IIB

The specifications of use for console security and for the Barrier are provided in this manual and on the product label.

	IMPORTANT: Safety instructions constitute an attachment to this manual and users must acknowledge it before using the equipment

	IMPORTANT: The Console should not be used in areas at risk of fire and explosion. The probes of the XMT-SI-485 family are installed in risk of fire and explosion areas and must be connected to the Barrier contained in the console itself.

The following table lists some reasonably foreseeable incorrect uses:

Element considered	**Incorrect use**
Resistive touch screen	Do not use for selection of options other than your fingers and/or special accessories intended for resistive touch screens
USB and USB Port devices	Do not use other USB devices than those formatted as FAT 32 Do not connect the printer, PC, tablet, mobile phone to the USB ports
Serial ports	Do not use serial ports other than for the printer and PC with management programs that interface with the protocols provided by Start Italiana S.r.l.
Network cable	Do not use the other network cable to connect your PC or the corporate network

6 POWER ON/OFF

	IMPORTANT: Only authorized/trained personnel following the installation inline with the manufactures instructions can switch on the console. This operation must be in accordance with the instructions of the Installation Manual and according to Safety Instructions.

The following table lists the steps necessary to switch on the console:

Step	Description
1	Check that the power button is OFF (0)
2	Connect the power cable.
3	Connect the corporate network cable, if required
4	Press the power button ON (1)

When switched on if the console is not configured it will emit an alarm when it does not communicate with any tank. Press the red arrows up and down until you reach the page "ALARM LOG" and press the ACK button to silence the alarm.

For any changes to be made to the console configuration, refer to the manual "Configuring the Console."

The following table lists the steps necessary to switch off the console:

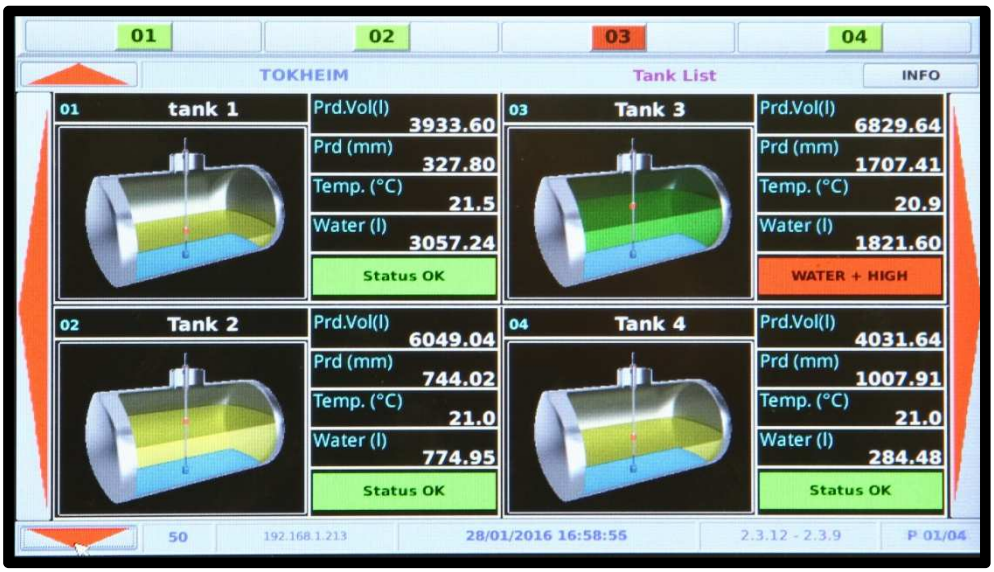
Step	Description
1	Press the INFO button at the top right of the screen
2	Press the "Off" button within the INFO page
3	Wait for the screen to turn black
4	Press the power OFF (0) button on the console

	IMPORTANT: If the console is switched OFF simply removing power the SD card might be damaged and the console might not restart. If this happen a new SD card is needed and the image of the Operating System and application should be loaded, and at last the backup restore in order to have the previous saved configuration The Console needs to be shut down from info page before removing power for proper operation.

7 OPERATION

The application has an easy-to-use "circulate" menu, with which the user can browse through all the available functions.

The following image shows the opening page of the console:



This page summarizes the main information relating to one or more tanks. You can view up to 4 tanks simultaneously on the same page. If there are more than 4 tanks configured you can view the next one by pressing the large red arrows in the left and right parts of the page.

The first line at the top of the page contains a list of tanks connected to the console: The icon colour of tank number reflects the state of the reservoir.

The following table lists the data visible in the second row at the top of the page:

Information	**Description**
Red arrow on	Circular menu including: "Tanks," "Tank Details," "Location," "ALARM LOG"
Tokheim	Station name
Tanks	Page Title
INFO	Button to access system information/functions

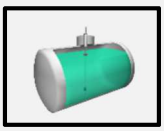
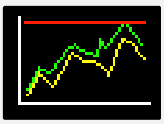
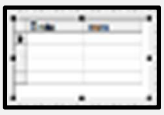
In the central part of the page press the red right/left arrows to display the previous and/or subsequent data of the tanks, in the case where more than 4 tanks are connected to console (The page allows displaying 4 tanks at a time).

The following table lists the data visible in the lower row at the bottom of the page:

Information	**Description**
Red arrow below	Circular menu including: "Tanks," "Tank Details," "Location," "ALARM LOG"
050	Page Number
192.168.1.209	IP address of the console
05/11/2015 11:44:23	Current date and time (There may be a message about the static/dynamic leakage/loss)
2.3.3 – 2.3.0	Firmware, application and web versions
P 01/02	Tank number examined/total number of reservoirs

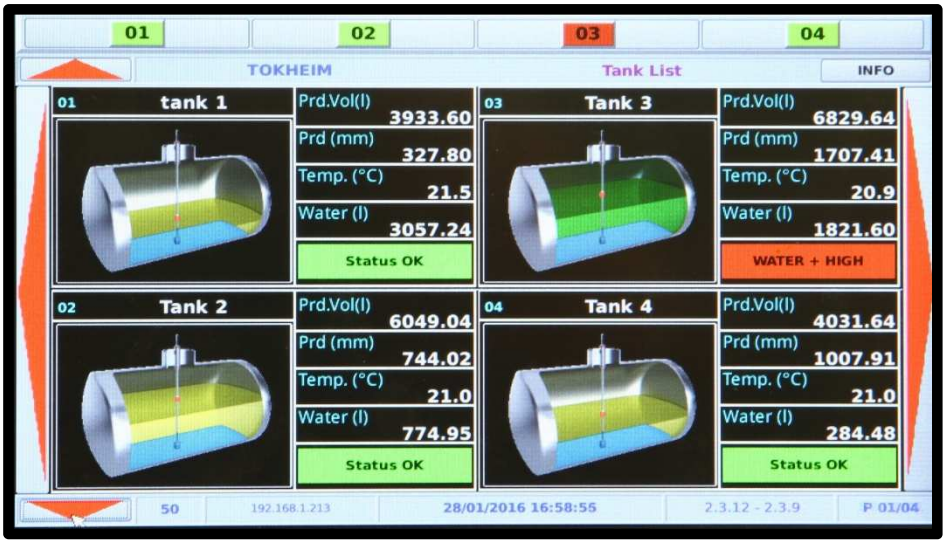
7.1 Functions

Using the up/down red arrows, you can access the functions of the console. The following table lists the available functions:

Paragraph	Function		Description	Icon
7.1.1	Tanks		Display tanks connected to the console/Select tank to be displayed	
7.1.2	Tank details		"Multi page" dedicated to a single tank with the ability to view multiple screens	
7.1.2.1		Tank Configuration	Display Tank parameters	
7.1.2.2		Historical chart	Display of trends over time for levels/volumes/temperatures, etc.	
7.1.2.3		Historical list	Time display of tank levels in graph form	
7.1.2.4		Delivery list	Viewing the delivery list	
7.1.2.5		Diagnostics	Display diagnostic data	
7.1.2.6		Reconciliation	Display reconciliation data	
7.1.2.7		Shift Report	Display Shift Report	
7.1.2.8		Product quality DVD	View DVD data	
7.1.3	Status		Display tank level as a percentage for all connected tanks	
7.1.4	List of ON/OFF sensors		Display ON/OFF sensors connected to the tank	
7.1.5	Alarm Log		Display current and previous alarms	
7.1.6	INFO		System Information/Functions	

7.1.1 Tanks

The following image shows an example of the "Tank Page":



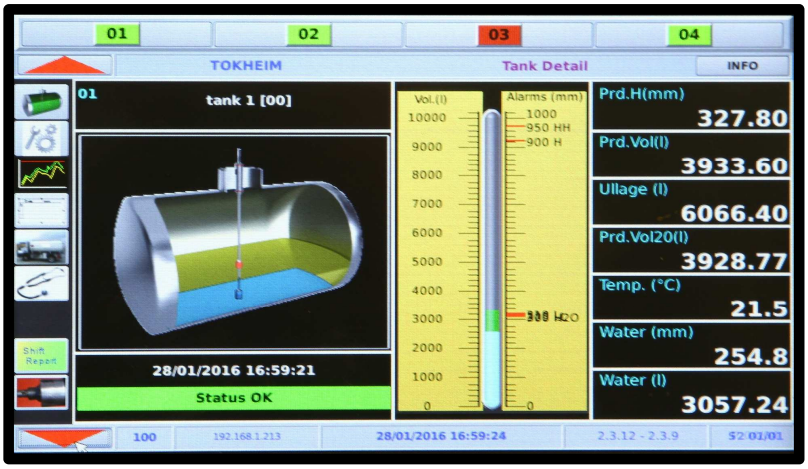
The following table lists the page elements:

Element	Description
Tank graph	Graphical representation of the level in the tank

Tank data	The following data is displayed:
	• Prd.Vol(l): Quantity of products in the tank displayed in [l]
	• Prd (mm): Product level inside tank is displayed in [mm]
	• Temp.(°C): Tank temperature displayed in [°C]
	• Water (l): Quantity of water in the tank displayed in [l]
	• Tank status (Internal alarm codes):
	  • OK STATUS (0)
	  • NO LINK (1, 8, 9, 11)
	  • HIGH (2)
	  • LOW (3)
	  • OUT OF RANGE (4)
	  • PROBE (5)
	  • VERY HIGH (6)
	  • VERY LOW (7)
	  • WATER (10)
	  • WATER + HIGH (12)
	  • WATER + LOW (13)
	  • WATER + OUT OF RANGE (14)
	  • WATER + PROBE (15)
	  • WATER + VERY HIGH (16)
	  • WATER + VERY LOW (17)
	  • WATER + NO LINK (18, 19)
	  • DISABLED (30)
	  • NOT INITIALIZED (99)

7.1.2 Tank details

The following image shows an example of the "Tank Details": (It is accessed by clicking on the graphic on the page of this tank "Tank"):

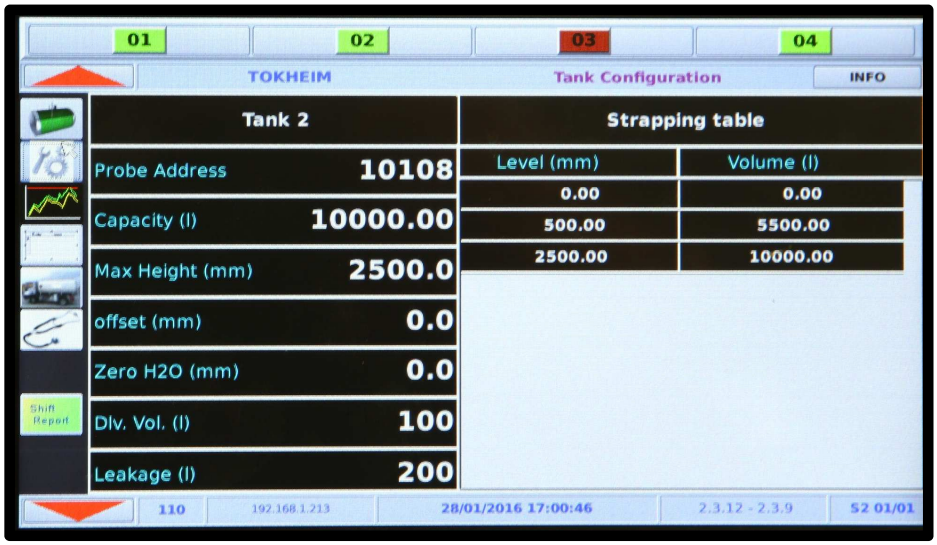


The following table lists the page elements:

Element	Description
Image of the tank	Graphical representation of the level in the tank The following data is displayed: • Name of the product in the tank • Date and time of details • Tank status
Product level graph	Graphical representation of the level in the tank, displayed in [l] and alarm displayed in [mm]
Table details	The following data is displayed: • Prd.H(mm): Product level displayed in [mm] • Prd.Vol(l): Product volume displayed in [l] • Ullage(l): Remaining product volume displayed in [l] referred to the working capacity percentuage • PrdVol15 (l): Compensated volume at 15° C displayed in [l] • Temp.(°C): Product temperature displayed in [°C] • Water (mm): Water level displayed in [mm] • Water (l): Water level displayed in [l]

7.1.2.1 Tank Details/Tank Configuration

The following image shows an example of the "Tank Configuration" (Accessed by clicking the icon on the left):

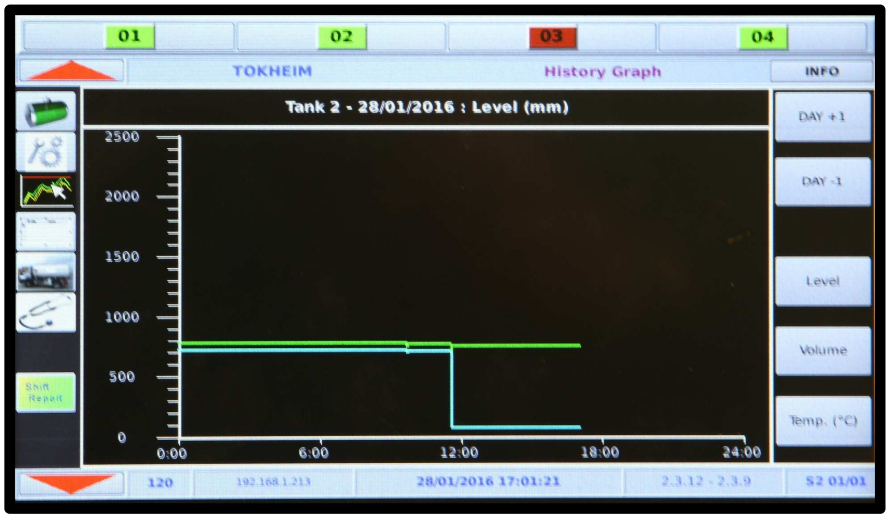


The following table lists the page elements:

Element	Description
Tank details	The following parameters are displayed: • Address probe • Capacity (l): Capacity of tanks displayed in [l] • Max Height (mm): Maximum height of tanks displayed in [mm] • offset (mm): Difference between probe and dipstick displayed in [mm] • Zero H2O (mm): Water offset displayed in [mm] • Div. Vol. (l): Delivery volume detection below which nothing happens (above, you have Delivery), displayed in [l] • Leakage (l): Leakage volume detection below which nothing happens (above, you have Leakage), displayed in [l]
Information Table	Displays the information table in use [level (mm)/Volume (l)]

7.1.2.2 Tank Detail/Historical chart

The following picture shows an example of the "Graph history" page (accessed by clicking the icon  on the left):



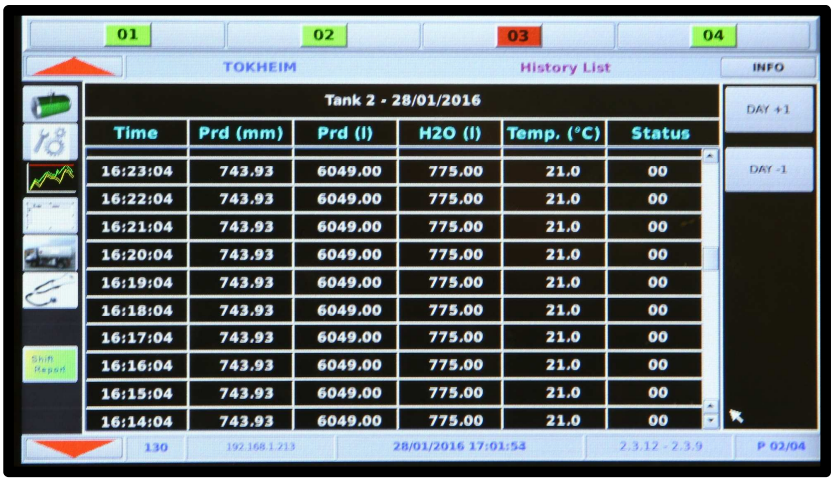
The page shows the trend of the tank level displayed in [mm] over a 24 hr period.

Legend (the lines are present only if the corresponding alarms are configured):

Colour	**Description**
Blue line	Water level
Higher Blue line	Water alarm threshold
Lower red line	VERY LOW product level threshold
Lower yellow line	LOW product level threshold
Green Line	Product level threshold
Higher yellow line	HIGH product level threshold
Higher red line	VERY HIGH product level threshold

7.1.2.3 Tank Detail/Historical list

The following picture shows an example of the "Graph list" page (accessed by clicking the icon on the left):

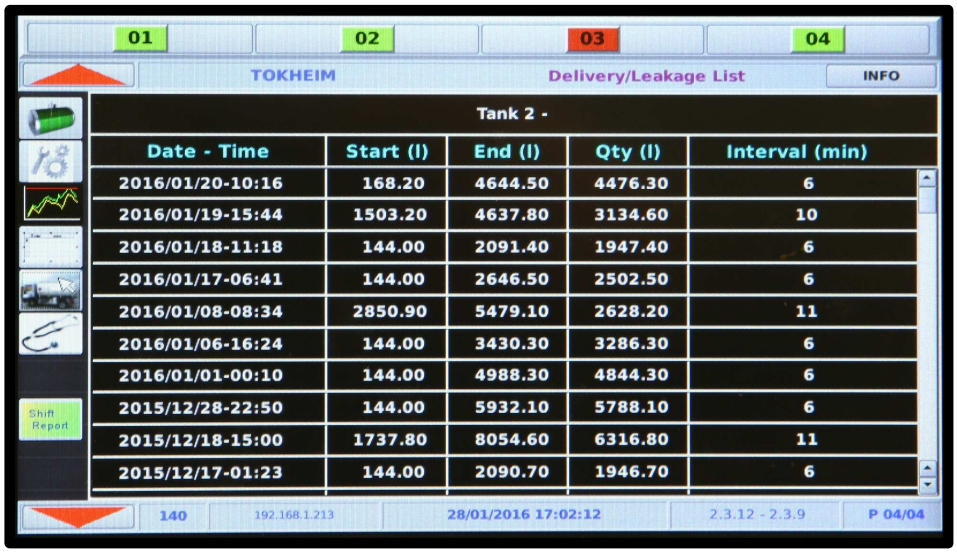


The following table lists the page elements, as a function of time:

Element	**Description**
Prd (mm)	Quantity of products in the tank displayed in [mm]
Prd (l)	Quantity of products in the tank displayed in [l]
H2O (l)	Quantity of water in the tank displayed in [l]
T (C)	Product temperature dispalyed in [°C]
State	Tank state • OK STATUS (0): everything OK • NO LINK (1, 8, 9, 11): no communication • HIGH (2): HIGH product level • LOW (3): LOW product level • OUT OF RANGE (4): A value that is not allowed (check tank table information) • PROBE (5): generic problem on the probe • VERY HIGH (6): VERY HIGH product level • VERY LOW (7): VERY LOW product level • WATER (10): Water level • WATER + HIGH (12): HIGH water level + product level • WATER + LOW (13): LOW Water level + product level • WATER + OUT OF RANGE (14): Water level + a value that is not allowed (check tank table information) • WATER + PROBE (15): Water level + probe problem • WATER + VERY HIGH (16): VERY HIGH Water level + product level • WATER + VERY LOW (17): VERY LOW Water level + product level • WATER + NO LINK (18, 19): Water level + no communication • DISABLED (30): Probe disabled via Configuration • NOT INITIALIZED (99): Probe not configured

7.1.2.4 Tank detail/Delivery List/Losses

The following picture shows an example of the "Delivery list" page (accessed by clicking the icon  on the left):



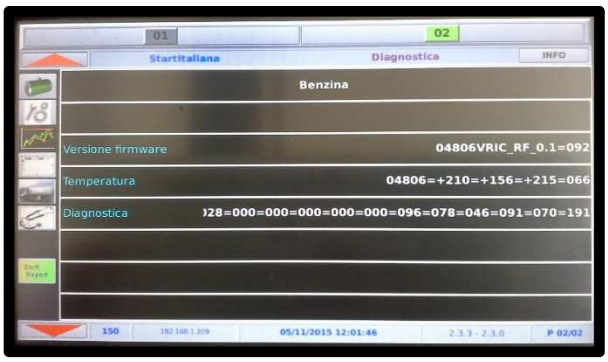
White lines are related to Delivery, the red lines are related to losses.

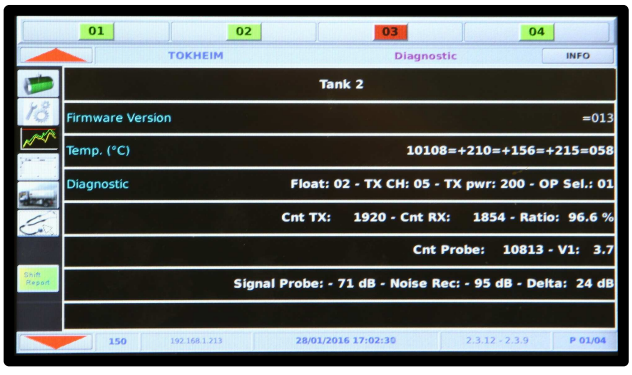
The following table lists the page elements, as a function of data and time:

Element	Description
Init. (l)	Initial volume displayed in [l]
Final (l)	Final volume displayed in [l]
Qty (l)	Delivery (Amount delivered to the tank) displayed in [l]
Interval (min)	Duration displayed in [min]

7.1.2.5 Tank details/Diagnostics

The following picture shows an example of the "Diagnostics" page (accessed by clicking the icon  on the left):

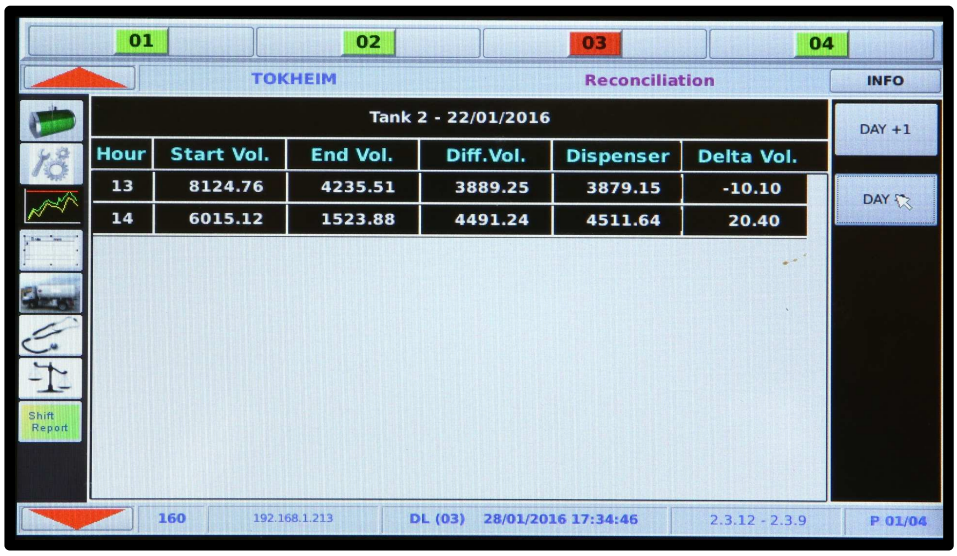




The data shown is for use by the support staff

7.1.2.6 Tank details/Reconciliation

The following picture shows an example of the "Reconciliation" page (accessed by clicking the icon on the left):



The following table lists the page elements:

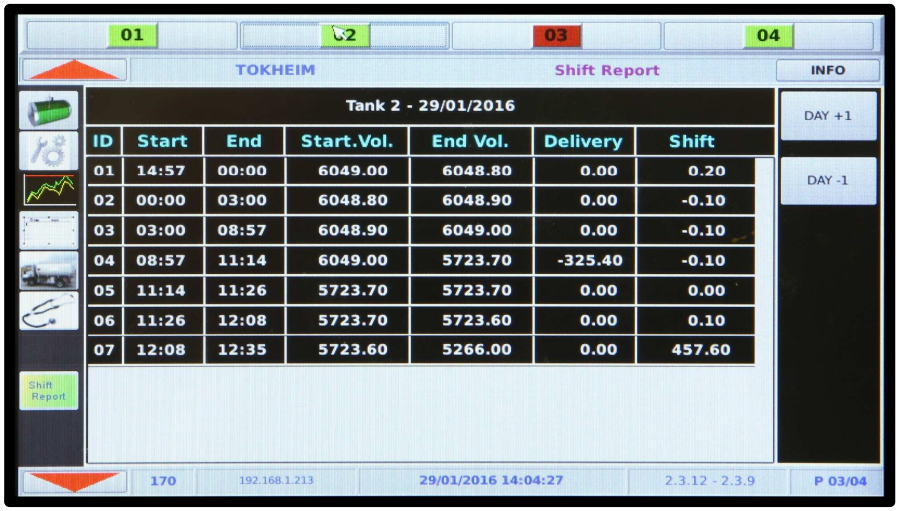
Element	Description
Time	Reference time
Vol. Initial	Initial time volume
Vol. Final	Final time volume
Vol. Diff.	Difference in volume from Start to End
Dispenser	Volume dispensed by dispenser
Delta Vol	Volume reconciliation value
GG +1	Selection of successive days
GG-1	Selection of previous days

The daily reconciliation will be available on reports in relation to the time programmed during the setup phase.

Reconciliation is only available when the Console receives data from an FCC/POS supporting the reconciliation process (dispenser sales)

7.1.2.7 Tank Details/Shift Report

The following picture shows an example of the "Shift Report" page (accessed by clicking the icon Shift Report on the left):

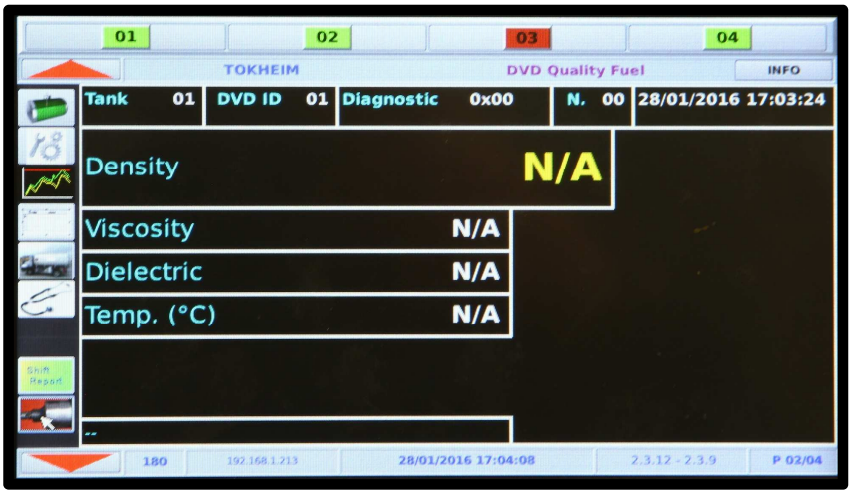


The following table lists the page elements:

Element	**Description**
ID	Incremental shift number
Start	Start of shift
End	End of shift
Initial volume	Opening shift volume
Final volume	Closing shift volume
Delivery	Volume of Delivery if present
Shift	Difference in volume start-end

7.1.2.8 Tank Details/DVD Details

The following picture shows an example of the "DVD Details" page (accessed by clicking the icon  on the left):

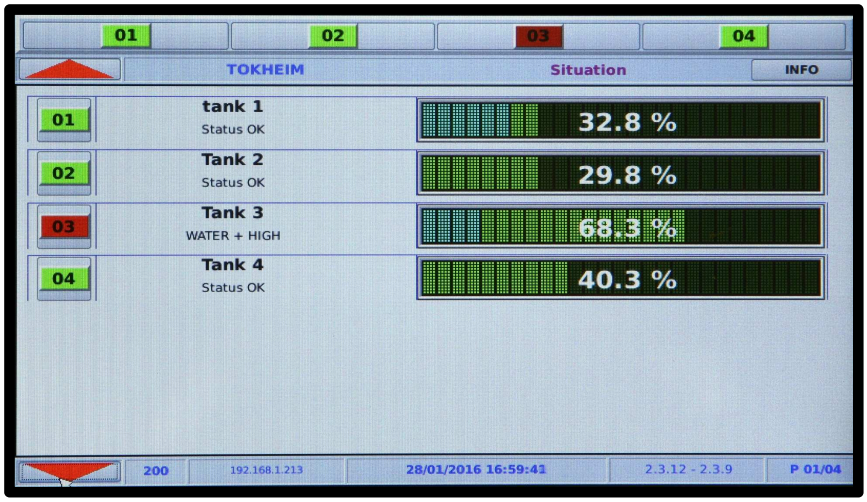


The following table lists the page elements:

Element	Description
Details in the first row	The following data is displayed: • Tank: Tank number • DVD ID: DVD identifier • Diagnosis: Support use only • No.: Number of transmissions from emission • Referral date and time of details
Table details	The following data is displayed: • Density: Density of the product displayed in [g/ml] • Viscosity: Viscosity of the product displayed in [cP] • Dielectric: Product Dielectric • Temperature: Product temperature displayed in [°C] • Fuel ID/Biodiesel in Diesel: Product type • Confidence index /% Biodiesel in Diesel: 100% compared confidence value of the product in the tank of the product with the theoretical value (Below the 50% confidence,we are not able to recognize the product with certainty)
Detail in the last row	Alphanumeric code for Start Italiana S.r.l. exclusive use

7.1.3 Tank detail percentage

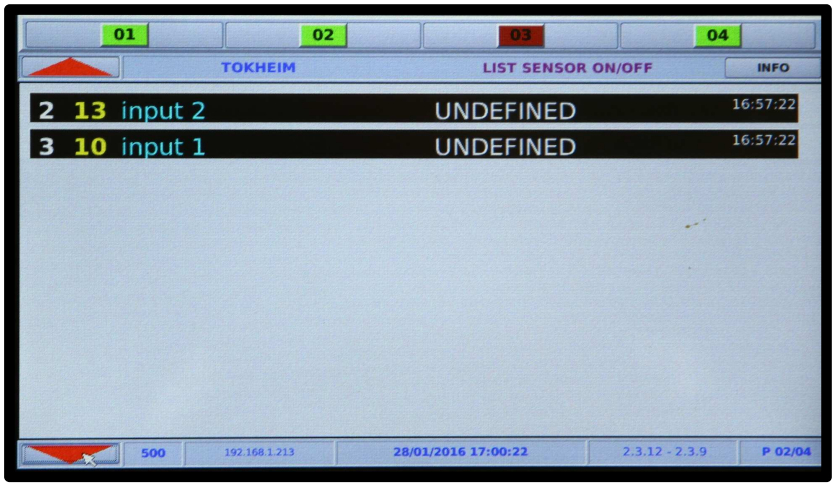
The following image shows an example of the "Status":



The number of the tank, the name of the tank, its state and the percentage filling of the tank are reported on the page.

7.1.4 List of ON/OFF sensors

The following image shows an example of the "List of ON/OFF sensors":

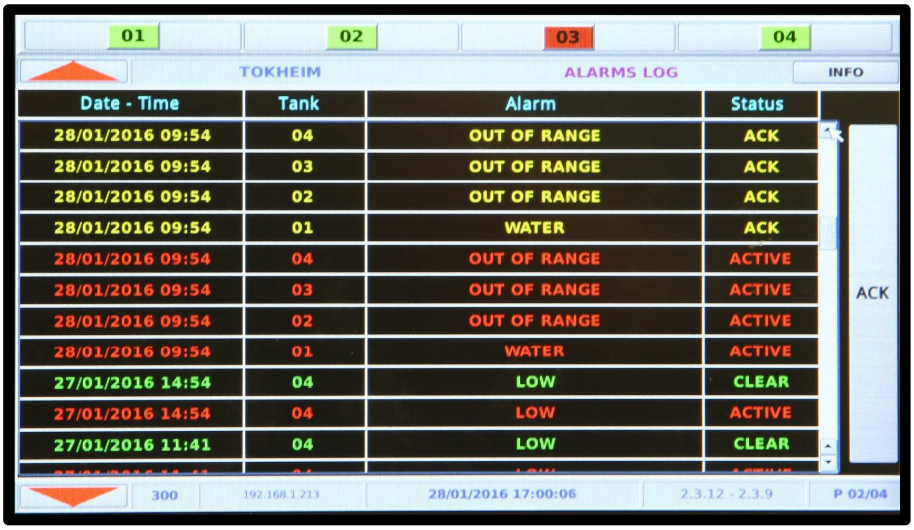


The following table lists the page elements:

Element	Description
Number	Sensor type: • 1 – Internal sensor (up to 6) • 2 – Tri-state external sensor (optional) • 3 – External expansion card from Start Italian Srl (optional)
Progressive number	Progressive number on the type of sensor
Description	See description status of the sensor in the manual "Console Configuration"
Sensor state	Sensor state description (NORMAL, NOT INSTALLED, NOT DEFINED, CLOSED, OPEN)
Time	Actual time

7.1.5 Alarm Log

The following image shows an example of the "Alarm Log":



The following table lists the page elements:

Element	Description
Date - Time	Date and time of alarm
Tank	Tank Number
Alarm	Tank status
Type	Alarm type: • ON (red): Active Alarm • CLEAR (green): Resolved alarms • ACK (yellow): The alarm is acknowledged
ACK	Button to acknowledge all active alarms

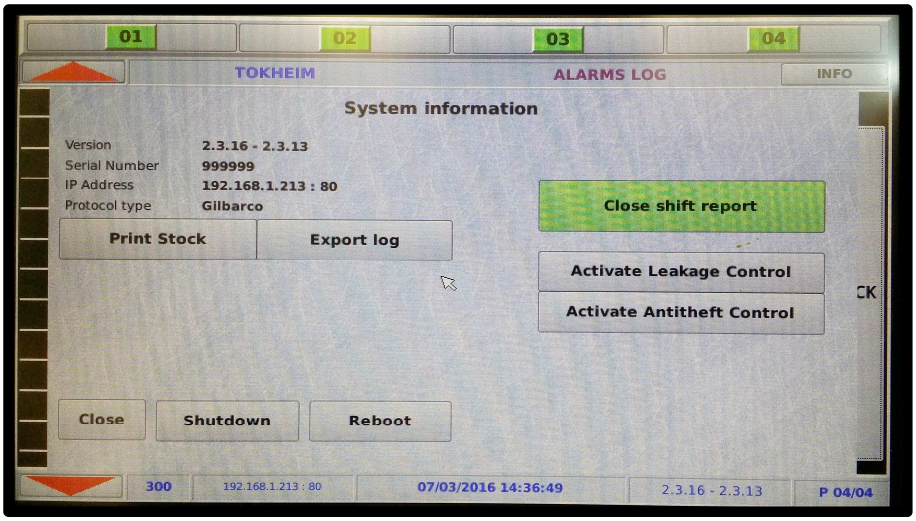
When each new alarm, the console emits an audible sound.

To acknowledge, the user has to open this page and press the ACK button.

The audio alarm is deactivated and the alarm is marked in yellow to signify acknowledged. If there is a relay associated with the alarm relay, it will remain active as long as the alarm is present. The ACK button acknowledges the audible alarm but does not change relay signalling.

7.1.6 INFO

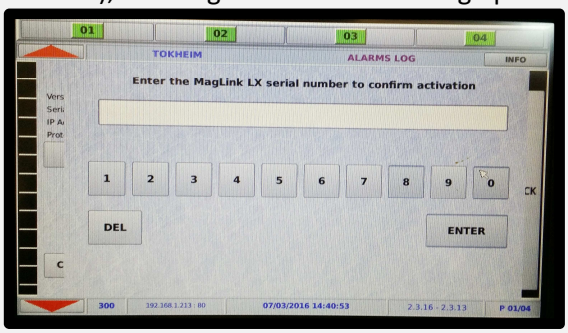
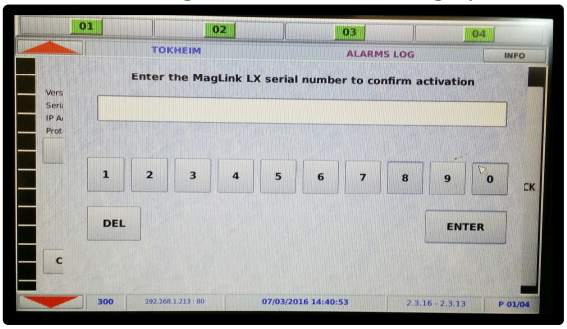
The following image shows an example of the page "INFO":



The following table lists the page elements at the left of the page:

Element	Description
Version	Console software version
Serial number	Unique serial number of the console
IP address	Unique IP address of the console
Protocol Type	Communication protocol currently set

The following table lists the page buttons:

Button	Description
Print inventory	Prints the current inventory report
Export Log	Exporting the information log to a USB devices (The button appears if a USB device is connected)
Download from USB	Download the latest software from the USB device (The button appears if a USB device is connected
Update	Software update (Not present until the upload from the USB is complete) The console is automatically restarted after the update.
To restore a previous Backup	Restoring a previous backup configuration from the USB devices (The button appears if a USB device is connected The console is automatically restarted after the update..
Close	Close the INFO page
Power Off	Console power off
Restart	Restarts the console application
Close manual shift report	Manual closure of the current Shift Reports and opening a new one (By pressing the button, the console displays the following message: "Closing shift reports and opening the next one. Would you like to proceed?")
Activate Static Leakage Control following EPA rules. At least 2 hours is needed to generate the result. The result is generated only if a leakage has been detected and it is written in the Delivery/Leakage page marked as red line	Button to activate static Leakage control (Not present if the page "Reconciliation" is active); Pressing the button will bring up the following window:  Enter the Serial Number of the console (6 digits) and press ENTER to confirm (Use DEL to delete incorrect digits) If Reconciliation is active the leakage is Dynamically activated whenever all the nozzle are in “rest” position. If at least 2 hours elapse in this conditions then the algorithm is activated, otherwise it will abort. Dispenser and nozzle configuration is required for a proper operation.
Activate Anti-theft Control. After 10 minutes from the activation waiting for stabilization if there is any loss the console generate an alarm instantaneously, in the same way done for the Leakage control, without waiting the minimum of 2 hours of elapsed time	Button to activate Anti-theft control (Not present if the page "Reconciliation" is active); Pressing the button will bring up the following window:  Enter the Serial Number of the console (6 digits) and press ENTER to confirm (Use DEL to delete incorrect digits) Remember to deactivate this functionality before starting to use the dispenser otherwise it will trigger the alarm.

8 MANUAL UPDATE PROCEDURE

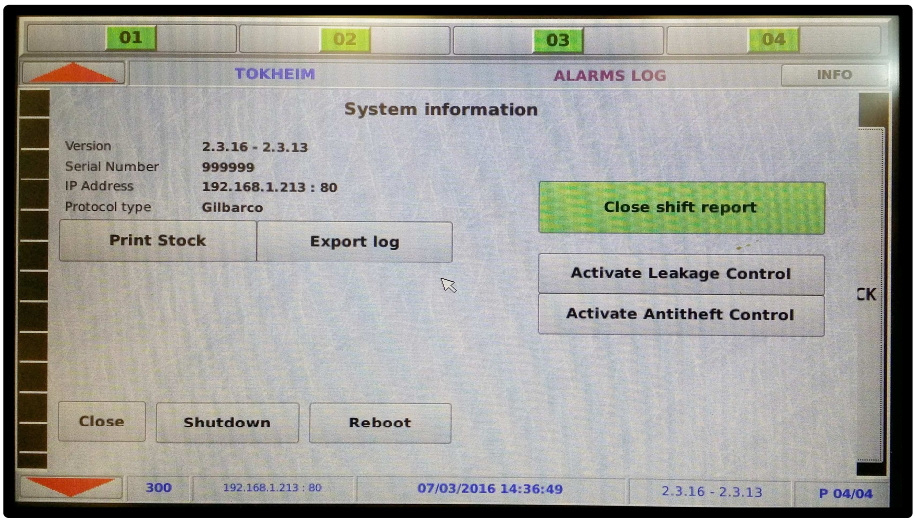
The console can be periodically updated by downloading the latest version of the application files from the site www.startitaliana.it (Section MagLink-LX, ZIP format).

The following table shows the necessary procedure steps for updating such data:

Step	Description
1	Provide a USB device  ATTENTION: The USB device must be formatted to FAT32
2	Downloading the latest version of the application files for the START web site
3	Use a USB device with at least 50 MB of free space available
4	Connect the USB device to a PC
5	Create a folder on the USB device named "lx-update" (All in lower case)
6	Extract the ZIP file in the "lx-update" USB device
7	Connect the USB device to the console
8	Press the "INFO" button and access the relevant page
9	Wait until the "Download from USB" appears on the screen and then press it (The files on the device are copied to the console)
10	Press the "Update" button to apply the update
11	The update process is completed with the reboot of the console

9 PRINT INVENTORY

The console can be connected to a Sprint serial printer through the RS232 serial port. Once connected, the user can print the current inventory .



The following table shows the necessary procedure steps for printing stock:

Step	Description
1	Connect the Sprint printer to the console RS232 port using a CX cable
2	Press the "INFO" button and access the relevant page
3	Press the button "Print stock" and wait for printing

Via the console configuration you can turn on automatic printing of various events such as:

- Alarms
- Shift report
- Delivery
- Losses
- Reconciliation

Refer to the Configuration Manual.

10 SHIFT REPORT

The console can produce a Shift Report.

The shift report can be manually triggered or it can be automatically configured. You can configure multiple daily Shift reports.

The following table shows the necessary procedure steps for managing such Shift Reports:

Step	Description
1	Press the "INFO" button and access the relevant page
2	Press the button "Close shift report" and confirm the subsequent message (The current Shift Report is closed with a new shift automatically started)

You can access the page "Shift Report" and view the daily Shift Report data of, as per paragraph 7.1.2.7 "Tank Details/Shift Report."

If you have configured the automated Shift reports by manually pressing Closure of Shift Reports from the Info Page this closes the Shift Report in progress and opens the next one which will then be automatically closed at the next scheduled date.

If a delivery is in progress, the value of the final volume of the Shift Report is equal to the volume in tanks prior to commencement of Delivery.

11 MAINTENANCE

Maintenance activities are defined and managed in accordance with EN 60079-17.

	IMPORTANT: Maintenance must be carried out only by authorized personnel or by the manufacturer

	IMPORTANT: Maintenance of electrical connections must be performed only by personnel trained and experienced (Refer to the installation manual of the console)

	IMPORTANT: The opening of the console can compromise the level of safety of the equipment, maintenance operations must only be performed by authorized personnel or by the manufacturer

	IMPORTANT: Changes to the console are prohibited unless authorized by the manufacturer

	ATTENTION: Periodically check for cleanliness and integrity of the equipment and its connections

	ATTENTION: To clean the screen and the console use a monitor/screen/TV cleaning cloth

	IMPORTANT: Do not use compressed air or liquid detergents to perform console and screen cleaning

12 SUPPORT

If you need direct assistance from a Start Italiana S.r.l. technician the best solution is to connect the console to the Internet .The console requires public IP address and port 80 opened. All data of interest to the console can then be viewed directly by Start Italiana S.r.l. staff.

An alternative is to use third-party programs (Team Viewer 7 can be downloaded form the START Web Site under the heading Assistance/Support) to allow a connection between the remote computer the console must be connected to the computer to which Start Italiana S.r.l. will connect remotely.

In the case where Internet access is not possible the user must still provide Start Italiana S.r.l. with data relating to the console for the execution of the debugging process.

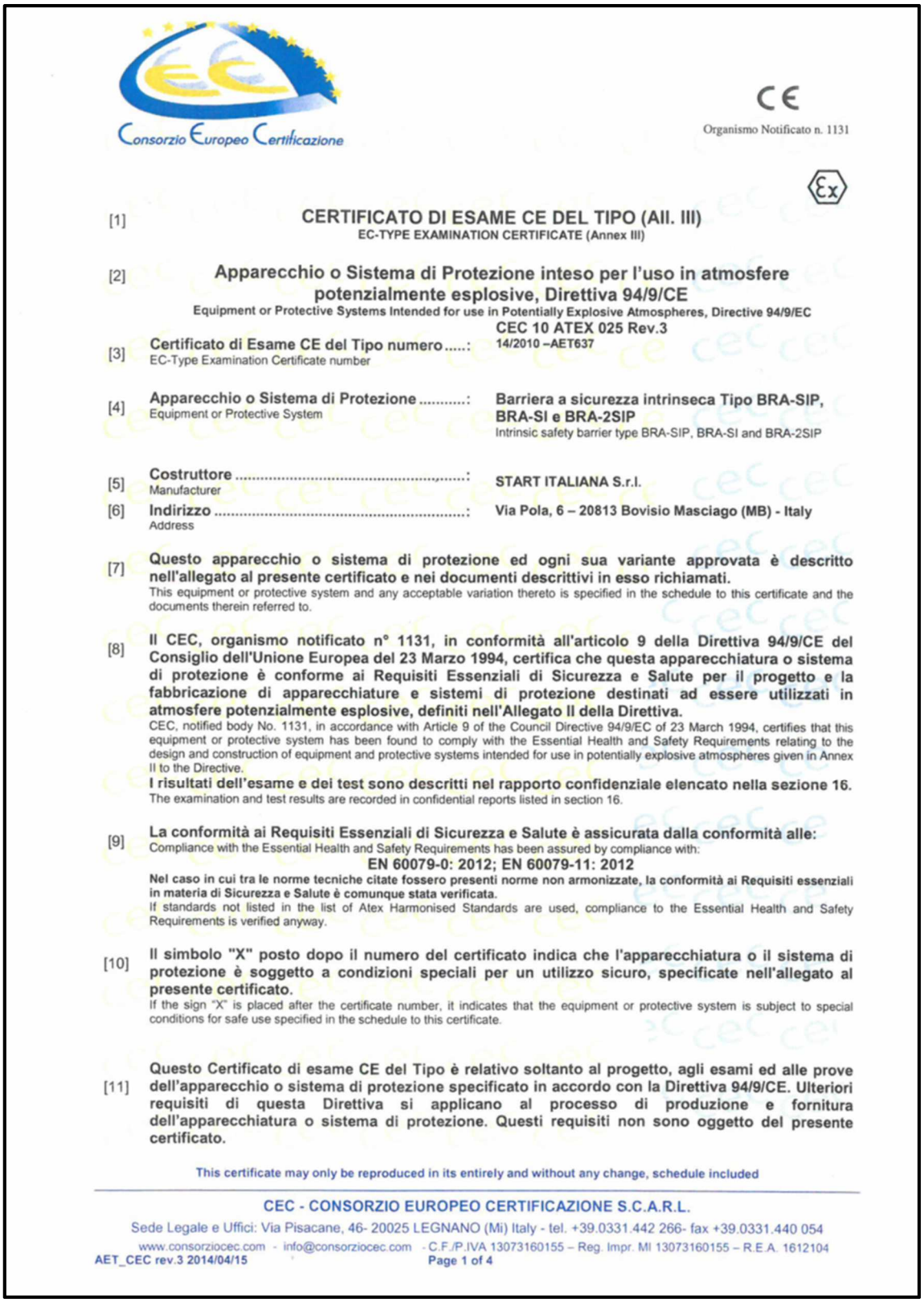
The following table shows the necessary procedure steps for the provision of such data:

Step	Description
1	Provide a USB device with at least 50 MB of free space available  ATTENTION: The USB device must be formatted to FAT32
2	Connect the USB device to a PC
3	Create a folder on the USB device named "lx-support" (All in lower case)
4	Connect the USB device to the console
5	Press the "INFO" button and access the relevant page
6	Wait until the "Export Log" appears on the screen and then press it (The files are copied to your device in the console)
7	Perform a compression of the "lx-support" folder and send the ZIP file by e-mail to assistenza@startitaliana.it

13 SAFETY INSTRUCTIONS

Safety instructions are annexed to this document.

14 CERTIFICATION



Consorzio Europeo Certificazione

CE

Organismo Notificato n. 1131

Ex

[1] **CERTIFICATO DI ESAME CE DEL TIPO (All. III)**
EC-TYPE EXAMINATION CERTIFICATE (Annex III)

[2] **Apparecchio o Sistema di Protezione inteso per l'uso in atmosfere potenzialmente esplosive, Direttiva 94/9/CE**
Equipment or Protective Systems Intended for use in Potentially Explosive Atmospheres, Directive 94/9/EC

[3] **Certificato di Esame CE del Tipo numero.....:** **CEC 10 ATEX 025 Rev.3**
EC-Type Examination Certificate number **14/2010 –AET637**

[4] **Apparecchio o Sistema di Protezione .....:** **Barriera a sicurezza intrinseca Tipo BRA-SIP, BRA-SI e BRA-2SIP**
Equipment or Protective System Intrinsic safety barrier type BRA-SIP, BRA-SI and BRA-2SIP

[5] **Costruttore .....:** **START ITALIANA S.r.l.**
Manufacturer

[6] **Indirizzo .....:** **Via Pola, 6 – 20813 Bovisio Masciago (MB) - Italy**
Address

[7] **Questo apparecchio o sistema di protezione ed ogni sua variante approvata è descritto nell'allegato al presente certificato e nei documenti descrittivi in esso richiamati.**
This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] **Il CEC, organismo notificato n° 1131, in conformità all'articolo 9 della Direttiva 94/9/CE del Consiglio dell'Unione Europea del 23 Marzo 1994, certifica che questa apparecchiatura o sistema di protezione è conforme ai Requisiti Essenziali di Sicurezza e Salute per il progetto e la fabbricazione di apparecchiature e sistemi di protezione destinati ad essere utilizzati in atmosfere potenzialmente esplosive, definiti nell'Allegato II della Direttiva.**
CEC, notified body No. 1131, in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.
I risultati dell'esame e dei test sono descritti nel rapporto confidenziale elencato nella sezione 16.
The examination and test results are recorded in confidential reports listed in section 16.

[9] **La conformità ai Requisiti Essenziali di Sicurezza e Salute è assicurata dalla conformità alle:**
Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0: 2012; EN 60079-11: 2012
Nel caso in cui tra le norme tecniche citate fossero presenti norme non armonizzate, la conformità ai Requisiti essenziali in materia di Sicurezza e Salute è comunque stata verificata.
If standards not listed in the list of Atex Harmonised Standards are used, compliance to the Essential Health and Safety Requirements is verified anyway.

[10] **Il simbolo "X" posto dopo il numero del certificato indica che l'apparecchiatura o il sistema di protezione è soggetto a condizioni speciali per un utilizzo sicuro, specificate nell'allegato al presente certificato.**
If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

[11] **Questo Certificato di esame CE del Tipo è relativo soltanto al progetto, agli esami ed alle prove dell'apparecchio o sistema di protezione specificato in accordo con la Direttiva 94/9/CE. Ulteriori requisiti di questa Direttiva si applicano al processo di produzione e fornitura dell'apparecchiatura o sistema di protezione. Questi requisiti non sono oggetto del presente certificato.**

This certificate may only be reproduced in its entirely and without any change, schedule included

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www.consorziocec.com - info@consorziocec.com - C.F./P.IVA 13073160155 – Reg. Impr. MI 13073160155 – R.E.A. 1612104
AET_CEC rev.3 2014/04/15 Page 1 of 4

CEC – CONSORZIO EUROPEO CERTIFICAZIONE

Certificato di Esame CE del Tipo

EC-Type Examination Certificate

CE

Organismo Notificato n. 1131

This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

[12] **L'apparecchiatura o sistema di protezione deve riportare i seguenti contrassegni:**
The marking of the equipment or protective system shall include the following:

Barriera BRA-SIP, BRA2SIP:

Ex II (1) G [Exia] IIB

FISCO power supply U_m= 250 V [Exia] IIB

Barriera BRA-SI:

Ex II (1) G [Exia] IIB

FISCO power supply U_m= 400 V [Exia] IIB

Legnano, 18 02 2015

CONSORZIO EUROPEO CERTIFICAZIONE
L'ORGANO DELIBERANTE

Il Direttore Tecnico
(A. FUGAZZI)

Il Direttore Generale
(L.TIMOSSI)

ACCREDIA
L'ENTE ITALIANO DI ACCREDITAMENTO

PRD n° 114B ISP n° 071E

Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreement

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Page 2 of 4

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Certificato di Esame CE del Tipo
EC-Type Examination Certificate

CE
Organismo Notificato n. 1131

[13] **ALLEGATO** – SCHEDULE

[14] **CERTIFICATO DI ESAME CE DEL TIPO n° CEC 10 ATEX 025 Rev.3**
to EC-TYPE EXAMINATION CERTIFICATE no. CEC 10 ATEX 025 Rev.3

[15] **Descrizione** – Description

Il dispositivo BRA-SIP è una barriera passiva a sicurezza intrinseca per alimentare e scambiare dati con dispositivi siti in zona pericolosa. La BRA-SIP è dotata di un canale per l'alimentazione e di un doppio canale per l'interfaccia RS485.
The BRA-SIP device is an intrinsic safety passive barrier which is used to power and to exchange data with devices in the hazardous zone. The Bra-SIP has a channel for power supply and it has a dual-channel for the RS485 interface.

Il dispositivo BRA-SI è una barriera completamente isolata galvanicamente per alimentare e scambiare i dati con dispositivi siti in zona pericolosa. Un dispositivo tipico è, ad esempio, un trasmettitore di dati di processo con alimentazione a 12 Vdc ed interfaccia RS485.
The BRA-SI device is a completely galvanically isolated barrier which is used to power and to exchange data with devices in the hazardous area sites. A typical device is, for example, a process data transmitter with a 12 Vdc power supply and a RS485 interface.

Il dispositivo BRA-2SIP è una barriera passiva a due canali per alimentare e scambiare dati con dispositivi siti in zona pericolosa. La barriera è costituita da due unità identiche aventi le stessa configurazione della barriera singola BRA-SIP.
The BRA-2SIP device is a dual-channel passive barrier which is used to power and to exchange data with devices in the hazardous zone. The barrier consists of two identical units (UNIT1 and UNIT2) with the same configuration of the single barrier BRA-SIP.

Caratteristiche nominali / Dati Elettrici – Rated characteristics / Electrical data

BRA-SIP e BRA-2SIP:

Alimentazione/Power = **14 Vmax**
- Um= 250 V
- Io= 100 mA
- Lo= 1.5 mH
- Po= 0.153 W
- Uo= 14 Vmax
- Co= 3.55 µF

Ree (5-3) = 15.3Ω

DATA I/O = 6 Vmax
- Um= 6 V
- Io= 100 mA
- Lo= 6 mH
- Po= 0.126 W
- Uo= 6 Vmax
- Co= 40 µF

Ree (8-1) = 12.6 Ω

BRA-SI:

Alimentazione/Power = **18…25 Vmax**
- Um= 400 V
- Io= 100 mA
- Lo= 1.5 mH
- Po= 0.153 W
- Uo= 14.05 Vmax
- Co= 3.55 µF

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Certificato di Esame CE del Tipo
EC-Type Examination Certificate

CE
Organismo Notificato n. 1131

[13] **ALLEGATO** – SCHEDULE

[14] **CERTIFICATO DI ESAME CE DEL TIPO n° CEC 10 ATEX 025 Rev.3**
to EC-TYPE EXAMINATION CERTIFICATE no. CEC 10 ATEX 025 Rev.3

DATA I/O = 12 Vmax
- Um= 12 V
- Io= 100 mA
- Lo= 6 mH
- Po= 0.126 W
- Uo= 6 Vmax
- Co= 40 µF

Test di Routine / Routine tests
EN 60079-11 §11.1: Routine tests for diode safety barriers

Avvertenze di targa / Warning label
None

[16] **Rapporto numero** / Report Number: **CEC 14/2010 – RET 001**

[17] **Condizioni speciali per un utilizzo sicuro** – Special conditions for safe use

Nessuna – None.

L'efficacia e l'affidabilità di questi apparecchi sono garantite seguendo le istruzioni del Manuale d'uso. Non sono ammesse modifiche non autorizzate rispetto al fascicolo tecnico agli atti.
Special conditions for safe use depends on correct following of manufacturer's manual. Further modification are not allowed.

[18] **Requisiti Essenziali di Sicurezza e Salute** – Essential Health and Safety Requirements

Nessuno – None. **Riguardo ai Requisiti Essenziali di Sicurezza e Salute questo documento verifica la conformità solo agli standard Ex. La dichiarazione di Conformità del Produttore dichiara la conformità con altre Direttive pertinenti.**

Concerning EHSR this schedule verifies the compliance with the Ex standards only. The manufacturer's Declaration of Conformity declares compliance with other relevant Directives.

[19] **Documenti descrittivi** – Descriptive documents

I documenti di riferimento listati di seguito costituiscono la documentazione tecnica dell'apparecchio o sistema di protezione oggetto di questo certificato. Questi documenti sono confidenziali e sono a disposizione delle sole autorità competenti.
Una copia di questi documenti è conservata presso l'archivio del CEC.
The descriptive documents quoted hereafter constitute the technical documentation of the equipment or protective system, subject of this certificate. This documents are confidential and they are available only to the authorities.
One copy of all documents is kept in CEC files.

Fascicolo tecnico, AR15ExTR001

L'ISPETTORE INCARICATO
Dott. Ing. Giuseppe TERZAGHI

Organo deliberante Antonio FUGAZZI Data: 18/02/2015

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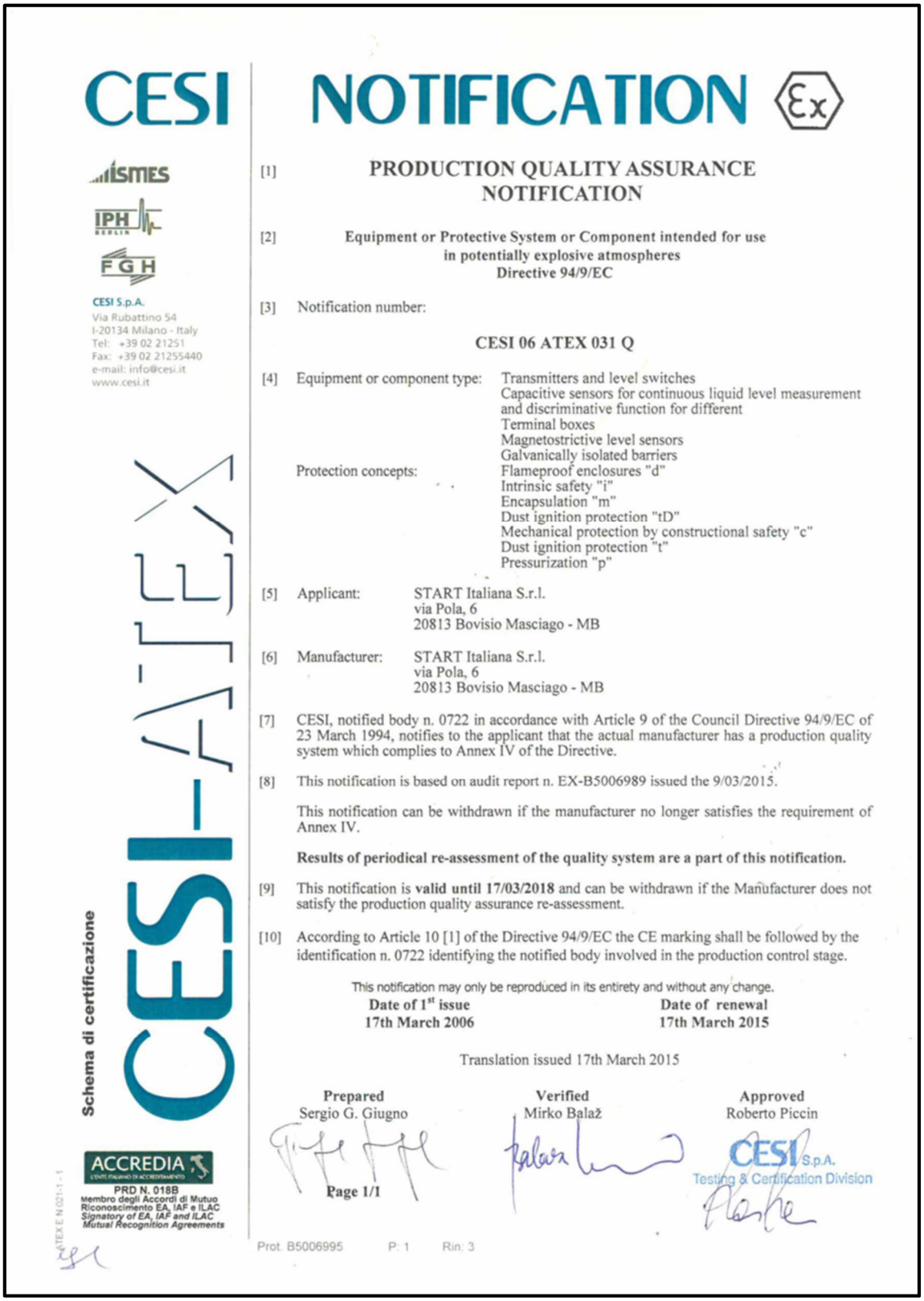
15 NOTIFICATION



CESI

NOTIFICATION

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CESI-ATEX

Schema di certificazione

ACCREDIA
PRD N. 018B
Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreements

[1] **PRODUCTION QUALITY ASSURANCE NOTIFICATION**

[2] **Equipment or Protective System or Component intended for use in potentially explosive atmospheres Directive 94/9/EC**

[3] Notification number:

CESI 06 ATEX 031 Q

[4] Equipment or component type: Transmitters and level switches
Capacitive sensors for continuous liquid level measurement and discriminative function for different
Terminal boxes
Magnetostrictive level sensors
Galvanically isolated barriers

Protection concepts: Flameproof enclosures "d"
Intrinsic safety "i"
Encapsulation "m"
Dust ignition protection "tD"
Mechanical protection by constructional safety "c"
Dust ignition protection "t"
Pressurization "p"

[5] Applicant: START Italiana S.r.l.
via Pola, 6
20813 Bovisio Masciago - MB

[6] Manufacturer: START Italiana S.r.l.
via Pola, 6
20813 Bovisio Masciago - MB

[7] CESI, notified body n. 0722 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, notifies to the applicant that the actual manufacturer has a production quality system which complies to Annex IV of the Directive.

[8] This notification is based on audit report n. EX-B5006989 issued the 9/03/2015.

This notification can be withdrawn if the manufacturer no longer satisfies the requirement of Annex IV.

Results of periodical re-assessment of the quality system are a part of this notification.

[9] This notification is **valid until 17/03/2018** and can be withdrawn if the Manufacturer does not satisfy the production quality assurance re-assessment.

[10] According to Article 10 [1] of the Directive 94/9/EC the CE marking shall be followed by the identification n. 0722 identifying the notified body involved in the production control stage.

Date of 1st issue	Date of renewal
17th March 2006	17th March 2015

Translation issued 17th March 2015

Prepared	Verified	Approved
Sergio G. Giugno	Mirko Balaž	Roberto Piccin

CESI S.p.A.
Testing & Certification Division

Page 1/1

Prot. B5006995 P: 1 Rin: 3

16 REVISIONS

The following table lists the revisions to the document:

Revision No.	Date	Description	Firmware Revision
01	March 2014	Issue	1.0.0
02	February 2015	Added com ports inversion	2.0.0
03	March 2015	Addition of an application description section	2.0.0
04	April 2015	Addition of a certification and notifications section	2.1.x
05	April 2015	Addition of a new test report, audit certification and notifications section	2.1.x
06	July 2015	Addition of a manual update section, information on reconciliation, shift reports, stock releases, support, program description	2.2.x
Revision	Date	Description	Verison_SW
08	January 2016	Revision with photos	2.2.x
09	April 2016		2.4

Manufacturer_name

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