



MDHQSPC (V 3.6)



1	INTRODUCTION	4
2	TIP OF THE DAY	4
3	QUICK START GUIDE	5
3.1	COMPLETE INTERFACE: GRAPHIC AND TABLED	6
3.	1.1 Configuration	6
3.	1.2 Addressing	8
3.	1.3 On-line mode	10
3.2	Semplified Interface: Tabled Only	12
3.2	2.1 Configuration	12
3.2	2.2 Addressing	14
3.2	2.3 On-line mode	16
4	CONFIGURATION: "COMPLETE" INTERFACE – GRAPHIC MODE	18
4.1	MANUAL CONFIGURATION (OFF-LINE)	19
4.	1.1 Test COM port	19
4.	1.2 Net(s) Insert/Delete	20
4.	1.3 Net Configuration	21
4.	1.4 Unit(s) Insert/Delete	23
4.	1.5 LVDI Unit Configuration	24
4	1.0 LVD1-2 Unit Configuration	27
4	1.7 I/O Unit Configuration	50
4	1.0 Analogic Input Unit Configuration	32
4.	1.9 Incremental Digual of Analog Encoder Unit Configuration	33
4.2 1	2.1 COM Part selection	39
13		
ч.5 Д Д		40
4.4	CHECK CONFIGURATION	40
4.6	SAVE ABORT CONFIGURATION	40
4.0	APPLY CONFIGURATION	41
5	APPLY CONFIGURATION: "COMPLETE" INTERFACE – GRAPHIC MODE	43
5 1	Net View	45
5.1	INET VIEW	43
5.2	2.1 IVDT Unit View	54
5	2.1 EVDT ONT VEW	54 56
5	2.2 EVDT 2 Ond View	50 58
5	2.4 Analogic Input Unit View	50 60
5.2	2.5 Incremental Digital or Analog Encoder Unit View	
5.3	Edit Configuration	
5.4	Addressing Session	65
5.4	4.1 Start	65
5.4	4.2 Resume	65
5.4	4.3 Replace Unit	65
5.4	4.4 Advanced Addressing	66
5.4	4.5 Start Addressing Operation	67
5.4	4.6 Termination of Addressing operation	67
5.4	4.7 Manual Addressing	68
5.4	4.8 Automatic Addressing	87
5.5	DOWNLOAD ON-LINE SESSION	89
5.6	CHECK ON-LINE SESSION	90
5.7	OPERATIVE ON-LINE SESSION	91
6 MOI	CONFIGURATION AND ON-LINE: "COMPLETE" OR "SIMPLIFIED" INTERFACE – TABLE DE	D 123
61	Alitomatic Configue ation (Only the with Haddwade set e detection)	124
62	AUTOWATIC CONFIGURATION (ON-LINE WITH HARDWAKE SELF-DETECTION)	124
63	REPLACING AN UNIT	120
64	OFF-LINE CONFIGURATION EDITING	129
U.T	OTT DIAL CONTIOURATION EDITING	12)



0.4.1	Sensor channel(s) Configuration Edit	
6.4.2	I/O port(s) configuration Edit	
6.5 S	YNCHRONISMS CONFIGURATION	
6.5.1	Synchronism cabling	
6.5.2	Temporal Synchronism	
6.5.3	Spatial Synchronism	
6.5.4	Input Synchornism	
6.6 P	RINT/COPY CONFIGURATION	
6.7 C	HECK CONFIGURATION	
6.8 C	PERATIVE ON-LINE SESSION	
601	Encoder Calibration	130
0.0.1	Encoder Calibration	
7 API	ENDIX	
 7 API 7.1 K 	PENDIX	
0.8.1 7 API 7.1 K 7.2 D	PENDIX PENDIX EYBOARD USE RIVERS FOR WIN32 PLATFORMS	
7 API 7.1 K 7.2 D 7.2.1	PENDIX EYBOARD USE RIVERS FOR WIN32 PLATFORMS Interface RS232	139 139 139 141 141 141
7 API 7.1 K 7.2 D 7.2.1 7.2.2	PENDIX PENDIX	139 139 139 141 141 141 141
7 API 7.1 K 7.2 D 7.2.1 7.2.2 7.2.3	PENDIX	139
7 API 7.1 K 7.2 D 7.2.1 7.2.2 7.2.3 7.2.4	PENDIX	139 139 139 141 141 141 141 142 142
7 API 7.1 K 7.2 D 7.2.1 7.2.2 7.2.3 7.2.4 7.2.5	PENDIX PENDIX RIVERS FOR WIN32 PLATFORMS Interface RS232 Interface (2 ports) Board ISA Interface (2 ports) Board PCI Interface FullSpeed USB [12Mbps] Interface HighSpeed / FullSpeed USB [480Mbps / 12Mbps]	139 139 139 141 141 141 141 142 142 142 144



1 Introduction

MDHQSPC Driver Programmer allows creating, editing and testing configuration used by MDHQSPC Driver. It allows to design hardware configuration and perform a complete setup without hardware connection. If hardware is available it can also self detect hardware, test connection, check configuration and run it.

2 Tip of the Day

When MDHQSPC Driver Programmer starts with a new configuration it starts with the Simplified Interface while for any configuration previously saved it starts with the last Interface memorised (Simplified or Complete). But before you can do anything the MDHQSPC Driver Programmer shows a panel that allows you to read the tip of the day. You can deselect the option for showing these tips at startup or if you prefer keep on reading the next tips. Closing the "Tip of the Day" panel you could go on the appropriate Interface programming layout.

MARPOSS S.p.A Digi Crown Probing Line Driver [3	3.5.0] - [Configuration E	dit]		
File Options Help				
HW Configuration Synchronism Cabling	nchronism			
Networks Net 1				
Number of networks				
	id you know		COM Devices again Marposs COM Device	
You can choose the Com	plete Layout checking	g: 'Options' >	Serial Number	Statu
Programming Layout > 'C	complete: Graphic and	a l'abled.		Unkni Unkni
			0	Unkni
			1	
Show tips at startup	Next <u>T</u> ip	Close		
)	
]	2
Automatic (On-Line with Hardware self-detection)	R	Q	.	
Addressing: Start	Save and Exit	Check	<u>A</u> bort and Exit	

The chosen about the "Show tips at startup" is saved with the configuration data and thus the MDHQSPC Driver Programmer will later automatically open with or without it. However, it is always possible to change this choice or reading other tips showing the tips by means of Help / Tip of the Day menu.

The "Simplified" Interface programming layout starts by default and works only in tabled mode, although it is always possible to enable "Complete Interface" at a later time by means of Options / Programming Layout menu. With this layout you can make configuration, addressing and operative online session all within a simplified tabled environment.

On the other hand, "Complete" Interface programming layout works only in graphic mode, although it is possible to switch between graphic mode and tabled mode at any time through corresponding menu entries or tool buttons. Choose this option if you prefer a graphic approach, quite similar to previous versions of the programming DLL.

The chosen option ("complete" or "simplified") is saved with the configuration data and thus the MDHQSPC Driver Programmer will later automatically open with the programming layout desired. As said above, it is always possible to change this choice by means of Options / Programming Layout menu.

If you are working with "Simplified" Interface programming layout, you can go directly to chapter 6.



3 Quick Start Guide

This manual provide all the instructions to be able to use DigiCrown driver, in addition to the detailed explanation of each single function, you could find at the beginning e **quick start** section that will allow to **run your first DigiCrown net in 3 step.** From that point on, you can explore the driver functionality alone or run your first application.





3.1 Complete Interface: Graphic and Tabled

3.1.1 Configuration





T MARPOSS S.p.A.	
Eile Users Net Windows Options Help	
COM Ports Selection	
# COM Serial Number Status	
COM1 Unknown Status	
COM4 07DN3751 Connection Possible	
(3)	
COM4 07DN3751 (4)	
DigiCrown Probing Line USB/CQ/	
<u>Z</u> DeleteiCOM4Qk	
Hardware Configuration Options	
C Manual (Off-Line)	III
<u>Automatic</u> (On-Line with Hardware self-detection)	Qk

Demonstration of the second se	
Eile Users HW Conf Net Windows Options Help	
Net.01 - 07DN3751	
	स
Code Serial Number Sw Version Enable 🍋 🔎	
Image: Proceeding of the second se	
Com4 V 115200 V 208.3k V 1 V	
Dave Abort	
Z Delete COMI	
Net/s) Insert /Delete	
Image: sector sector index particular Image: sector index particular Image: sector index particular Image: sector index particular Image: sector index particular Image: sector index particular Image: sector index particular Image: sector index particular Image: sector index particular Image: sector index particular Image: sector index particular Image: sector index particular Image: sector index particular Image: sector index particular Image: sector index particular Image: sector index particular Image: sector index parting index particular <tr< td=""><td>Abort and Exit</td></tr<>	Abort and Exit



3.1.2 Addressing













3.1.3 On-line mode





D MARPOSS S. p. A.	
File Users Net Windows Options Help	
🗅 New Ctrl+N 🦻 🖻 🚺	
E Chara Chul+C	
SaveAs Ctrl+5 8	
Close Ctrl+C	
Exit Alt+F4	
🕙 Unit.01 / Net.01 🛛 🕙 Unit.02 / Net.01 🔀 🗐 Unit.03 / Net.01 🔀	



3.2 Semplified Interface: Tabled Only

3.2.1 Configuration



Now it is possible to start the addressing procedure (Next paragraph); or to start the On-line mode.







3.2.2 Addressing





MARPOSS S.p.A Digi Crown Probing Line Driver [3.5.0] - [Configuration Edit]			
Eile Options			
HW Configuration Sensor(s) Temporal Synchronism			
Networks Net 1			
Number of networks			
Net Enable Code Serial Number Sw Version COM USB Baud Units Baud Units 1 1 1 1000000000000000000000000000000000000	2 COM	18	
	# COM	Serial Number	Stati 木
Digi Crown Probing Line Driver	🖉 10 сом1:	3	Unkr
Unit(c) addressing: sould addresses/data be sleaved 2		5 YUSB-HSS-8	Unkr
Unic(s) addressing. Could addresses/ data be tieared ?	12 COM10	5 YUSB-HSS-1	Unkr
	₩ 14 COM1	/ 8 11DN5767	
	€15 COM19	9 10DN4449	Unkr
	<		>
	COM18 11DN576	57	
	DigiCrown Probing Li	ne USB-HS	
Automatic (On-Line with Hardware self-detection)	Q		
Addressing: Start	Check	<u>A</u> bort an	d Exit

HARPOSS S.p.A Digi Crown Probing Line Driver [3.5.0] - [Configuration Edit]								
<u>File</u> Options	<u>File</u> <u>O</u> ptions							
HW Configuration	HW Configuration Sensor(s) Temporal Synchronism							
Networks Net 1								
Unit Enable #1 Enable #2	Туре	Ident.	Code	Serial Number	Sw ¥ersion	Sensor	Input/Output	
	Digital LVDT-2 75 kH	2 1	767X200400	08DN5745	version1.0	2/		
2	Digital LVDT 75 kH:	2 2	767×000010	07DN1740	version1.3	1		
Automatic (On-Line with Har	dware self-detection)	$\underline{\cdot}$		H		Q.		Π
Addressing: Stop	Waiting: Senso	rЗ	Save	and Exit		Check		Abort and Exit







۱	🏐 MARPOSS S. p. A Digi Crown Probing Line Driver [3.5.0] - [Configuration Edit]												
Eile													
	HW Configuration Sensor(s) Commonal Synchronism												
	Lnannei	туре		Enable	Sensor	Direction	UNIC	Arm Ratio	measure mode	Range	Sensibility	Sensibility Adju	st Pre-I
▶	1	Digital LVD I-2	Net.1/Unit.1	~	1	Backward	mm	1.000000	relative	05.0000	115.000	1.00000	
	2	Digital LVDT-2	Net.1/Unit.1		2	Backward	mm	1.000000	relative	05.0000	115.000	1.00000	
	3	Digital LVDT	Net.1/Unit.2	•	3	Backward	mm	1.000000	relative	05.0000	115.000	1.00000	
	\frown							6					
	(2)							(7	7)				
	$\underline{}$					_		0					
	> <mark>5tart/S</mark>	top Operative						R		0		.	
) DB						<u>S</u> a	ve and Exit		⊆heck		Abort and Ex	it

HARPOSS S.p.A Digi Crown Probing Line Driver [3.5.0] - [Configuration Edit]								
Ele Options								
HW Configuration 🖸 Sensor(s) 🗧 Temporal Synchronism	Measure Mode							
Thannel Type Unit Enable Sensor Dire	ection Unit Arm Ratio Me	easure Mode	ıst Pre-					
L: 0,4754 Digital LVDT-2 Net.1/Unit.1 1 Back	kward mm 1.000000 rel	ative 5.000	[mm]					
2 Back 2: 1,7276 Digital LVDT-2 Net.1/Unit.1	kward mm 1.000000 rel	lative Sensibility						
3: 0,6912 Digital LVDT Net. 1/Unit. 2 🖌 3 Back	kward mm 1.000000 rel	lative 115.000	[mV/mm/V]					
3		Sensibility Adjus	st					
		ON OFF	[mm]					
		C ON OFF	[mm]					
		Linearization ON Retentive Da	C OFF					
6		(5) Save Abo	f Close					
■ Start/Stop Operative 4	L Save and Exit	C C Check	Abort and Exit					

4 Configuration: "Complete" Interface – Graphic Mode

When MDHQSPC Driver Programmer starts with an empty configuration loaded it shows an option panel that allows you to select the mode for hardware configuration setup.

HARPOSS S.p.A Digi Crown Probing Line Driver [3.5.0]	
File Net Windows Options	
Configuration not loaded	<u> </u>
	~
Hardware Configuration Options	
Manual (Off-Line)	
Automatic (On-Line with Hardware self-detection)	
Iry to detect old hardware units	

Figure 1: MDHQSPC Driver Programmer, complete interface layout (Example with empty configuration loaded)

The modes for hardware configuration setup are:

• **Manual (Off-line)** - User designs hardware configuration and programs parameters manually: since configuration can be completed and saved without any request to connect hardware, this option allows user to set up a complete configuration offline.

• Automatic (On-line with Hardware self-detection) - Hardware is automatically recognised and acquired without any intervention by the side of user.



4.1 Manual configuration (Off-line)

This mode allows you to perform manual design of hardware configuration: since it can be completed and saved without any request of hardware connection, manual setup is completely **off** –**line**.

4.1.1 Test COM port

If hardware is available during setup you can connect it and test its connection. A panel shows available COM ports; a button allows you to test COM and identify the device connected to the COM port (leds on DigiCrown Box are turned on when test button is pressed).

After test COM status is reported.

۹ (COM					×
#	# COM Serial N			umber	Status	Туре
	2 COM1 PROTYIc2		Connection Possible Impossible to Connect			
63	Фз	COM4	S.CRE.	0002	Impossible to Connect	DigiCrown Probing Line USB/CO
	Refresh optionally COM port list				optionally selected COM and connected Crown Interface	
•	COM4	Detect Co Detect Ma	rposs COI	s again M Device		Close

Status	Description
Unknown Status	COM port has not been tested
Connection possible	DigiCrown Probing Line Interface device is connected to the COM port and ready to use it. SERIAL NUMBER is showed. No DigiCrown Probing Line Interface device is connected to the
Impossible to connect	COM port
Not operative	Unable to open COM port



4.1.2 Net(s) Insert/Delete

Insert all the DigiCrown Probing Line Interfaces (here called *Net*) you want to use in your configuration. A Net(s) Insert/Delete panel allows to insert and remove a Net (with a generic interface type):

Using a generic interface allows you to drive you want to specify by pressing top-right



type does not involve any limitation and configuration on any type of interface. If interface type, enter the *advanced mode* corner button:

Net(s) Insert/Delete	
	Inserts a COM Interface (1 Net inserted on 1 COM port, real RS232 or virtual USB one)
1+2	Inserts a PCI Card (2 Nets inserted on 2 different COM ports)
1+2	Inserts a ISA Card (2 Nets inserted on 2 different COM ports)
æ	Removes the last Net(s) inserted (last one if COM interface, last two if PCI or ISA Card)

The maximum number of Nets supported into a single configuration is 12.



4.1.3 Net Configuration

When Net insertion has been completed a net configuration panel has been created for each net; use this panel to set up net configuration:

Net.01	Ү-СОМ					
*						
	4 0 0 0 0 0	10 11 11 12 13 14 10 10	16 13 13 13	21 23 23	24 25 26 27	28 30 31
	Code	Serial Number	Sw Version	Enable	•	æ
T USB				X 🗹	Insert	Delete
COM	Baud Units Baud	Group	Label			命
Com1 💌	115200 💌 208.3k			<u> </u>	Save	Abort

USB CheckBox.	
🗖 ЦЅВ	Interface USB Flag. To be checked if Interface is USB/COM type. USB flag checking let system to Play&Play Interface on its connection. Default state is <i>off</i> .
Production Codes.	
Code 767×000000	Interface Code. (Read Only) Self-acquired within Addressing session in On-Line session (see _Addressing Session).
Serial Number 05DN0718	Interface Serial Number. (Read Only) Self-acquired within Addressing session in On-Line mode (see _Addressing Session).
Sw Version version1.0	Interface Software Version. (Read Only) Self-acquired within Addressing session in On-Line mode (see _Addressing Session).

Communication Parameters.

COM	
Com1	•
Com1	•
Com2	
Com3	
Com4	
Com5	
Com6	
Com7	_
Com8	-

COM port related to serial line communication between Host Station and Net. Host Station always views a Net trough a standard COM port.

COM selection is possible aside from current Host Station COM port capability.

Baud	
115200	•
Default	
4800	
9600	
19200	
38400	
57600	
115200	

Baud of RS232 communication between Host Station and Net. Baud values are standard:4800, 9600, 19200, 38400, 57600, 115200 bit/s. *Default* Baud value is 9600.

If RS232 cable length is not excessive, a high Baud (**115200** bit/s) is to be preferred.

	Baud of RS485 communication of internal Network, between
Units Baud	Interface Station and Unit(s).
208.3k Default Baud value is 9600.	
Default If RS485 cable length is not excessive, "208.3k" Baud is to be	
208.3k	preferred independently of Interface and DigiBox versions (supported
2083.3k	in any case).
	If RS485 cable length is not excessive, "625.0k" Baud is to be
	preferred if Interface and all DigiBox versions are at least A3.x.
	If RS485 cable length is not excessive, "2083.3k" Baud is to be
	preferred if Interface and all DigiBox versions are at least A4.x.
Free for User parameter	ers.
	Interface Group.
Group	Interface Group programming (from 1 to 99) is free for user.
1 💌	It is a numeric field.
	Interface Label.
Label	10 characters length string, free for user.
UserFree!!	It is a alpha-numeric field.
,	A A A A A A A A A A A A A A A A A A A
On-Line Enable.	
	Interface Enable.
Enable	Allow globally Net to start the On-Line mode.
▼ X	Default state is <i>enabled</i> .
Save / Abort.	
- Ba	fore saying your configuration you have to save changes on single Net
	nore saving your configuration you have to save changes on single Net
Save Th	ingulation.
	is oution chaptes to save changes on single net configuration.
-	
Th Th	is button enables to abort changes on single Net configuration,
Abort wit	th reloaded of old data.



4.1.4 Unit(s) Insert/Delete

Insert all the DigiCrown Probing Line Box (here called Unit) that you want to use in each Net. To perform a unit insertion first you have to select the type of Unit station by Unit(s) Select buttons on Hardware Configuration Panel.

Unit(s) Select \mathbb{I}

Selects a LVDT Unit for subsequent inserting (default).



Selects a LVDT-2 Unit for subsequent inserting





E k

Selects a I/O Unit for subsequent inserting.

Selects a Digital or Analog Incremental Encoder Unit for subsequent inserting.

After you have selected unit type, press Insert or Delete button into the Net Panel to insert or remove units.

Net.01						
t tt (
H N M	4 I W V W Q		16 17 18 19	20 21 22 23	24 25 26 27	M 83 33
an and an	Code	Serial Number	Sw Version	Enable	-	æ
USB				X V	Insert	Delete
COM	Baud Units Bau	d Group	Label			虚
Com1 💌	115200 🔽 208.3k	• 1 •		_	<u>S</u> ave	س <u>A</u> bort







Insert Unit: the operation is enabled only at the first free location (see figure on the left)



Delete Unit: the operation is enabled only at the last occupied location (see figure on the left).

The maximum number of Units supported into a single Net is 31.



4.1.5 LVDT Unit Configuration

Button indicates a LVDT unit. Click mouse on it to toggle on/off the LVDT Unit Form.

Unit.08 / Net.01		🕒 Unit.03
Ident. Group 8 I 8 I Code 767X0xxxxx Serial Number	Sensor	Ident. G 3 ▼ Code 767×000100 Serial Numb 07DN3493
Sw. Version Enable	18 pb	Sw Version version2.1
	<u></u> I	
Save Abort	e lete	G ave

roup Sensor -5 1 • Direction Backv 🔻 Unit mm • Enable 菌吐 ▼ #1 • 1.000000 Arm Ratio **P** 壷 Delete Abort

/ Net.01

×

Figure 2: LVDT Unit Form

(example for a new unit in Off-Line mode, example for a just existing unit in Off-Line mode)

LVDT Unit Form let user to configure the LVDT Unit. A brief explanation of parameters and panel buttons is reported below.

Production Codes	
Code 767X000000	Unit Code. (Read Only) Self-acquired within Addressing session in On-Line mode (see _Addressing Session).
Serial Number yyDN0001	Unit Serial Number (Read Only) Self-acquired within Addressing session in On-Line mode (see _Addressing Session).
Sw Version version2.1	Unit Software Version (Read Only) Self-acquired within Addressing session in On-Line mode (see _Addressing Session).
T.1	· T '- A d d

Identification Number : Logic Address for communicate with Unit

Ident.	
1	-

Unit Identification Number (Read Only) Identification Number is the Unit logic Address unique in network: it is necessary for communicate with Unit. Identification Number is self-assigned and automatically downloaded into Unit by Tool itself during On-Line Addressing session.



Sensor Channel parameters.

Sensor	
🔻	
	not assigned

Sensor Number.

Sensor Number has to be programmed or is self-assigned within On-Line Addressing session in order to define the flat mapping of measure points.

Sensor Number is null when Unit is inserted.

Sensor Number could be changed if just assigned by a previously Addressing session.



just assigned



Sensor Direction (sign convention).

in order to see this information. Move mouse on

Direction	
backv 💌	
backward	
forward	

bac	kward
forv	vard
Unit	

Unit	
mm	-
mm	
deg	
07	

lar

Backward (default) -

Forward _

Sensor Measure Unit.

- millimeters (default) -
- degrees _
- Celsius degrees _
- grams

Sensor Arm Ratio (unsigned).

from 0.5 to 4.0 (1.0 default)

Arm Ratio	1.000000
COLUMN AND A	1000000



Free for User parameters.

Group	Unit Group . Unit Group programming (from 1 to 99) is free for user. It is a numeric field.
Label UserFree!!	Unit Label. Unit Label is 10 characters length string free for user. It is a alpha-numeric field.
On-Line Enable	
	Unit Fnahla

	Unit Enable.
Enable	Enables LVDT unit to start the On-Line mode.
✓ #1	Default state is <i>enabled</i>

Save and Exit, Abort and Exit, Delete Data

L Save	
會 <u>A</u> bort	

This button **Saves changes** to the current configuration. Unit is closed.

This button **Aborts changes**, with reloaded of old data. Unit is closed.



This button **Deletes relevant data:**

- Code, Serial Number, Sw Version
- Sensor and Sensor Direction

Unit is not closed.



4.1.6 LVDT-2 Unit Configuration

Button indicates a LVDT-2 unit. Click mouse on it to toggle on/off the LVDT-2 Unit Form.

Unit.09 / Net.01			🗐 Unit	.01 / Net.01		
Ident. Group	Sensor	Sensor	Ident.	Group	Sensor	Sensor
9 💌 1 💌	<u> </u>	<u> </u>		2 🔻	1 -	2
Code			Code		Direction	Direction
767X2004xx			767X2004	00	Backward 📃 💌	Backward 🗾
Serial Number			Serial Nu	nber	Unit	Unit
			prot02		mm 💌	mm 💌
Sw Version Enable	🕅 Db # <u>1</u>	资 Db #2	Sw Version version1.0	Enable	🕅 Db #1_	🗟 Db #2
Label 🔽 #2	T #1	□ T #2	Label	✓ #2✓	T #1	Ū_ T #2
				Arm Ratio	1.000000	1.000000
	9	ę 🛛		一面	Ş	¢ (
Save <u>A</u> bort	<u>D</u> e	lete	Save	<u>A</u> bort	<u>D</u> e	lete

Figure 3: LVDT-2 Unit Form

(example for a new unit in Off-Line mode, example for a just existing unit in Off-Line mode)

LVDT-2 Unit Form let user to configure the LVDT-2 Unit. A brief explanation of parameters and panel buttons is reported below.

Production Codes	
Code 767X200400	Unit Code. (Read Only) Self-acquired within Addressing session in On-Line mode (see _Addressing Session).
Serial Number yyDN0002	Unit Serial Number (Read Only) Self-acquired within Addressing session in On-Line mode (see _Addressing Session).
Sw Version version1.0	Unit Software Version (Read Only) Self-acquired within Addressing session in On-Line mode (see _Addressing Session).

Identification Number : Logic Address for communicate with Unit

Ident.	
1	-

Unit Identification Number (Read Only) Identification Number is the Unit logic Address unique in network: it is necessary for communicate with Unit. Identification Number is self-assigned and automatically downloaded into Unit by Tool itself during On-Line Addressing session.



In LVDT-2 unit form, 2 sensors are present: the one on the left is referred to channel 1 and the one on the right is referred to channel 2.

Sensor Channel parameters. Sensor Number. Sensor Number has to be programmed or is self-assigned within On-Line Addressing session in order to define the flat mapping of measure points. not assigned Sensor Number is null when Unit is inserted. Sensor Number could be changed if just assigned Sensor by a previously Addressing session. 1 • just assigned in order to see this Move mouse on information. Sensor Direction (sign convention). Direction Backward (default) Forward backv 🔻 backward forward Sensor Measure Unit. Unit millimeters (default) _ degrees mm --Celsius degrees _ mm deg grams °C <u>lgr</u> Sensor Arm Ratio (unsigned). from 0.5 to 4.0 (1.0 default) Arm Ratio 1.000000 -



Free for User parameters.	
Group	Unit Group . Unit Group programming (from 1 to 99) is free for user. It is a numeric field.
Label UserFree!!	Unit Label. Unit Label is 10 characters length string free for user. It is a alpha-numeric field.
On-Line Enable	
Enable	Unit Enable. Enables LVDT-2 unit to start the On-Line mode. It is possible to enable only one channel per module (#1 or #2). Default state is <i>enabled</i> .
Save and Exit , Abort and E	xit , Delete Data
S ave	This button Saves changes to the current configuration. Unit is closed.
Abort	This button Aborts changes , with reloaded of old data. Unit is closed.
e elete	This button Deletes relevant data: - Code, Serial Number, Sw Version - Sensor and Sensor Direction Unit is not closed.



4.1.7 I/O Unit Configuration

Button indicates an I/O unit. Click mouse on it to toggle on/off the I/O Unit Form.



Figure 4: I/O Unit Form

(example for a new unit, example for a just existing unit)

I/O Unit Form let user to configure the I/O Unit.

A brief explanation of parameters and panel buttons is reported below.

Production Codes	
Code 7672000400	Unit Code. (Read Only) Self-acquired within Addressing session in On-Line mode (see _Addressing Session).
Serial Number yyDN0003	Unit Serial Number (Read Only) Self-acquired within Addressing session in On-Line mode (see _Addressing Session).
Sw Version version3.0	Unit Software Version (Read Only) Self-acquired within Addressing session in On-Line mode (see _Addressing Session).

Identification Number : Logic Address for communicate with Unit

Ident.		
1	-	

Unit Identification Number (Read Only) Identification Number is the Unit logic Address unique in network: it is necessary for communicate with Unit. Identification Number is self-assigned and automatically downloaded into Unit by Tool itself during On-Line Addressing operation.

Input and Output Channel parameters.

	Input/Output Channel Number.
I/O Port	Input/Output Number has to be programmed or is self-assigned within
	On-Line Addressing session in order to define the flat mapping of
not assigned	Input/Output Ports.
1/0.0-1	Input/Output Port is null when Unit is inserted.
I/U Port	Input/Output Port could be changed if just assigned by a previously
just assigned	Addressing session.
 just assigned	Addressing session.

Move mouse on in order to see these information.

Free for User parameters	
Group	Unit Group . Unit Group programming (from 1 to 99) is free for user. It is a numeric field.
Label UserFree!!	Unit Label Unit Label is 10 characters length string free for user. It is a alpha-numeric field.

	Unit Enable.
Enable	Enables I/O unit to start the On-Line mode.
✓ #1	Default state is <i>enabled</i> .

Save and Exit , Abort and Exit , Delete Data



On-Line Enable.

This button **Saves changes** to the current configuration. Unit is closed.



This button **Aborts changes**, with reloaded of old data. Unit is closed.



This button Deletes relevant data:

- Code, Serial Number, Sw Version
- Input and Output

Unit is not closed.



4.1.8 Analogic Input Unit Configuration

Button indicates an Analogic Input unit.

Click mouse on it to toggle on/off the Analogic Input Unit Form.





Figure 5: Analogic Input Unit Form

(example for a new unit in Off-Line mode, example for a just existing unit in Off-Line mode)

Analogic Input Unit Form let user to configure the Analogic Input Unit. A brief explanation of parameters and panel buttons is reported below.



Sensor Channel parameters.







🗖 RTD



K Conv [Ohm / Ohm] 1.000000

Offset [V] 0.000000

Offset [Ohm] 0.000000

RO	[Ohm]	100.0000
A	$[(\mathbf{^{n}C^{-1}})]$	0.003908
B [x10 ⁻	⁶ (°C ⁻²)]	-0.57753
C [x10 ⁴	¹² (°C ⁻⁴)]	-4.18330

Sensor Number.

Sensor Number has to be programmed or is selfassigned within On-Line Addressing session in order to define the flat mapping of measure points.

Sensor Number is null when Unit is inserted. Sensor Number could be changed if just assigned by a previously Addressing session.



Move mouse on in order to see this information.

Sensor Measure Unit .

- ----
- millimeters
- degrees
- Celsius degrees
- grams
- newton
- pascal
- volt (default)
- milliampere
- ohm
- N*m
- mm/s^2
- Rad/s - Rad/s²
- Kad/s
- dm^3/s

RTD Enable (Resitor Temperature Detector)

This option is available only when the sensor type is "Resistance". If RTD is disabled the following options are available:

Measure conversion factor (signed).

Depending on selected Sensor Measure Unit

- Selected Sensor Measure Unit /[V]
- Selected Sensor Measure Unit /[Ohm]
- Selected Sensor Measure Unit /[mA]

depending on applicable type

Measure offset (signed).

Depending on selected Sensor Measure Unit - Selected Sensor Measure Unit

If RTD option is enabled, the parameter for the RTD calculation are available (depends on sensor type).



Free for User parameters.	
Group	Unit Group . Unit Group programming (from 1 to 99) is free for user. It is a numeric field.
Label UserFree!!	Unit Label. Unit Label is 10 characters length string free for user. It is a alpha-numeric field.
On-Line Enable	
Enable #1	Unit Enable. Enables Analogic Input unit to start the On-Line mode. Default state is <i>enabled</i> .
Save and Exit , Abort and	Exit , Delete Data
<u>S</u> ave	This button Saves changes to the current configuration. Unit is closed.
価 Abort	This button Aborts changes , with reloaded of old data. Unit is closed.
	1 The second data and the first second state of the

) Delete This button **Deletes relevant data:**

- Code , Serial Number , Sw Version
- Sensor and Sensor Direction

Unit is not closed.



4.1.9 Incremental Digital or Analog Encoder Unit Configuration

Button indicates an Incremental Digital or Analog Encoder Input unit. Click mouse on it to toggle on/off the Incremental Digital or Analog Encoder Unit Form. Unit.09 / Net.01 Unit.08 / Net.01 X × Ident. Group Ident. Group Sensor ▼ 11 - 1 - 1 9 - $\overline{\mathbf{v}}$ 8 • Code Code Direction 767E0x05xx 767E010500 Backward • Serial Number Serial Number Unit EID_V3_1A_ deg • 5w Version Enable Enable 邋吵 **▼** X 🔽 X version2.0 Label Interface Type Label Interface Type -----Dig.Inc. None • Arm Ratio 1.000000 Marker[deg] 0.000000 Calibration Calibration R 🖸 Calibrate F 🖸 Calibrate C Verify C Verify C Calibrate always C Calibrate always 颲 颲 C Verify always C Verify always C Abort Reset Calibr C Abort 99 壷 壷 Abort <u>D</u>elete <u>A</u>bort Delete Save **Digital**: Unit.01 / Net.01 X Ident. Group Sensor **_** • 1 • 1 Code Direction 6355600110 Backward • Serial Number Unit EID_V3_05_ mm • Enable 圈即 **▼** X version1.0 Label Interface Type -----• Ana.Inc. Arm Ratio 1.000000 Marker[mm] 0.000000 Calibration 🖸 Calibrate Ę. C Verify C Calibrate always C Verify always 颲 <u>R</u>eset Calibr C Abort 亦 99 H <u>A</u>bort <u>D</u>elete Analog:

Figure 6: Incremental Digital or Analog Encoder Unit Form (example for a new unit in Off-Line mode, example for a just existing unit in Off-Line mode) Incremental Digital or Analog Encoder Unit Form let user to configure the Incremental Digital Encoder Unit.

A brief explanation of parameters and panel buttons is reported below.

Production Codes	
Code 767E000400	Unit Code. (Read Only) Self-acquired within Addressing session in On-Line mode (see _Addressing Session).
Serial Number yyDN0005	Unit Serial Number (Read Only) Self-acquired within Addressing session in On-Line mode (see _Addressing Session).
Sw Version version1.0	Unit Software Version (Read Only) Self-acquired within Addressing session in On-Line mode (see _Addressing Session).

Identification Number : Logic Address for communicate with Unit

Ident.	
1	-

Unit Identification Number (Read Only) Identification Number is the Unit logic Address unique in network: it is necessary for communicate with Unit. Identification Number is self-assigned and automatically downloaded into Unit by Tool itself during On-Line Addressing session.


Sensor Channel parameters.



Free for User	parameters.
---------------	-------------



Unit Group.

Unit Group programming (from 1 to 99) is free for user. It is a numeric field.

Label	
UserFree!!	-

Unit Label.

Unit Label is 10 characters length string free for user. It is a alpha-numeric field.



37

On-Line	Enable
Enable #1	Unit Enable. Enables Incremental Digital or Analog Encoder unit to start the On- Line mode. Default state is <i>enabled</i>

Save and Exit, A	bort and Exit , Delete Data
S ave	This button Saves changes to the current configuration. Unit is closed.
<u>A</u> bort	This button Aborts changes , with reloaded of old data. Unit is closed.
ə lə Delete	 This button Deletes relevant data: Code, Serial Number, Sw Version Sensor and Sensor Direction Unit is not closed



4.2 Automatic Configuration (On-line with Hardware self-detection)

This mode allows you to perform a complete hardware setup without any intervention by your side. A totally automatic procedure detect connected devices, acquire their parameters and perform an automatic addressing. After that you can save configuration and it is ready to use.

Only devices with Protocol Version A3.0	<mark>or greater</mark> can be detected.	Here are she codes used types in "C	own symbols to represent th COM Port selec	and product ne COM port ction" form .
Hardware Configuration Options Image: Manual (Off-Line) Automatic (On-Line with Hardware self-detection) Try to detect old hardware units	COM Ports Sele R5232	ection : Legend ISA 6355322xxx	PCI 6355321xxx III	USB 767Y0x0xxx 🕰

If "Try to detect old hardware units" check box is selected, devices with protocol version less than A3.0 can be acquired only if just properly addressed.

If "Try to detect old hardware units" check box is not selected, only devices with protocol version greater or equal than A3.0 are acquired also if not properly addressed, with very fast timings .

4.2.1 COM Port selection

After devices have been connected, select COM ports (multiple selections are allowed) where self detection procedure will run; you can test port and device connection by press test button. Press Ok button to start self detection procedure.





٠

Self detection could be a long time procedure (it depends on number of nets and units), especially if "Try to detect old hardware units" check box was selected: during procedure you can see activity on each net.

Net.01 - 04DN0468Y-COM		
	Waiting : Loading [12]	<u>-</u> D-
Net.02 - 05DN2013		
	Waiting : Loading [12]	<u>-</u>

When self detection has been completed you can edit or save configuration (please , see paragraph 4.1) or apply it to enter to an on line session (please , see chapter 5).

In any case :

- current hardware configuration was automatically self-detected
- all current parameters of all detected devices were automatically self-loaded

4.3 Print configuration



Format and print data. An error occurs if you don't have any printer installed.

4.4 Copy configuration



Copy data to clipboard. Data can be pasted into another application.

4.5 Check Configuration

The button signaled below perform an integrity data check on the current configuration.

Net(s) Insert/Delete -		Unit(s) Select						
	•F4	ê o	ôô.a	۵n	ക	۵	Apply	Save and Exit
1	9 6	U.	Ų	μŝ	Ă 🖁		Q	I
							Check	Abort and Exit

Check results are showed into an external report panel that lists errors for each net and unit:

Net	Туре	Error 1	Error 2	Error 3	
/ (Com25)	COM (any)	No Error(s) .			
_2 (Com?)	COM (any)	No Error(s) .			
		- 10 Marcanov	Net 1	il control	
Jnit Zlu		Error 1	Error 2	Error 3	
]1 1	Digital LVD I	No Error(s) .			
12 No	Digital LVD1-2	No Error(s) .			
]3 7	Digital I/O	No Error(s) .			
]4 진-	Analog Input	No Error(s) .			
]5	Encouer	NO Error(s) .			
					-
					P
					Exit

4.6 Save, Abort Configuration

Net(s) Insert/De	elete	Unit(s)	Select		2			
.	0	60	ôô.a.	an	an	BO	Apply	Save and Exit
1	94	VB	Ш₿	Ϋ́	A B		Q	
			1000000				Check	Abort and Exit

- **Save and Exit** Saves current configuration and exits program
- **Abort and Exit** Exits program without saving current configuration.

4.7 Apply Configuration

Net(s) Insert/D	elete	Unit(s)	Select		20000000000			
-	all'h	ê o	66.0	an	an	BO	Apply	Save and Exit
- E	96			Υġ			Q	I.
							<u>C</u> heck	Abort and Exit

Configuration can be Applied in On-Line mode in order to:

- start an **Addressing session**, self-acquiring Interface(s) and Unit(s) data and fixing into each Unit an unique network address (Identification Number)
- start a Check session, checking if current configuration is proper for self-detected HW
- start a **Download session**, checking if current configuration is proper for self-detected HW and programming HW to match required configuration
- start an **Operative session**, verifying proper functionality of a previously Addressed configuration
- start an Operative session, with set-up of specific parameters inside Unit(s)
- start an Operative session, with view of Unit(s) capability as measure for LVDT-1, LVDT-2, Analogic Input and Incremental Digital or Analog Encoder Units or I/O for I/O Units



On-Line Addressing session is mandatory 1st time a network is equipped or if a change on just Addressed network is operated.



5 Apply Configuration: "Complete" Interface – Graphic Mode

This mode is started after Apply button was pressed.

- **u** Hardware Configuration panel disappears
- □ On-Line mode is ready to be started without any communication active at now



Figure 7: Main Window in On-Line mode (example for a Network with 2 Nets, communication stopped)

The maximum number of Nets simultaneously visible is 4: *Net(s) view toolbar buttons* let toggling between viewing on/off selected Net.



On-Line/Off-Line toolbar buttons This button returns to the **Off-Line** mode. 2 This button let to see the Hardware Configuration, to modify some Sensor and/or I/O Port parameters and check hardware configuration 2 in textual chart.(see). This button starts the Addressing session. Addressing session let user to assign network address to any unit. **>** Addressing session, while assigning address, also acquires all information about unit involved.(see). This button starts the **DownLoad session**. Download session let user to force a just existing configuration to 3 network(s). Existing configuration must be correct and matching with existing hardware. Global modify on network(s) parameters is carried. This button starts the Check session. Check session acquires state of network(s) unit(s) and check it against current hardware configuration and parametrization. No modify on network(s) parameters is carried. This button starts the **Operative session**. Operative session let user to check proper on-line capability of network(s) and to have diagnosis information.

behaviour.

Operative session let user to program parameters that specialize unit

5.1 Net View

In this figure are represented two examples of Net Form, how them appear in On-Line mode. Views are different in On-Line mode if communication is started or stopped.

Views are different depending on selected format mode:

- default "Panel with Units buttons" + "Status Bar"

- maximized "Panel with Units buttons" + "Status Bar" + "Interface Data"

- minimized "Panel with Units buttons"

Views are different depending on Addressing session was just done or not.



Figure 9: Net Form in On-Line

(example for On-Line mode, communication started, maximized format)





Figure 10: Net Form in On-Line (example for On-Line mode, communication started, minimized format)

Note : In On-Line mode, communication stopped, **data can not be changed** except toggling **Enable flag**. In On-Line mode, communication started, **data can not be changed**.



State Led.

66

Indicates communication OFF

Indicates communication ON without errors or alarms

Indicates communication on with ERROR or ALARM pending

Minimized/Default/Maximized Button.

These buttons toggle between 3 different display formats (maximized, default and minimized).

In the maximized format is possible to see all information, including Interface data. Default and maximized format foresee a Status Bar.

Button image indicates the Net interface type (COM, PCI channel, ISA channel):



Interface (any)

Interface (any), check warning

Interface (COM/232 or COM/USB)

Interface (COM/232 or COM/USB), check warning

ISA Card , channel 1

ISA Card, channel 2

ISA Card , check warning

PCI Card, channel 1

PCI Card, channel 2

PCI Card , check warning



Unit view Button.

Button image indicates the Unit type and explains some programming data, communication state, check results if available.

Button toggles Unit Form showing it or closing it.

Unit view Button : LVDT 1 Channel

(L)	LVDT Off-Line, disabled
(Č	LVDT Off-Line, enabled , no check done
*	LVDT Off-Line, enabled , check failed: fatal error on unit
ť	LVDT Off-Line, enabled , check error: hardware mismatch
<u>t</u>	LVDT Off-Line, enabled , check warning: parameter mismatch
Ũ	LVDT Off-Line, enabled , check ok
<u>ù</u>	LVDT On-Line, TRANSITORY state, sensor forward
Q	LVDT On-Line, TRANSITORY state, sensor backward
	LVDT On-Line, OK state, transducer without retentive data, sensor forward
<mark>.</mark>	LVDT On-Line, OK state, transducer without retentive data, sensor backward
<u>í</u>	LVDT On-Line, OK state, transducer with retentive data, sensor forward
Ū	LVDT On-Line, OK state, transducer with retentive data, sensor backward
Ċ	LVDT On-Line, OVER-RANGE state, transducer without retentive data, sensor forward
Q	LVDT On-Line, OVER-RANGE state, transducer without retentive data, sensor backward
Ċ	LVDT On-Line, OVER-RANGE state, transducer with retentive data, sensor forward
Q	LVDT On-Line, OVER-RANGE state, transducer with retentive data, sensor backward
	LVDT On-Line, WARNING state, transducer disconnected, sensor forward
	LVDT On-Line, WARNING state, transducer disconnected, sensor backward
î,	LVDT On-Line, ALARM state
2	LVDT On-Line, ALARM state



LVDT On-Line, ADDRESSING state



LVDT On-Line, ADDRESSING state

LVDT On-Line, ADDRESSING state



ţ,

İ.

ţ

ŐŐ

LVDT-2 Off-Line, disabled

LVDT-2 Off-Line, enabled , no check done

LVDT-2 Off-Line, enabled , check failed: fatal error on unit

LVDT-2 Off-Line, enabled , check error: hardware mismatch

LVDT-2 Off-Line, enabled , check warning: parameter mismatch

LVDT-2 Off-Line, enabled , check ok

LVDT-2 On-Line, TRANSITORY state channel 1

LVDT-2 On-Line, TRANSITORY state channel 2

LVDT-2 On-Line, OK state channel 1

LVDT-2 On-Line, OK state channel 2

LVDT-2 On-Line, OVER-RANGE. state channel 1

LVDT-2 On-Line, OVER-RANGE. state channel 2

LVDT-2 On-Line, WARNING state, transducer disconnected channel 1

LVDT-2 On-Line, WARNING state, transducer disconnected channel 2

LVDT-2 On-Line, ALARM state

LVDT-2 On-Line, ALARM state

LVDT-2 On-Line, ADDRESSING state

LVDT-2 On-Line, ADDRESSING state

LVDT-2 On-Line, ADDRESSING state



Unit view Button : I/O

I/O Off-Line, disabled
I/O Off-Line, enabled , not checked
I/O Off-Line, enabled , check failed: fatal error on unit
I/O Off-Line, enabled , check error: hardware mismatch
I/O Off-Line, enabled , check warning: parameter mismatch
I/O Off-Line, enabled , check ok
I/O On-Line, TRANSITORY state
I/O On-Line, OK state
I/O On-Line, ALARM state
I/O On-Line, ADDRESSING state
I/O On-Line, ADDRESSING state
I/O On-Line, ADDRESSING state



Unit view Button : Analogic Input

© Av

Analogic Input Off-Line, disabled

Analogic Input Off-Line, enabled, not checked

Analogic Input Off-Line, enabled , check failed: fatal error on unit

Analogic Input Off-Line, enabled , check error: hardware mismatch

Analogic Input Off-Line, enabled , check warning: parameter mismatch

Analogic Input Off-Line, enabled, check ok

Analogic Input On-Line, TRANSITORY state

Analogic Input On-Line, OK state

Analogic Input On-Line, OVER RANGE state

Analogic Input On-Line, ALARM state

Analogic Input On-Line, ALARM state

Analogic Input On-Line, ADDRESSING state

Analogic Input On-Line, ADDRESSING state

Analogic Input On-Line, ADDRESSING state



Unit view Button : Encoder



Status Bar with Error Clear Button.

8 41, ... rror specification string is showed on Status Bar.



5.2 Unit View

Unit(s) view can be expanded or collapsed via clicking on Unit View Buttons.

5.2.1 LVDT Unit View



This Button on Net Form indicates a LVDT Station Unit. Click on Button to toggle on/off the data view.

In this figure are represented two examples of LVDT Unit Form, how them appear in On-Line mode. Views are different in On-Line mode if communication is started or stopped.

Views are different depending on selected format mode:

- default "Panel with Measure View" + "Status Bar"

- maximized "Panel with Measure View" + "Status Bar" + "Unit Data"
- minimized "Panel with Measure View"

Views are different depending on Addressing session was just done or not.



Figure 11: Unit LVDT Form in On-Line mode (example for On-Line mode, communication stopped, default format)

Figure 12: Unit LVDT Form in On-Line mode (example for On-Line mode, communication started, maximized format)

Note : In On-Line mode, communication stopped, **data can not be changed** except toggling **Enable flag**. In On-Line mode, communication started, **data can not be changed**.

State Led.	
	Indicates communication OFF
()	Indicates communication ON without errors or alarms
@ @	Indicates communication on with ERROR or ALARM pending
Format Button.	
	This button toggles between 3 different formats (maximized, default and minimized). In the maximized format is possible to see all information, including Unit data. Default and maximized format foresee a Status Bar.
	Button image indicates the Unit type and some programming informations:
L D	LVDT
	LVDT, transducer without retentive data sensor forward
	LVDT, transducer without retentive data sensor backward
Ì	LVDT, transducer with retentive data sensor forward
	LVDT, transducer with retentive data sensor backward

Status Bar with Error Clear Button.

rror specification string is showed on Status Bar.



5.2.2 LVDT-2 Unit View



Off-Line

On-Line

This Button on Net Form indicates a LVDT-2 Station Unit. Click on Button to toggle on/off the data view.

In this figure are represented two examples of LVDT-2 Unit Form, how them appear in On-Line mode. Views are different in On-Line mode if communication is started or stopped.

Views are different depending on selected format mode:

- default "Panel with Measure View" + "Status Bar"
- maximized "Panel with Measure View "+"Status Bar" + "Unit Data"
- minimized "Panel with Measure View"

Views are different depending on Addressing session was just done or not.



Box Numbering : in this case box is Addressed (blue color), sensor number is proposed (channel 1 on the left and channel 2 on the right)

Figure 13: Unit LVDT-2 Form in On-Line mode

(example for On-Line mode, communication stopped, default format)



Figure 14: Unit LVDT-2 Form in On-Line mode

(example for On-Line mode, communication started, maximized format)

Note : In On-Line mode, communication stopped, data can not be changed except toggling Enable flag. In On-Line mode, communication started, data can not be changed.

State Led.	
	Indicates communication OFF
(Indicates communication ON without errors or alarms
	Indicates communication on with ERROR or ALARM pending
Format Button.	
	This button toggles between 3 different formats (maximized, default and minimized). In the maximized format is possible to see all information, including Unit data. Default and maximized format foresee a Status Bar.
	Button image indicates the Unit type and some programming informations:
	LVDT-2
	LVDT-2, channel 1, transducer without retentive data sensor forward
	LVDT-2, channel 1, transducer without retentive data sensor backward
	LVDT-2, channel 2, transducer without retentive data sensor forward
Ū	LVDT-2, channel 2, transducer without retentive data sensor backward
	LVDT-2, channel 1, transducer with retentive data sensor forward
	LVDT-2, channel 1, transducer with retentive data sensor backward
	LVDT-2, channel 2, transducer with retentive data sensor forward
Ū	LVDT-2, channel 2, transducer with retentive data sensor backward

Status Bar with Error Clear Button.

, 82 41, ... rror specification string is showed on Status Bar.



5.2.3 I/O Unit View



Off-Line

On-Line

This Button in Net Form indicates an I/O Station Unit. Click on Button to toggle on/off the data view.

In this figure are represented two examples of I/O Unit Form, how them appear in On-Line mode. Views are different in On-Line mode if communication is started or stopped.

Views are different depending on selected format mode:

- default "Panel with In Leds & Out Switches" + "Status Bar"
- maximized "Panel with In Leds & Out Switches" + "Status Bar" + "Unit Data"
- minimized "Panel with In Leds & Out Switches"
- Views are different depending on Addressing session was just done or not.

Views are different depending on I/O Box programming.



Figure 15: I/O Unit Form in On-Line mode Figure 16: I/O Unit Form in On-Line mode(example for On-Line mode,
communication stopped, default format)(example for On-Line mode,
communication started, maximized format)

Note : In On-Line mode, communication stopped, **data can not be changed** except toggling **Enable flag**. In On-Line mode, communication started, **data can not be changed**.

State Led.	
••	Indicates communication OFF
()	Indicates communication ON without errors or alarms
	Indicates communication on with ERROR or ALARM pending
Format Button.	
	This button toggles between 3 different formats (maximized, default and minimized). In the maximized format is possible to see all information, including Unit data. Default and maximized format foresee a Status Bar.
	Button image indicates the Unit type:
	I/O

Status Bar with Error Clear Button.

rror specification string is showed on Status Bar.



5.2.4 Analogic Input Unit View



Off-Line

On-Line

This Button in Net Form indicates an Analogic Input Station Unit. Click on Button to toggle on/off the data view.

In this figure are represented two examples of Analogic Input Unit Form, how them appear in On-Line mode.

Views are different in On-Line mode if communication is started or stopped.

Views are different depending on selected format mode:

"Panel with Measure View" + "Status Bar" - default

"Panel with Measure View " + "Status Bar" + "Unit Data" - maximized

"Panel with Measure View" - minimized

Views are different depending on Addressing session was just done or not.



Figure 17: Analogic Input Form in On-Line mode Figure 18: Analogic Input Form in On-Line mode (example for On-Line mode, (example for On-Line mode,

communication stopped, default format)

communication started, maximized format)

Note : In On-Line mode, communication stopped, data can not be changed except toggling Enable flag. In On-Line mode, communication started, data can not be changed.

State Led.	
	Indicates communication OFF
()	Indicates communication ON without errors or alarms
	Indicates communication on with ERROR or ALARM pending
Format Button.	
	This button toggles between 3 different formats (maximized, default and minimized). In the maximized format is possible to see all information, including Unit data. Default and maximized format foresee a Status Bar.
	Button image indicates the Unit type:
	Analogic Input

Status Bar with Error Clear Button.

rror specification string is showed on Status Bar.



5.2.5 Incremental Digital or Analog Encoder Unit View



This Button in Net Form indicates an Incremental Digital or Analog Encoder Station Unit. Click on Button to toggle on/off the data view.

In this figure are represented two examples of Incremental Digital or Analog Encoder Unit Form, how them appear in On-Line mode.

Views are different in On-Line mode if communication is started or stopped.

Views are different depending on selected format mode:

- default "Panel with Measure View" + "Status Bar"
- maximized "Panel with Measure View" + "Status Bar" + "Unit Data"
- minimized "Panel with Measure View"

Views are different depending on Addressing session was just done or not.



Figure 19: Encoder Form in On-Line mode Figure 20: Encoder Form in On-Line mode

(example for On-Line mode, communication stopped, default format) (example for On-Line mode, communication started, maximized format)



Note : In On-Line mode, communication stopped, data can not be changed except toggling Enable flag. In On-Line mode, communication started, data can not be changed.

State Led.	
	Indicates communication OFF
(Indicates communication ON without errors or alarms
	Indicates communication on with ERROR or ALARM pending
Format Button.	
	This button toggles between 3 different formats (maximized, default and minimized). In the maximized format is possible to see all information, including Unit data. Default and maximized format foresee a Status Bar.
	Button image indicates the Unit type:
	Incremental Digital or Analog Encoder

Status Bar with Error Clear Button.

rror specification string is showed on Status Bar.



5.3 Edit Configuration

2	Ø	3	D	
---	---	---	----------	--

Configuration Edit let user to have a textual chart of current configuration, print and to check it globally. **Changes to HW configuration are not admitted**. For an explanation of pages and commands see chapter **6**.

	🗄 HW Configuration 🕼 Sensor(s) 🕼 I/O Port(s) 🗧 Synchronism Cabling 🔂 Temporal Synchronism 📲 Spatial Synchronism 🕼 Input Synchronism													
N	letwor	ks Net 1	Net 2	Ne	t3									
1	Numbe	er of networ	rks	3	Y						_			
	Ne	et Enable	COM	USB	Baud	Units Baud	Units	Code	Serial Number	Sw Version		Detect CO	OM Devices again	
	► 1	1	Com3		115200	208.3k	4	inter.pci-	INTERPCIJ1	version2.0	COM1	Detect Ma	arposs COM Device	
	2	1	Com6	V	115200	625.0k	6	767Y0105××	YUSB-HSS-4	version2.0	#	 COM	Serial Number	Statu
	3	1	Com12	V	115200	2083.3k	5	767Y0105xx	YUSB-HSS-5	version2.0	٦ 1	COM1		Unkni
											11 2	COM3		Unkni
											3 2	COM4		Unkni
												COM6 COM9	YU58-H55-4	Unkni Unkni
												COM18		Unkni
	K	Automatic	(On-Line	e with	1 Hardware	e self-detectio	<u>n)</u>		8		Q		Ţ.	[
	ß	Addressin	<u>q; Start</u>						Save and Exit		⊆heck		<u>A</u> bort and Exit	:



5.4 Addressing Session

Addressing On-Line Session lets to:

ToolButtons : Addressing On-Line Session. Starts Communication Session.

- Assign a Sensor Number to each Station Unit associated to a measure point
- Assign an Input Number to each Station Unit associated to a input port
- Assign an Output Number to each Station Unit associated to an output port
- Assign a Logical Identification Number (short) to each active Station Unit: Logic Identification Number is Unit Address in Net, necessary to communicate with Unit
- Assign optionally programmed Group and Label to Interface and to Addressed Station Units
- Self-Acquire Code, Serial Number, Software Version of Interface and Addressed Station Units

🗆 Ad	Addressing Options			
Þ	Start (current data will be cleared)			
	多 <u>R</u> esume	Advanced 📭		
	Replace Unit			

5.4.1 Start

Clear current addressing data and start new addressing session.

5.4.2 Resume

Continue an addressing session.

5.4.3 Replace Unit

Allows to replace unit

🗆 Ade	Idressing Options	Carial Musica
	🖇 🛛 Start (current data will be cleared)	
	溪 <u>R</u> esume	Advanced 📭 07DN3496
	Replace Unit	

In order to perform a replacement of a Unit:

- 1. Remove unit from line
- 2. Insert new unit
- 3. Input serial number of removed unit into the upper field
- 4. Input serial number of inserted unit into the lower field
- 5. Press "Replace Unit" button

5.4.4 Advanced Addressing

5.4.4.1 Addressing Mode with Selection: Manual

Addressing Options : <u>A</u> dvanced	Clear Data		
⊙ Manual	Clear Addresses	u j	市
O Automatic	Skip unit if just Addressed	<u>0</u> k	Ignore

User can define **Sensor Number** for each station involving measure. One addressing method is supported:

• selection of destination unit is requested after transducer move

User can define **Input and/or Output Number** for each station involving I/O port. Two addressing methods are supported for unit with Input capability:

- selection of destination unit and proper SerialNumber editing is requested
- selection of destination unit is requested after Input port change

One addressing method is supported for unit with Output capability only:

• selection of destination unit and proper SerialNumber editing is requested

Options	
Clear Data	Clear all acquired data (serial number, code, software version)
Clear Addresses	Clear all Channel Id
Skip Unit if just Addressed	Skip programming if Unit was just Addressed, in order to avoid erroneous
	assignments

5.4.4.2 Addressing Mode with Selection: Automatic

Addressing Options : <u>A</u> dvanced	Clear Data		
O Manual	Clear Addresses		a
 Automatic 	Skip unit if just Addressed	<u>O</u> k	Ignore

Sensor Number is automatically defined with incremental numbering.

- selection of destination unit is automatic after transducer move
- Input/Output Number is automatically defined with incremental numbering.
- selection of destination unit is automatic after Input port change

Unit with Output capability only can not be addressed in automatic mode.

5.4.5 Start Addressing Operation

After Addressing mode is selected Driver tries to establish communication.

During the establishment Status Bar of all enabled Nets points out the current operation progress and Minimized/Default/Maximized Button is not operative.

	Opening COM .
	Ļ
	Getting Net Error(s).
	Ļ
	Setting Net Baud .
	Setting Unit(s) Baud .
	Ļ
	Getting Interface Informations .
	Storing [Group]
	Ļ
ī	Clearing

The establishment operations takes some time; if the communication is not established, a message box appears reporting error specification.

😵 Net.1 - COM Error: baud set not possible .	~	1
	×	

5.4.6 Termination of Addressing operation



Addressing session can be stopped by User at any time .

Note : In Automatic Mode, Addressing Operation terminates automatically when all units are addressed.

	Addressing :Completed with success .	^	1
Qk		~	

5.4.7 Manual Addressing

After the establishment of communication Status Bar points out the request of Unit Addressing.

Net.01 - USBHS02A		
🖉 Waiting	Serial Number	Ū

Figure 21: Net Form in On-Line mode

(example for On-Line Manual Addressing mode, waiting a change in a Unit state)

In Manual Addressing mode with Unit input change :

- LVDT transducer motion
- I/O input bit level change
- Analogic Input
- Encoder encoder movement

is necessary to select the required Unit under identification without the need of other programming. Tool will propose automatically :

input signal change

- proper Identification Number
- proper Sensor or I/O Port Number

Ident. Group	Identification Number (Logic Address for communicate with Unit) is self-assigned by tool.
767X000000	
Serial Number	
yyDN0001	Crown can be antionally programmed with numerical value 00:00
Sw Version Enable	Group can be optionally programmed with numerical value 00+99
version2.1 🕅 🕺	
Label	
<u>M</u>	Label can be optionally programmed with free 10 characters string

In Manual Addressing mode with Serial Number entering :

is necessary to select the required Unit under identification and program the unique Serial Number. Tool will propose automatically :

- proper Identification Number
- proper Sensor or I/O Port Number

Ident. Group 1 Code	Identification Number (Logic Address for communicate with Unit) is self-assigned by tool.
Serial Number	Group can be optionally programmed with numerical value 00÷99
Sw Version Enable	Serial Number must be programmed with 10 characters string xxDNxxxx as available in Unit docket
Label	Label can be optionally programmed with free 10 characters string



Both in <u>Manual Addressing mode with Unit input change</u> and <u>Manual Addressing mode with Serial</u> <u>Number entering</u>, tool will self-propose :

Sensor Number:

- LVDT 1-Channel 1 sensor
- LVDT 2-Channels 2 sensors
- Analogic Input 1 sensor
- Encoder 1 sensor

First available Sensor is proposed: it can be changed, if desired, choosing between available ones. Sensor can be also cleared, with "--- "choose.

I/O Port Number: • I/O

1 Input port, 1 Output port

First available I/O Port is proposed: it can be changed, if desired, choosing between available ones. I/O Port can be also cleared, with "---" choose.



LVDT Unit Addressing, transducer motion required.

A transducer motion is required: only a transducer has to pressed or released at a time.

After it, Status Bar points out information about Unit involved in transducer movement, and user is asked to select the desired location for Unit.

"Minimized/Default/Maximized Button" of Net involved in selection changes temporarily image appearance showing a question mark.



Figure 22: Net Form in On-Line

(example for On-Line Manual Addressing mode, waiting a LVDT Unit selection)

Net Form Buttons suggest addressing state of each LVDT Unit. However any Location associated to a LVDT Unit can be selected.

Helping with Button Image.		
i	No suggest	
į	Applicant Location	
Ĩ	Just assigned Location	

A Button in Net Form has to be selected: click on chosen Location.

Note : manually inserting of the production serial number is necessary if thermal probe is connected.



After selection of Location, a programming window appears.



Figure 23: LVDT Unit Addressing Form

 $(1^{st} selection)$

Typically, only <u>Save</u> button has to be clicked.

Relevant Data.	
Sensor Number	Select Sensor Number from a list of available numbers only,
	Select "" item to clear current number.
Direction	Backward/Forward.
Unit	Millimetres, Degrees, Celsius Degrees, Grams can be chosen .
Arm Ratio	Values between 0.5 and 4.0 can be chosen.
Group	Free for User.
Label	Free for User.

Save, Ab	ort Buttons.	
S ave		This button closes window with data save and starts download of data (Group, Label and Identification Number) to Unit.
借 Abort		This button closes window without any saving and restarts addressing operations.



LVDT-2 Unit Addressing , transducer motion required.

A transducer motion is required: only a transducer has to pressed or released at a time.

After it, Status Bar points out information about Unit involved in transducer movement, and user is asked to select the desired location for Unit.

"Minimized/Default/Maximized Button" of Net involved in selection changes temporarily image appearance showing a question mark.



Figure 24: Net Form in On-Line

(example for On-Line Manual Addressing mode, waiting a LVDT-2 Unit selection)

Net Form Buttons suggest addressing state of each LVDT-2 Unit. However any Location associated to a LVDT-2 Unit can be selected.

Helping with Bu	Helping with Button Image.	
Ĩ	No suggest	
<u>ii</u>	Applicant Location	
t	Just assigned Location	

A Button in Net Form has to be selected: click on chosen Location.

Note : manually inserting of the production serial number is necessary if thermal probe is connected.


After selection of Location, a programming window appears.

🗇 Unit.02 / Net.01 🛛 🛛			
Ident.	Group	Sensor	Sensor
2 -	1 🔻	2	3
Code		Direction	Direction
		backward	💌 backward 💽
Serial Numb	per	Unit	Unit
		mm	💌 mm 💽 💌
Sw Version Enable		邊 Db	Se
Label		ίī	Į I
	Arm Ratio	1.000000	1.000000
D Save	值 <u>A</u> bort		elete

Figure 25: LVDT-2 Unit Addressing Form (1st selection)

Typically, only <u>Save button has to be clicked</u>.

Sensor Number let User to define a flat map for Measure Point enumeration. Sensor Number will be used by QSPC software to address Transducer channels, and its value must match with programmed one in QSPC Gauge Programming. The column on the left is referred to channel 1 and the column on the right is referred to channel 2. *First available Sensor is proposed for channel 1 and the second available is proposed for channel 2: they can be changed, if desired, choosing between available ones. Sensor can be also cleared, with "----" choose.*

Backward **Direction** is proposed: Forward Direction can be optionally chosen. [mm] **Unit** is proposed: it can be optionally changed.

Relevant Data.		
Sensor Number	Select Sensor Number from a list of available numbers only,	
	Select "" item to clear current number.	
Direction	Backward/Forward.	
Unit	Millimetres, Degrees, Celsius Degrees, Grams can be chosen .	
Arm Ratio	Values between 0.5 and 4.0 can be chosen.	
Group	Free for User.	
Label	Free for User.	

Save, Ab	ort Buttons.	
S ave		This button closes window with data save and starts download of data (Group, Label and Identification Number) to Unit.
借 <u>A</u> bort		This button closes window without any saving and restarts addressing operations.



I/O Unit Addressing , input bit level change required.

A Input bit Level Change is required: only a bit level has to be changed at a time.

After it, Status Bar points out information about Unit involved in bit level change, and user is asked to select the desired location for Unit.

"Minimized/Default/Maximized Button" of Net involved in selection changes temporarily image appearance showing a question mark.



Figure 26: Net Form in On-Line

(example for On-Line Manual Addressing mode, waiting a I/O Unit selection)

Net Form Buttons suggest addressing state of each I/O Unit. However any Location associated to a I/O Unit can be selected.

Helping with Button Image.			
	No suggest		
	Applicant Location		
	Just assigned Location		

A Button in Net Form has to be selected: click on chosen Location.



After selection of Location, a programming window appears.



Input/Output Port Number let User to define a flat map for Input and Output Ports enumeration. Input and Output Port Number will be used by QSPC software to address Input and Output Port channels, and its value must match with programmed one in QSPC Programming. *First available I/O Port is proposed: it can be changed, if desired, choosing between available ones. I/O Port can be also cleared, with "---" choose.*

Figure 27: I/O Unit Addressing Form

 $(1^{st} selection)$

Typically, only <u>Save</u> button has to be clicked.

Relevant Data.		
Input/Output Port Number	Select Input/Output Port Number from a list of available numbers only,	
	Select "" item to clear current number.	
Direction	Backward/Forward.	
Group	Free for User.	
Label	Free for User.	

Save, Ab	ort Buttons.	
D Save		This button closes window with data save and starts download of data (Group, Label and Identification Number) to Unit.
值 <u>A</u> bort		This button closes window without any saving and restarts addressing operations.



D Analogic Input Unit Addressing , input value change required.

The input value variation is required: only an Analogic Input has to be changed at a time.

After it, Status Bar points out information about Unit involved in the Analogic Input variation, and user is asked to select the desired location for Unit.

"Minimized/Default/Maximized Button" of Net involved in selection changes temporarily image appearance showing a question mark.



Figure 28: Net Form in On-Line

(example for On-Line Manual Addressing mode, waiting an Analogic Input Unit selection)

Net Form Buttons suggest addressing state of each Analogic Input Unit. However any Location associated to an Analogic Input Unit can be selected.

Helping with B	Helping with Button Image.			
	No suggest			
	Applicant Location			
	Just assigned Location			

A <u>Button in Net Form has to be selected</u>: click on chosen Location.



After selection of Location, a programming window appears.



Figure 29: Analogic Input Unit Addressing Form (1st selection)

Typically, only Save button has to be clicked.

Relevant Data.		
Sensor Number	Select Sensor Number from a list of available numbers only,	
	Select "" item to clear current number.	
Unit	Millimeters, Degrees, Celsius Degrees, Grams, Newton, Pascal, Volt,	
	Milliampere, Ohm, N*m, mm/s ² , rad/s, rad/s ² , dm ³ /s can be chosen.	
K Conv	Input value conversion factor.	
Offset	Input value offset.	
Group	Free for User.	
Label	Free for User.	

Save, Ab	ort Buttons.	
E Save		This button closes window with data save and starts download of data (Group, Label and Identification Number) to Unit.
值 <u>A</u> bort		This button closes window without any saving and restarts addressing operations.



D Incremental Digital or Analog Encoder Unit Addressing , encoder motion required.

The input value variation is required: only an Incremental Digital or Analog Encoder has to be changed at a time.

After it, Status Bar points out information about Unit involved in the Incremental Digital or Analog Encoder variation, and user is asked to select the desired location for Unit.

"Minimized/Default/Maximized Button" of Net involved in selection changes temporarily image appearance showing a question mark.

Unit Choose. Please, choose desired Incremental Digital Encoder Unit pressing proper Button.



Figure 30: Net Form in On-Line

(example for On-Line Manual Addressing mode, waiting an Analogic Input Unit selection)

Net Form Buttons suggest addressing state of each Analogic Input Unit. However any Location associated to an Analogic Input Unit can be selected.

Helping with Bu	Helping with Button Image.				
	No suggest				
	Applicant Location				
	Just assigned Location				

A Button in Net Form has to be selected: click on chosen Location.



After selection of Location, a programming window appears.

(Th)		
Unit.05 / Net.01		Sensor Number let User to define a flat map for Measure
Ident. Group	Sensor	Point enumeration.
5 - 1 -	5	Sensor Number will be used by QSPC software to address
Fode	Direction	Transducer channels, and its value must match with
Louic	backward -	programmed one in QSPC Gauge Programming.
		First available Sensor is proposed: it can be changed, if
Serial Number	Unit	desired, choosing between available ones.
	mm 💌	Sensor can be also cleared, with "" choose.
Sw Version Enable	NCD.	
X	遼 Db	
Label	Tehevface Turce	Backward Direction is proposed: Forward Direction can be
		optionally chosen.
	Dig.Inc.	[mm] Unit is proposed: it can be optionally changed.
Órm Diatio	4.000000	
Anni Kado	11.000000	
Marker [mm]	0.000000	
Calibration		
Calibrate	震	
C Verify	(r Calibrata	
Colibrate always	Gaintace	
Calibrate always	044	
werry always	#25 D 1 5 11	
Abort	Keset Calibr.	
	- 50	
	20	
Save Abort	Delete	

Figure 31: Analogic Input Unit Addressing Form (1st selection)

Typically, only <u>Save button has to be clicked</u>.

Relevant Data.		
Sensor Number	Select Sensor Number from a list of available numbers only,	
	Select "" item to clear current number.	
Direction	Backward/Forward.	
Unit	Millimeters, Degrees can be chosen.	
Marker	Measure Offset.	
Arm Ratio	Values between 0.5 and 4.0 can be chosen.	
Group	Free for User.	
Label	Free for User.	

Save, Ab	ort Buttons.	
S ave		This button closes window with data save and starts download of data (Group, Label and Identification Number) to Unit.
一 <u>A</u> bort		This button closes window without any saving and restarts addressing operations.

LVDT Unit Addressing, manual Serial Number enter.

Click on LVDT Unit button and insert Unit production Serial Number into the programming field.

🕀 Unit.01 / Net.0	i 🔀		🕲 Unit.01 / Net.01	ı 🔀
Ident. Group	Sensor 1	Insert here the required	Ident. Group	Sensor 1 •
Serial Number		Sensor Number.	767X000000 Serial Number	backy 💌
Sw Version			yyDN0001 Sw Version Enable	mm 💌
Label		Insert here the production Serial	version2,1 M X Label	
Arm Rati	1.00000C 90 Delete	Number (read it on box).	Arm Ratio	1.000000C

Figure 32: LVDT Unit Addressing Form (1st selection)

Figure 33: LVDT Unit Addressing Form (selection of Unit just Addressed)

Relevant Parameters.	
Sensor Number	Select Sensor Number from a list of available numbers only, Select "" item to clear current number.
Direction	Backward/Forward.
Unit	Millimetres, Degrees, Celsius Degrees, Grams can be chosen .
Arm Ratio	Values between 0.5 and 4.0 can be chosen.
Group	Free for User.
Label	Free for User.

Save, Ab	ort , <u>D</u> elete Buttons.	
D Save		This button closes window with data save and starts download of data (Group, Label and Identification Number) to Unit.
췝 <u>A</u> bort		This button closes window without any saving and restarts addressing operations.
) Delete		This button closes window with data clear (Code, Serial Number, SW Version) and clears Unit Identification Number.



LVDT-2 Unit Addressing, manual Serial Number enter.

Click on LVDT-2 Unit button and insert Unit production Serial Number into the programming field.

🗇 Unit.02 / Net.01 🛛 🔀				_	
Ident. Gro 2 1 Code Serial Number	oup	Sensor 2 Direction backward Unit	Sensor 3 Direction backward Unit		Insert here the required Sensor Number (in the left column the 1 st channel and in the right column the 2 nd channel).
Sw Version	Enable	mm 💌	mm		
 Label 					Insert here the production Serial Number (read it on box).
4	Arm Ratio	1.000000	1.000000		
Save	值 Abort	g De	Ç ete		

Figure 34: LVDT-2 Unit Addressing Form

 $(1^{st} selection)$

Relevant Parameters.	
Sensor Number	Select Sensor Number from a list of available numbers only, Select "" item to clear current number.
Direction	Backward/Forward.
Unit	Millimetres, Degrees, Celsius Degrees, Grams can be chosen .
Arm Ratio	Values between 0.5 and 4.0 can be chosen.
Group	Free for User.
Label	Free for User.

Save, Ab	ort , <u>D</u> elete Buttons.	
E Save		This button closes window with data save and starts download of data (Group, Label and Identification Number) to Unit.
∰ <u>A</u> bort		This button closes window without any saving and restarts addressing operations.
) Delete		This button closes window with data clear (Code, Serial Number, SW Version) and clears Unit Identification Number.



I/O Unit Addressing, manual Serial Number enter.

Click on I/O Unit button and insert Unit production Serial Number into the programming field.



Figure 35: I/O Unit Addressing Form (1st selection)

Figure 36: I/O Unit Addressing Form (selection of Unit just Addressed)

Relevant Parameters.	
Input/Output	Select Input/Output Port Number from a list of available numbers only, Select "" item to clear current number.
Group	Free for User.
Label	Free for User.

<u>Save</u> , <u>A</u> b	ort , <u>D</u> elete Buttons.	
S ave		This button closes window with data save and starts download of data (Group, Label and Identification Number) to Unit.
췝 <u>A</u> bort		This button closes window without any saving and restarts addressing operations.
e lete		This button closes window with data clear (Code, Serial Number, SW Version) and clears Unit Identification Number.



D Analogic Input Unit Addressing, manual Serial Number enter.

6

Click on Analogic Input Unit button and insert Unit production **Serial Number** into the programming field.



Figure 37: Analogic Input Unit Addressing Form
(1st selection)Figure 38: Analogic Input Unit Addressing Form
(selection of Unit just Addressed)

Relevant Parameters.	
Sensor Number	Select Sensor Number from a list of available numbers only, Select "" item to clear current number.
Unit	Millimetres, Degrees, Celsius Degrees, Grams can be chosen .
K Conv	Input conversion factor.
Offset	Input offset.
Group	Free for User.
Label	Free for User.

Save, Ab	ort , <u>D</u> elete Buttons.	
<u>S</u> ave		This button closes window with data save and starts download of data (Group, Label and Identification Number) to Unit.
췝 <u>A</u> bort		This button closes window without any saving and restarts addressing operations.
) 은 Delete		This button closes window with data clear (Code, Serial Number, SW Version) and clears Unit Identification Number.



Incremental Digital or Analog Encoder Unit Addressing, manual Serial Number enter.

Click on Incremental Digital or Analog Encoder Input Unit button and insert Unit production Serial Number into the programming field.



Figure 39: Encoder Unit Addressing Form (1st selection)

Figure 40: Encoder Unit Addressing Form (selection of Unit just Addressed)

Relevant Parameters.		
Sensor Number	Select Sensor Number from a list of available numbers only,	
	Select "" item to clear current number.	
Direction	Backward/Forward.	
Unit	Millimeters, Degrees can be chosen .	
Marker	Measure Offset.	
Arm Ratio	Values between 0.5 and 4.0 can be chosen.	
Group	Free for User.	
Label	Free for User.	



Save, Ab	ort , <u>D</u> elete Buttons.	
<u>S</u> ave		This button closes window with data save and starts download of data (Group, Label and Identification Number) to Unit.
췝 <u>A</u> bort		This button closes window without any saving and restarts addressing operations.
) 은 Delete		This button closes window with data clear (Code, Serial Number, SW Version) and clears Unit Identification Number.



5.4.8 Automatic Addressing

Automatic Addressing allows to identify LVDT-1-Channel, LVDT-2-Channels, Analogic Input, Encoder Units, and also I/O Units with Input capability.

□ Request of Unit Selection.

After the establishment of communication, request of Unit Selection is proposed in a dedicated Addressing Mode Panel.

A number indicates the next required :



- Sensor Number

(please, move Transducer related to required Sensor Number)

L Undo Waiting	1	Undo	هروسی که Waiting
----------------	---	------	---------------------

- Input Port Number

(please, change an Input Bit level related to required Input Port Number)

D After Unit Selection with Transducer move or Input level change.

After a Transducer move, Unit is Addressed and current Sensor number is assigned to the Unit involved in Transducer Move or Input Level Change.



I/O Manual Unit Selection for I/O box.

It is possible to manually address an I/O via programming its box Serial Number, as previously described.



Undo: Clear Sensor Number / Input Port Number



Undo Button allows user to clear a Sensor Number or an Input Port Number.

After <u>Undo</u> Button click, selection of Sensor Number or an Input Port Number is proposed and a confirm is required.



- **Ok** to clear the specified Sensor Number or an Input Port Number :
- Sensor Number or Input Port Number is declared free
- Related Network Unit Identification Number is cleared
- Automatic Addressing Mode is restarted again
- **Ignore** to abort
- Automatic Addressing Mode is restarted again



5.5 DownLoad On-Line Session

ToolButtons : DownLoad On-Line Session. Starts Communication Session.

DownLoad On-Line Session lets user to:

- check if connected HW is able to support loaded configuration
- download loaded configuration in connected HW
- check if stored data matches exactly with loaded one

DownLoad terminates immediately if connected HW is not able to support loaded configuration, without operating any change in Network participants.

	Download: could all da	ata be cleared and re	programmed ?	
Net.01 - USBHS02A				
Net.02Y-COM				
Ok	wnload :Completed with su	uccess .		

Figure 41: Main Window in Download Mode

Establishment of communication takes some time. If the establish is not possible a message box appears.

😵 Net.1 - COM Error: baud set not possible .	~	1

5.5.1.1.1 Termination of communication.

Communication self-terminates when all Unit(s) of all Network(s) were re-programmed .



5.6 Check On-Line Session



Check On-Line Session lets user to:

• check if loaded configuration matches exactly with connected HW



Figure 42: Main Window in Check Mode

(example for On-Line Check mode, 2 Nets, 2nd Net not properly operative)

Establishment of communication takes some time. If the establish is not possible a message box appears.



5.6.1.1.1 Termination of communication.

Communication self-terminates when all Unit(s) of all Network(s) were checked .

5.7 Operative On-Line Session



ToolButtons : Operative On-Line Session. Starts Communication Session.

Operative On-Line Session lets user to:

- check functionality of Network globally
- view detailed information about each Net
- view detailed information about each Unit
- view detailed information about error(s) eventually pending
- program Unit parameters



Figure 43: Main Window in Operative Mode (example for On-Line Operative mode)



5.7.1.1 Establishment of communication.

Establishment of communication takes some time.

Minimized/Default/Maximized Button will be operative when establishment terminates. Status Bar of all Enabled Nets points out current operation progress.



If the establish is not possible a message box appears.



5.7.1.1.1 Termination of communication.



Status Bar of all enabled Nets points out communication close message.

	Closing COM .
--	---------------



5.7.1.2 Net Form.

Net.01 - U	SBHS02A		Network and mnen	index nonic	Detected HW
88U 지 승	Code 767Y010400	Serial Numb	er	Sw Version	
COM Com25	Baud Units Baud 115200 625.0k	Grou	p T	Label	

Figure 44: Net Form in On-Line mode (example for On-Line Operative mode, maximized format)

5.7.1.2.1 Detailed description about Unit Button Image meaning, communication started.

LVDT Unit.

*	Unit is not enabled to start communication.
Į.	Measure not acquired.
	Enable
	To enable again Unit, please check Enable box:
A N	Unit is in transitory state.
Ų ₩	Colour of ring on Transducer explains Unit Programming:
, <u> </u>	- "red" means that Retentive data on Transducer must not be used
ń L	- "yellow" means that Retentive data on Transducer must be used
Ľ , Ľ	Up or down direction on Transducer explains Unit Programming:
	- up means "forward" direction
	- down means "backward" direction
	Measure in transitory state, not jet properly acquired.
1	Unit is programmed to acquire measure in forward direction without accessing Transducer
	data: Range and Nominal Sensibility have to be properly programmed.
	Measure properly acquired with Transducer in-range.
n	Unit is programmed to acquire measure in backward direction without accessing Transducer
	data: Range and Nominal Sensibility have to be properly programmed.
	Measure properly acquired with Transducer in-range.
H	Unit is programmed to acquire measure in forward direction accessing Transducer data:
	Range and Nominal Sensibility were self-acquired.
	Measure properly acquired with Transducer in-range.
n	Unit is programmed to acquire measure in backward direction accessing Transducer data:
	Range and Nominal Sensibility were self-acquired.
	Measure properly acquired with Transducer in-range.

	Unit is programmed to acquire measure in forward direction without accessing Transducer
	data: Range and Nominal Sensibility have to be properly programmed.
,	Measure properly acquired but with Transducer over-range, released or pressed.
n n	Unit is programmed to acquire measure in backward direction without accessing Transducer
및 무	data: Range and Nominal Sensibility have to be properly programmed.
,	Measure properly acquired but with Transducer over-range, released or pressed.
	Unit is programmed to acquire measure in forward direction accessing Transducer data:
Q , Q	Range and Nominal Sensibility were self-acquired.
	Measure properly acquired but with Transducer over-range, released or pressed.
n n	Unit is programmed to acquire measure in backward direction accessing Transducer data:
및 무	Range and Nominal Sensibility were self-acquired.
	Measure properly acquired but with Transducer over-range, released or pressed.

Î	Unit is programmed to acquire measure in forward direction without accessing Transducer data: Range and Nominal Sensibility have to be properly programmed.
Í	Unit is programmed to acquire measure in backward direction without accessing Transducer data: Range and Nominal Sensibility have to be properly programmed. Measure Invalid.
į	Unit is programmed to acquire measure in forward direction accessing Transducer data: Range and Nominal Sensibility were self-acquired. Measure Invalid.
Í	Unit is programmed to acquire measure in backward direction accessing Transducer data: Range and Nominal Sensibility were self-acquired. Measure Invalid.

Í

Measure not properly acquired, because Transducer is disconnected. Please, connect Transducer.



Unit is not properly running, alarm(s) pending. <u>Measure could not be properly acquired</u>.

Please, open related Unit Form and verify alarm explanation on Status Bar.

Ź

Impossible to communicate with Unit. <u>Measure not acquired</u>. Please, verify if Unit was correctly addressed and if Hardware cabling is correct.



LVDT-2 Unit.

In on-line mode, the button image for the LVDT-2 unit is the combination of 2 images: the left side shows the state of channel 1 and the right side shows the state of channel 2.

	Unit is not enabled to start communication.
2.2	Measure not acquired.
ШШ	Enable
N.N.	To such a cosin Unit aloose sheet. Eachte hour
	10 enable again Unit, please check Enable box:
ê ê	Unit in transitory state.
U U	Measure in transitory state, not jet properly acquired.
,	
n n	Unit is properly running without alarms.
<u>u</u> <u>u</u>	Measure properly acquired with Transducer in-range.
,	
	Unit is properly running without alarms
m m	Massure property running without diarins.
<u> </u>	Measure property acquired but with Transducer over-range, released or pressed.
	Measure not properly acquired, because Transducer is disconnected.
	Please connect Transducer
e , e	
r	
	Unit is not properly running, alarm(s) pending.
	Measure could not be properly acquired.
	Please, open related Unit Form and verify alarm explanation on Status Bar.
L	
	Impossible to communicate with Unit.
	Measure not acquired
	Please verify if Unit was correctly addressed and if Hardware cabling is correct
	r lease, verify if onit was concerny addressed and if frateware cabling is concert.

Digi Crown

I/O Unit.

A	Unit is not enabled to start communication.
	Input bits not acquired, Output bits not writable.
	Enable
	To enable again Unit, please check Enable box:

Unit is in transitory state. **Input bits not jet acquired , Output bits not jet writable**.

		Unit is properly running without I/O alarms.
		Input bits properly acquired, Output bits writable.

Unit is not properly running, alarm(s) pending. Input bits acquired but their state is dubious, Output bits probably not writable.
Please, open related Unit Form and verify alarm explanation on Status Bar.

	Impossible to communicate with Unit.
2	Input bits not acquired, Output bits not writable.
	Please, verify if Unit was correctly addressed and if Hardware cabling is correct.

Analogic Input Unit.

	Unit is not enabled to start communication.
	Measure not acquired.
Ň	Enable
	To enable again Unit, please check Enable box:
	Unit is in transitory state.
₩.	Measure in transitory state, not jet properly acquired.
	Unit is properly running without alarms.
₽	Measure properly acquired.
	Unit is properly running with warning.
₩.	Measure properly acquired but in over-range.
	Unit is not properly running, alarm(s) pending.
2	Measure could not be properly acquired.
	Please, open related Unit Form and verify alarm explanation on Status Bar.
	Impossible to communicate with Unit

	Impossible to communicate with Unit.
×	Measure not acquired.
	Please, verify if Unit was correctly addressed and if Hardware cabling is correct.



Incremental Digital or Analog Encoder Unit.

	Unit is not enabled to start communication.
	Measure not acquired.
	Enable
	To enable again Unit please check Enable box:
E	Unit is in transitory state.
Ē	Measure in transitory state, not jet properly acquired.
	Unit is properly running without alarms.
T	Measure properly acquired.
E	Unit is properly running with warning.
冒	Measure properly acquired but in over-range.
E	Measure not properly acquired, because Encoder is disconnected.
冒	Please, connect Encoder.
E	Measure not properly acquired, because Encoder is in alarm or uncalibrated.
音	Please check Encoder cabling and calibrate it
	At boot time, Encoder measure is declared as not calibrated.
	On alarm condition, Encoder measure is declared as not calibrated and alarm code is latched until:
	• an Unit hardware or software reset
	• a request of error get and clear
E	Unit is not properly running, alarm(s) pending.
	Measure could not be properly acquired.
	Please, open related Unit Form and verify alarm explanation on Status Bar.
[
	Impossible to communicate with Unit.
	Measure not acquired.
	Please, verify if Unit was correctly addressed and if Hardware cabling is correct.



5.7.1.3 LVDT Unit Form.

Measure Panel.	Unit.01 / Net.01 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
	Ident. Group 1 T I T Code 767X000000 Serial Number	Sensor 1 Direction backy Unit	Db Button: Read/Write LVDT Unit Parameters.
Unit Data View	yyDN0001 Sw Version Enable version2.1 ☑ ½ Label		<u>T</u> Button: Read Transducer Information.
ArmRatio parameter, from 0.5 to 4 [not stored in Unit]	Arm Ratio	u -	Status Bar with error view and clear button

Figure 45: LVDT Unit Form in On-Line mode (example for On-Line Operative mode, maximized format)



5.7.1.3.1 Measure Panel.

Measure Panel image explanation.		
±88.8888	Unit in transitory state or Unit programming not appropriate for connected Transducer. Transducer not jet acquired .	
<u> </u>	Unit is properly working without alarms. Transducer in range .	
±888888 	Unit is programmed to acquire measure in forward direction without accessing Transducer data: Range and Nominal Sensibility have to be properly programmed. Transducer over range, released or pressed .	
	Unit is programmed to acquire measure in backward direction without accessing Transducer data: Range and Nominal Sensibility have to be properly programmed. Transducer over range, released or pressed .	
±88,8888 <mark>±88,8888</mark>	Unit is programmed to acquire measure in forward direction accessing Transducer data: Range and Nominal Sensibility were self- acquired. Transducer over range, released or pressed .	
±88,8888 <u></u> ±88,8888	Unit is programmed to acquire measure in backward direction accessing Transducer data: Range and Nominal Sensibility were self- acquired. Transducer over range, released or pressed .	
±88,8888	Unit in alarm. Transducer not operative .	

5.7.1.3.2 Read/Write LVDT Unit Parameters.



This button opens a dedicated new form for reading or writing the Unit parameters. All data are uploaded directly from Unit and, on modify, downloaded directly into Unit.

Measure Mode			
relative			
Range			
5.000 [mm]			
Sensibilit	y		
115,000	- [rr	W/mm/V]	
Sensibilit	y Adjust		
1.00000			
Pre-Travel			
C ON • OFF [mm]			
Extra-Tra	avel		
C ON [mm]			
Linearization			
Retentive Data			
	衞	5	
Save	Abort	Qk	

Figure 46: LVDT Unit Parameters Form (example accessing Transducer Data).

Measure N	lode	
relative	*	
Range		
5.000	-	[mm]
Sensibility	22 	
115.000	▼ [n	nV/mm/V]
Sensibility	Adjust	
1.00000		
Pre-Trave	l ———	
OFF F		[mm]
Extra-Tra	vel	
C ON F		[mm]
	zation 🥟	OFF
Retentive Data		
	虚	5
	<u>IIII</u>	U UP

Figure 47: LVDT Unit Parameters Form (example without accessing Transducer Data).

Parameter	Meaning		
Measure Mode	Measure Mode (relative or absolute).		
Range	Range 5.000 [mm] 10.000 [s.000 2.500 [s.000 2.500 [s.000 0.500 [s.000 Transducer Range : [self acquired if accessing Transducer Data (read only)		
	 sen-acquired if accessing transducer Data (read-only) to be <u>properly programmed</u> if accessing Transducer Data is disabled, choosing between standard values or entering required one 		
Sensibility	Sensibility 115.000 ▼ 230.000 115.000		
	Transducer Nominal Sensibility :		
	- self-acquired if accessing Transducer Data (read-only)		
	- to be <u>properly programmed</u> if accessing Transducer Data is disabled		
	disabled, choosing between standard values or entering required one		
Sensibility Adjust			
	Transducer Sensibility Adjust :		
	- little adjust on sensibility (1.0000 +/-5%)		

Parameter	Meaning
Pre-Travel	• ON • ON • OFF • ONFF
	Transducer Pre-Travel for applying negative limit different from Range



	limit (-OverRange limit override).
Retentive Data and Linearization	Linearization ON OFF Retentive Data ON OFF
 Transducer Retentive Data En ON (default) if retentive c accessed OFF if retentive chip on T and Transducer Range and Transducer Lincerization Data 	 Transducer Retentive Data Enable : ON (default) if retentive chip on Transducer connector must be accessed
	- OFF if retentive chip on Transducer connector must not be accessed, and Transducer Range and Nominal Sensibility is manually supplied.
	- ON (default) if Linearization has to be activated
	 OFF if pure transducer signal without Linearization has to be acquired

Ok, Save, Abort Buttons.		
7		Closes window without saving changes.
<u></u> k		
D Save		Saves changes to Unit parameters. All data are downloaded directly to Unit. All data are uploaded directly from Unit again
<u>A</u> bort		Aborts changes to Unit parameters. All data are uploaded from Network Unit again.

Note : MDHQspc and MDHQspcP drivers force at communication establishment following settings.

System	metric
Measure Mode	relative



5.7.1.3.3 Read LVDT Transducer Information.



This button opens a dedicated new form for reading Transducer Information. All data are uploaded directly from Unit.



Figure 48: LVDT Unit Transducer Form (example).



5.7.1.4 LVDT-2 Unit Form.





5.7.1.4.1 Measure Panel.

In the LVDT-2 unit form, 2 measure panels are present: the panel on the left side is referred to channel 1 and the panel on the right side is referred to channel 2.



5.7.1.4.2 Read/Write LVDT-2 Unit Parameters.

🚴 ор

This button opens a dedicated new form for reading or writing the Unit parameters. All data are uploaded directly from Unit and, on modify, downloaded directly into Unit.

🕀 Unit.02[02] / Net.01 🛛 🛛		
Measure Mode		
relative	w.	
Range		
5.000	Y	[mm]
Sensibilit	у	53 23
115.000 💌 [mV/mm/V]		
Sensibilit	y Adjust	20 10
1.00000		
Pre-Trav	el	1
C ON OFF		[mm]
Extra-Tra	ivel	
C ON		[mm]
Linearization		
Retentive Data		
	衞	5
Save	Abort	<u> </u>

Figure 50: LVDT-2 Unit Parameters Form (example accessing Transducer Data).

Measure	Mode	
relative	-	
Range		
5.000	-	[mm]
Sensibility	,	
115.000	- [mV/mm/V]
Sensibility	Adjust	
1.00000		
Pre-Trave	1	
ON OFF		[mm]
Extra-Tra	vel	
ON F		[mm]
Lineari	zation	OFF
Retentive Data		
	壷	5
1000000000		0.000

Figure 51: LVDT-2 Unit Parameters Form (example without accessing Transducer Data).

Parameter	Meaning	
Measure Mode	Measure Mode (relative or absolute).	
Range	Range 5.000 [mm] 10.000 5.000 2.500 2.500 1.000 0.500 Transducer Range : - - self-acquired if accessing Transducer Data (read-only)	
	- to be <u>properly programmed</u> if accessing Transducer Data is disabled,	
	choosing between standard values or entering required one	
Sensibility	Isology [mV/mm/V] Isology [mV/mm/V] Isology ImV/mm/V] Isology ImV/mm/V] Isology ImV/mm/V] Isology ImV/mm/V] Isology ImV/mm/V] Imv/mm/V] Imv	
Sensibility Adjust	Sensibility Adjust 1.00000 Transducer Sensibility Adjust : - little adjust on sensibility (1.0000 +/-5%)	
Parameter	Meaning	
Extra-Travel	Extra-Travel ON OFF 0.050 [mm]	
	Transducer Extra-Travel for applying positive limit different from Range	

	limit (+OverRange limit override).	
Pre-Travel	Pre-Travel • ON • OFF • OFF	
	Transducer Pre-Travel for applying negative limit different from Range	
	limit (-OverRange limit override).	
Retentive Data and Linearization	Linearization ON COFF Retentive Data ON COFF	
	 Transducer Retentive Data Enable : ON (default) if retentive chip on Transducer connector must be accessed OFF if retentive chip on Transducer connector must not be accessed, and Transducer Range and Nominal Sensibility is manually supplied. Transducer Linearization Data Enable : ON (default) if Linearization has to be activated OFF if pure transducer signal without Linearization has to be acquired 	

<u>Ok</u> , <u>S</u> ave, <u>A</u> bort Buttons.		
IĢ ⊳ Ḱ	Closes window without saving changes.	
S ave	Saves changes to Unit parameters. All data are downloaded directly to Unit. All data are uploaded directly from Unit again	
<u>A</u> bort	Aborts changes to Unit parameters. All data are uploaded from Network Unit again.	

Note: MDHQspc and MDHQspcP drivers force at communication establishment following settings.

System	metric
Measure Mode	relative



5.7.1.4.3 Read LVDT-2 Transducer Information.



This button opens a dedicated new form for reading Transducer Information. All data are uploaded directly from Unit.



Figure 52: LVDT-2 Unit Transducer Form (example).



5.7.1.5 I/O Unit Form.



Figure 53: I/O Unit Form in On-Line mode (example for On-Line Operative mode, maximized format)

5.7.1.5.1 I/O Panel.

I/O Panel behaviour depends on I/O programming.

I/O Panel image explanation .		
	Unit not operative or in transitory state. Input bits not acquired, Output bits not writable.	
	Unit operative. Input bits acquired, Output bits writable.	
	Unit not operative, alarm pending. Input bits not acquired, Output bits not writable.	
5.7.1.5.2 Read/Write I/O Unit Parameters.



This button opens a dedicated new form for reading or writing the Unit parameters. All data are uploaded directly from Unit and, on modify, downloaded directly into Unit.

Dunit.03	[03] / Ne	t.01						×
Bit	8	7	6	5	4	3	2	1
Unused	•	C	C	C	C	C	C	C
Input/Outpu	it 🤇	•	c	C	c	C	6	6
Input	C	C	G	G	c	C	c	C
-Input	C	C	C	C	c	C	c	C
Output	C	C	C	C	œ	G	C	C
-Output		0	C	C	0	ç	C	ç
Filter Tim	e			15			[m:	5]
Watch Do	g Time			4		T	[5]	
S ave	借 <u>A</u> bort		ļ	<mark>₽</mark> ⊇k		₽	efau	lt

Figure 54: I/O Unit Parameters Form

(example with mixed bits programming).

Parameter	Meaning
Unused	Bit unused.
Input/Output	Bit can be used as input or output.
Input	Bit can be used as input only
-Input	Bit can be used as negative input only.
Output	Bit can be used as output only
-Output	Bit can be used as negative output only



Parameter	Meaning			
Filter Time	Filter Time	15	[ms]	
	Input Filter Time [ms]			
Watch Dog	Watch Dog Time	1	[s]	
	Output Watch Dog Time [s], default 0 [s]. If no communication is detected in this time, all Output bit are cleared. If 0 [s] is programmed, Watch Dog is disabled.			

Ok, Save	<u>Ok, Save, Abort, D</u> efault Buttons.		
₽ 0k	Close w	indow without saving changes.	
S ave	Saves cl All data All data	nanges to Unit parameters. are downloaded directly to Unit. are uploaded directly from Unit again	
值 <u>A</u> bort	Aborts of All data	changes to Unit parameters. are uploaded from Network Unit again.	
<u>D</u> efault	Restore	s Default parameters.	



5.7.1.6 Analogic Input Unit Form.



Figure 55: Analogic Input Unit Form in On-Line mode (example for On-Line Operative mode, maximized format)

5.7.1.6.1 Measure Panel.

Measure Panel image explanation.	
-888.88888	Unit in transitory. Input not jet acquired.
<u>+ 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8</u>	Unit is properly working without alarms. Input in range .
+0000000	Unit is properly working with warning. Input out of range.
+00000000	Unit in alarm.



5.7.1.6.2 Read/Write Analogic Input Unit Parameters.



•

This button opens a dedicated new form for reading or writing the Unit parameters. All data are uploaded directly from Unit and, on modify, downloaded directly into Unit.

Sensor Type Parameter let choose between 4 available acquisition modes:

- Voltage [V] with capability of programmable output Voltage Reference
- Resistance [Ohm]
- Current [mA]
- Current loop [4mA 20mA]

Parameter Form behaviour depends on Sensor Type Parameter programmed value .

🕀 Unit.0	4[04] / N	et.01 🔀
Sensor T	уре	
Voltage		•
Range		-
- 5/+	5 👱	[V]
Filter Fre ON OFF	quency 75.0	[Hz]
Voltage I C ON OFF	Reference	- <u></u> i
S ave	<u>A</u> bort	<mark>₽</mark> Ok

Figure 56: Analogic Input Unit Voltage [V] Parameters Form

🕀 Unit.0	4[04] / Ne	et.01 🔀	
Sensor T	уре		
Current		-	
Range			
- 20/+ 2	:0 💻	[mA]	
Filter Frequency ON OFF 75.0 [Hz]			
Voltage Reference			
S ave	值 <u>A</u> bort	Ģ <u>O</u> k	

Figure 58: Analogic Input Unit Current [mA] Parameters Form

🕀 Unit.0	4[04] / N	let.01 🔀
Sensor T	уре	
Resistance	•	-
Range		1
+ 50/+3	000	- [Ohm]
Filter Fre	quency	-
	75.0	[Hz]
Voltage Reference		
	畲	7
<u>S</u> ave	Abort	Qk

Figure 571: Analogic Input Unit Resistance [Ohm] Parameters Form

🕀 Unit.0	4[04] / No	et.01 🔀	
Sensor T	уре		
Current 4-	20 mA	<u> </u>	
Range + 4/+ 20 • [mA]			
Filter Frequency ON OFF 75.0 [Hz]			
Voltage Reference			
S ave	合 <u>A</u> bort	<mark>p</mark> ok	

Figure 591: Analogic Input Unit Current loop [4÷20mA] Parameters Form

Parameter	Meaning



Sensor Type	Sensor Type
	Voltage
	Voltage
	Resistance Current Current 4-20 mA
	Sensor Type
	- Voltage [V] with output Voltage Reference
	- Resistance[Ohm]
	- Current [mA]
	- Current loop [4÷20mA]
Range	Range
(except in Current loop mode)	- 5/+ 5 • [V] Range
	- 5/+ 5
	-10/+10 0/+10 +50/+500 +50/+3000
	Input Range
Filter Frequency	Input Filter Frequency [Hz]
Voltage Reference	Output Voltage Reference [V]
(only in Voltage mode)	

Ok, Save	<u>Ok</u> , <u>S</u> ave, <u>A</u> bort Buttons.				
7		Closes window without saving changes.			
<u>o</u> k					
S ave		Saves changes to Unit parameters. All data are downloaded directly to Unit. All data are uploaded directly from Unit again			
<u>A</u> bort		Aborts changes to Unit parameters. All data are uploaded from Network Unit again.			



5.7.1.6.3 Changing final Measure Unit.



following measure unit can be selected.

5.7.1.6.3.1 Voltage case .



5.7.1.6.3.2 Current case .



5.7.1.6.3.3 Resistance case (no RTD [Resistor Temperature Detection] choose) .





5.7.1.6.3.4 Resistance case (RTD [Resistor Temperature Detection] choose).





5.7.1.7 Incremental Digital or Analog Encoder Unit Form.



Figure 60a: Incremental Digital Encoder Unit Form in On-Line mode (example for On-Line Operative mode, maximized format)

Calibration/Verify/Abort choose Box let select a Calibration/Verify cycle for further start or select the Abort for further stop.

Calibration/Verify Start/Stop/Abort Button let starting a calibration or verify cycle or stopping it. Calibration/Verify Cycle can be:

- single (1st Marker signal detection calibrates/verifies Unit), and must be stopped or aborted
- never-ending (all Markers signal detection calibrate/verify Unit), and can be aborted if required

Calibration Reset Button let erase immediately zeroings on Unit, forcing its state to not calibrated.

If Marker signal is programmed OFF (not provided):

- single calibration and verify are immediate
- never-ending calibration and verify are not supported

While for the Incremental Analog Encoder there is only a different string on the "Interface Type" detected, however the figure is:



Figure 60b: Incremental Analog Encoder Unit Form in On-Line mode (example for On-Line Operative mode, maximized format)

The meaning of every box is the same described before on the Digital.



5.7.1.7.1 Measure Panel.

Measure Panel image explanation.			
	Unit in transitory. Input not jet acquired. Encoder not calibrated.		
	Unit in transitory. Input not jet acquired. Encoder calibrated.		
+ - 00000000000000000000000000000000000	Unit in alarm. Encoder not connected. Encoder Phase-A, Phase-B, Marker signal wrongly connected. Encoder Alarm or Over-Speed.		
+000000000000000000000000000000000000	Unit is properly working in not calibrated state. Encoder not calibrated.		
+000000000000000000000000000000000000	Unit is properly working in not calibrated state. Encoder not calibrated, calibration cycle pending.		
±000000000000000000000000000000000000	Unit is properly working in calibrated state. Encoder calibrated, calibration done with success. Measure in range.		
	Unit is properly working in calibrated state. Encoder calibrated , verify cycle pending. Measure in range.		
	Unit is properly working in calibrated state. Encoder calibrated, calibration verify done with success (match). Measure in range.		
	Unit is properly working in calibrated state. Encoder calibrated , calibration verify done with error (unmatch). Measure in range.		
<u>+888888888888888888888888888888888888</u>	Unit is properly working in calibrated state. Encoder calibrated, no verify information available. Measure in range.		
+000000000000000000000000000000000000	Unit is working with over-range warning. Encoder calibrated . Measure out of range.		
+000000000000000000000000000000000000	Unit is working with over-range warning. Encoder not calibrated . Measure out of range.		



5.7.1.7.2 Read/Write Incremental Digital or Analog Encoder Unit Parameters.



This button opens a dedicated new form for reading or writing the Unit parameters. All data are uploaded directly from Unit and, on modify, downloaded directly into Unit.

Sensor Type Parameter let choose between 4 available acquisition modes:

- Linear [mm]
- Rotary [degrees]
- Periodic [degrees with 360° module]
- Counter [no unit as default, unit programmable as required]

Parameter Form behaviour depends on **Sensor Type** Parameter programmed value (These figures are referred to a Digital unit for an Analog unit see after these figures).

() Unit.05	5[05] / Ne	et.01 🔀
Sensor Ty	/pe	
Linear		-
Connectio	on Type 👘	
Quadrature	ç.	-
(● ×1	C x2	C x4
Differential	TTL	•
Step	.000 [µ	m]
Frequency Max C ON • OFF • OFF Max Speed [mm/s] / Step [um]		
Marker On 💌	Ala	rm n 🔻
forward	tion	•
Save	值 Abort	<mark>in</mark> Ok

Figure 61: Digital Encoder Unit Linear Parameters Form

() Unit.0	5[05] / Ne	et.01 🔀
Sensor Ty	/pe	
Rotary		
Connectio	on Type 👘	
Quadrature	,	•
(€ ×1	C x2	C x4
Differential	TTL	•
Line Coun	1 t 3600	
Frequency Max C ON [] [kHz] G OFF Max Speed [RPM] / 60000 * Line Count		
Marker On 💌	Ala	n 💌
forward	tion	•
S ave	值 Abort	₽ <u>0</u> k

Figure 62: Digital Encoder Unit Rotary [degrees] Parameters Form



倒 Unit.0	5[05] / Ne	et.01 🔀	
Sensor T	уре		
Periodic		_	
Connecti	ion Type		
Quadratur	e	•	
(€ ×1	C x2	C x4	
Differentia	I TTL	_	
Line Cou	nt 3600		
Frequency Max ON [kHz] OFF Max Speed [RPM] / 60000 * Line Count Marker Alarm			
On 💌	0	n 💌	
HW-Direction forward			
S ave	值 Abort	5 <u>0</u> k	

Figure 63: Digital Encoder Unit Periodic [degrees] Parameters Form

	5[05] / Ne	et.01 🔀
Sensor T	уре	
Counter		
Connecti	on Type	
Quadrature	9	-
(€ ×1	C x2	C x4
Differentia	I TTL	•
Marker Alarm		
HW-Direc	tion	
forward	1	-
	畲	5
Save	Abort	Qk

Figure 64: Digital Encoder Unit Counter Parameters Form

For the Analog unit there is showing few differences from the Digital :

🕘 Unit.(04 / Net.01	1 📉 🗙		
Sensor	Туре			
Linear		~		
Connec	tion Type			
Quadratu	re	~		
	() x2			
Current		*		
Step		10		
	10.000 [µ	im]		
Frequer	ncy Max			
ON 1000 [kHz]				
Max Speed [mm/s] /				
Step [µm]	Step [µm]			
Marker Alarm				
HW-Dire	ection			
forwa	rd	~		
	一一一			
Save	Abort	Close		

Figure 65b: Analog Encoder Unit Linear Parameters Form

All parameters are described below for both Digital and Analog unit type. In the Analog type there is only one different parameter with different conditions and behaviour, the "Connection Type":

Meaning



Sensor Type	Sensor Typ	pe
	Counter	•
	Linear	
	Rotary Periodic Counter	
	Linear	Signed measure [mm],
		based on Step parameter
	Applies to Line	ar Encoder
	and produces a	measure with dimensional attribute, that can overflow.
	Rotary	Signed angular measure [degrees], as $\pm 360^{\circ}$ *Round,
		based on Line-Count parameter.
	Applies to Rota	ry Encoder
	and produces a	$\pm 360^{\circ}$ * Round measure with degree attribute, that can overflow.
	Periodic	Signed angular measure [degrees], module(360°),
		based on Line-Count parameter.
	Applies to Rota	ry Encoder
	and produces a	module(360°) measure with degree attribute, that never overflows.
	Counter	Signed counting.
	Applies to Line	ear Encoder, <u>Rotary Encoder</u> or any kind of other <u>Incremental Digital</u>
	Devices,	
	and produces a	measure with no attribute, that can overflow.



Parameter	Meaning			
Connection Type Digital Unit	Connection Type			
	Quadrature			
	Quadrature			
	Phase A+			
	Phase B- Phase A+ Phase B-			
	Phase A+/- Phase B Dir			
	Quadrature	Phase-A and Phase-B		
		in quadrature		
	Phase A+	Phase-A only incrementing counting		
		Phase-B not cared		
	Phase B+	Phase-B only decrementing counting		
		Phase-A not cared		
	Phase A+ Phase B-	Phase-A incrementing counting		
	Dhage A / / Dhage D Div	Phase-B decrementing counting		
	rnase A+/- rnase b Dir	counting function of Phase B level		
	Connection Type			
	• x1 C x2 C x4			
	x1	Division none		
	x2	Division half step		
	x4	Division quarter step		
	Single Ended TT			
	Complementary HTL			
	Differential IIL Single Ended TTI	Differential signals with 11L levels		
	Single Ended IIL	Complementary signals with HTL levels		
	Single Ended HTI	Single Ended signals with HTL levels		
Connection Type Analog Unit	Connection Type	Single Ended Signals with ITTE levels		
Connection Type Thinking Chit	Quadrature			
	(6) 42	E' I V-land for several Contract Terms		
	Quadratura	Fixed values for every Sensor Type		
	v?	Division half sten		
	A2 Current			
	Voltage	-		
	Current			
	Current Curre	nt signal 11 µApp		
	Voltage Volta	ge signal 1Vpp		
Step (Linear mode only)	Step			
(Elifear mode only)				
	Encoder Step [µm], default	Ι [μm] :		
Line Count	measure resolution is self-ac	justed by Unit elaborating this value		
Line Count (Rotary and Daviadua modes	3600			
(Notary and Ferroduc modes only)	0000			
(my)	Encoder Impulses/Round,	default 3600 :		
	measure resolution is self-adjusted by Unit elaborating this value			

Parameter	Meaning			
Frequency Max	Frequency Max ON [kHz] OFF Max Speed [mm/s] / Step [um]	Frequency Max C ON G OFF Max Speed [RPM] / 60000 * Line Count		
	 Encoder / Counter Maximum Frequency [kHz], default disabled. Maximum Frequency of Input Signal parameter optionally specifie maximum operating frequency of Incremental Digital Encoder or othe Incremental Digital Device : <u>Maximum Speed [mm/s] / Step [mm/1000]</u> for 			
	 <u>Maximum Speed [inch/s] / Step [in</u> Linear Encoder , imperial system 	nch/1000] for		
	 <u>Maximum Speed [RPM] / 60000 * Step [Impulses/Round]</u> for Rotary Encoder If enabled , Maximum Frequency of Input Signal parameter restricts allowed input frequencies : on single Phase-A,B signals , transitions above programmed frequency are filtered on both Phase-A,B signals , concurrent transitions above programmed frequency are detected and notified via < Over Speed > alarm. So Maximum Frequency of Input Signal parameter optionally let filter spikes on single phase and detect over-speed conditions . 			
Marker	Marker signal present. - ON Phase-M - OFF Phase-M If Phase-M (Marker) is declared as prisenabled. If Phase-M (Marker) is declared as prisenabled.	provided not provided resent, test on its proper connection present, it will be used for Marker eroing to system.		
Alarm	Alarm signal presentON-OFFAlarm-OFFAlarmIf Alarm is declared as present , testalarm < Transducer Not Operative > is	provided not provided on its level is enabled : on error, asserted.		
HW-Direction	Direction of counting. - forward - backward	incrementing counting decrementing counting		

Ok, Save	, <u>A</u> bo	rt Buttons.
		Closes window without saving changes.
<u>O</u> k		
		Saves changes to Unit parameters.
Saua		All data are downloaded directly to Unit.
Dave		All data are uploaded directly from Unit again
虚		Aborts changes to Unit parameters.
0bort		All data are uploaded from Network Unit again.
HOOR		

6 Configuration and On-Line: "Complete" or "Simplified" Interface – Tabled Mode



When MDHQSPC Driver Programmer starts with an empty configuration loaded it shows a window like this:

File Users Options Help				
HW Configuration				
Networks Net 1				
Number of networks				
Net Enable COM USB Baud Units Baud Units Code	e Serial Number Sw Versi	on 📃	Detect COM Devices ag	ain
▶ 1 Com1 115200 208.3k 0		COM1	Detect Marposs COM De	evice
		#	COM Serial Number	er Statu
		J 1	COM1	Unkni
		II 2	COM3	Unkni
		₩ 3	COM4 S.CRE.0002	Unkni
		•		•
Automatic (On-Line with Hardware self-detection)		Q		
Addressing: Start	Save and Exit	Check	<u>A</u> bort and	l Exit

Figure 66: MDHQSPC Driver Programmer, simplified interface layout (Example with empty configuration loaded)

Hardware configuration can be set up in two modes:

- Automatic (On-line with Hardware self-detection) Hardware is automatically recognized and acquired without any intervention by the side of user.
- Manual (Off-line) User designs hardware configuration adding manually nets and units.

6.1 Automatic Configuration (On-line with Hardware self-detection)

This mode allows you to perform a complete hardware setup without any intervention by your side. A totally automatic procedure detect connected devices, acquire their parameters and perform an automatic addressing. After that you can save configuration and it is ready to use.

To perform an automatic configuration:

- select the number of nets present in the current configuration: Number of networks
- for each net, select the proper COM port. It is possible to test port and device connection by pressing the



2 👻



test button <u>COM31</u> and reading the result in the Status column <u>Unknown Status</u>. There are many values to understand the status of the COM port: Unknow Staus, No Operative, Impossible to Connect and Connection Possible.





Only devices with **Protocol Version A3.0** or greater can be detected.

Self detection could be a long time procedure (it depends on number of nets and units). When self detection has been completed you can edit or save configuration.

In any case:

- current hardware configuration is automatically self-detected;
- all current parameters of all detected devices are automatically self-loaded.

6.2 Manual configuration (Off-line)

To perform a manual configuration:

- select the number of nets present in the current configuration:
- for each net, select the proper COM port.
- for each net, select the number of units connected.



• for each net select the corresponding folder and select the unit types (default is Digital LVDT-2):

Netw	orks	Net 1	Net 2										
	Unit	Enable	#1 Enable	≥ #2	Туре			Ident.	Code	Serial Number	Sw ¥ersion	Sensor	Input/Output
	1	1	•		Digital L\	/DT-2	75 kHz	1	767X2004xx			/	
	2	K			Digital L	/DT	75 kHz	2	767X0xxxxx				
	3	77			Encode		None	3	767E0x05xx				
	4				Digital		None	4	767I0x05xx				
	5				Analo	hut	None	5	767A0x04xx				
	En	able for	r online		Sele	ect unit t	ype						

• press "Addressing: Start" Addressing: Start. This operation will set the communication IDs according to the unit number column, as chosen by the user. The starting window look like in the following page.

On the bottom of the window, the expected sensor number (LVDT transducer, Analog Input or Encoder)

is displayed: Waiting: Sensor 1 displayed in place of "Sensor": Waiting: Input 1

The green color on the bottom bar means that the driver is online, i.e. it is communicating with the network interface and units.

Once addressing is complete, the "Sensor" and "Input/Output" columns are fully compiled. A new row is

Sensor(s) I/O Port(s)

added to the or tables for each addressed sensor or I/O. See images on the next pages.

Digi Crown



н	₩ Cor	figuration	Sensor	(s) 🚺 I/O Po	ort(s)									
Netw	orks	Net 1 Ne	t 2											
	Unit	Enable #1	Enable #2	Туре		Ident.	Code	Serial Number	Sw ¥ersion	Sensor	Input/Output			
	1	•		Digital LVDT	75 kHz	1	767X000000	05DN0256	version1.3	1				
	2	V		Digital LVDT	75 kHz	2	767X000010	07DN0732	version1.3	2				
	3	•		Digital LVDT	75 kHz	3	767X000010	07DN0730	version1.3	3				
	4	1	1	Digital LVDT-2	75 kHz	4	767X	yyDN0002	version1.0	7/8		5	Sensor number 4 g	iven
	5	•		Digital LVDT	75 kHz	5	767X000010	07DN0716	version1.3	4			with addressing, se	e it
	6	1		Digital LVDT	75 kHz	6	767X000010	07DN0731	version1.3	5			on Sensor table ne	xt
	7	•		Digital LVDT	75 kHz	7	767X000100	07DN3497	version2.1	6				
	8	1		Digital LVDT	75 kHz	8	767X000000	05DN1282	version1.3	13				
	9	•		Digital I/O	Input Sk	9	IOISKPROT-	AI05	version2.0		1/1			
	10	1	1	Digital LVDT-2	75 kHz	10	767X200400	07DN0987	version2.0	11/12				
8 ¥	Auto Add	omatic (On-L ressing: Sta	ine with Han t	dware self-dete	ction)							Save and Exit	Q <u>C</u> heck	Abort and Exit



🗎 ни	/ Configuration	P	iensor(s)] I/O Po	ort(s)												
Cl	hannel Type		Unit	Enabl	e Senso	or Direction	Unit	Arm Ratio	Measure Mode	Range	Sensibility	/ Sensibility Adjust	Pre-Travel	Extra-Travel	Retentive Data	Linearization	Code 9
1	Digital I	.VDT	Net.1/Unit.1	V	1	backward	mm	1.000000	relative	2.50000	115.000	1.00000					767X000000 C
2	Digital I	.VDT	Net.1/Unit.2	~	2	backward	mm	1.000000	relative	5.00000	115.000	1.00000			•	1	767X000010 C
3	Digital I	.VDT	Net.1/Unit.3	~	3	backward	mm	1.000000	relative	5.00000	115.000	1.00000			1	1	767X000010 C
4	Digital I	.VDT	Net.1/Unit.5	V	4	backward	mm	1.000000	relative	1.20000	115.000	1.00000					767X000010 C
> 5	Digital I	.VDT	Net.1/Unit.6	~	5	backward	mm	1.000000	relative	5.00000	115.000	1.00000			1		767X000010 C
6	Digital I	.VDT	Net.1/Unit.7	V	6	ackward	mm	1.000000	relative	5.00000	115.000	1.00000			1	1	767X000100 C
7	Digital I	VDT-2	Net.1/Unit.4	V	7	b ward	mm	1.000000	relative	05.0000	115.000	1.00000			1		767Х у
8	Digital I	VDT-2	Net.1/Unit.4	1	8	back d	mm	1.000000	relative	05.0000	115.000	1.00023			1		767Х у
9	Digital I	VDT-2	Net.2/Unit.1	V	9	backwa	S un	1.000000	relative	05.0000	115.000	1.00000			1	1	767X200400 F
1) Digital I	VDT-2	Net.2/Unit.1	r	10	backward	$\langle \ $	1.000000	relative	05.0000	115.000	1.00000			1		767X200400 F
1	I Digital I	VDT-2	Net.1/Unit.10	1	11	backward	Λ.	1.000000	relative	05.0000	115.000	1.00010	-00.0500	+00.0500	1		767X200400 C
1.	2 Digital I	VDT-2	Net.1/Unit.10		12	backward	mm	00000	relative	05.0000	115.000	1.00000			1		767X200400 C
13	3 Digital I	VDT	Net.1/Unit.8	V	13	backward	mm 🔪	00	relative	5.00000	115.000	1.00000			✓	\$	767X000000 C
								Sens with Netw The used be ch desir	or number addressing york table a sensor nun by QSPC, nanged her ed.	4 giv g, see above iber, a can s e, if	en it on as till						
<																	>
	Start/Stop Ope	rative										<u>S</u> ave a	nd Exit		 ⊆heck	<u>A</u> bort a	nd Exit

If the "Stop" button is pressed before the Addressing Session is complete, it will be possible to finish it at a later time by pressing the "Resume" button. Note that a file with incomplete addressing can be saved.



It is always possible to restart addressing from the beginning, cleaning all sensor and I/O numbers, by selecting "Addressing > Start" in the popup menu:



Fill Column	
📕 Addressing 🔹 🕨	🧐 Automatic (On-Line with Hardware self-detection)
Print Configuration	📂 Start
🔁 Copy to Clipboard	Resume
	🦀 Replace Unit

6.3 Replacing an unit

If you want to substitute a broken unit, or anyway replace it with another one, select "Replace Unit" in the popup menu, while the mouse is pointed over the "Serial Number" cell of the unit to be replaced:

н	HW Configuration D Sensor(s) I/O Port(s)										
Netw	orks Net 1	Net 2									
	Unit Enabl	e #1 Enable #2	Туре		Ident.	Code	Serial Number	Sw Version	Sensor	Input/Output	
	1		Digital LVDT	75 kHz	1	767X000100	07DN3497	version2.1	3		Right-click of the mouse
	2		Digital LVDT	75 kHz	2	767X000010	07DN0731	version1.3	4		within the serial number
	3		Digital LVDT	75 kHz	3	767X000000	05DN0256	version1.3	5		cell
	4		Digital LVDT-2	75 kHz	4	767X	yyDN0002	version1.0	6/ 7		
	5		Digital LVDT	75 kHz	5	767X000000	05DN1282	version	0		
	6		Digital LVDT-2	75 kHz	6	767X200400	07DN0987	Version2 0	0/10		
	7 🖌		Digital LVDT	75 kHz	7	767X000010	07DN071	ldressing		🕨 🥝 Automatic (C	n-Line with Hardware self-detection)
	8		Digital LVDT	75 kHz	8	767X000010	07DN073 🗃 Pri	nt Configuratio	on	🦻 Start	
	9		Digital LVDT	75 kHz	9	767X000010	07DN073 🔁 Co	py to Clipboar	d	💕 Resume	
	10		Digital I/O	Input Sk	10	IOISKPROT-	AI05	version2.0		1 餐 Replace Unit	

Once "Replace Unit" is selected, the "Serial Number" cell will become editable:

6	✓	\$	Digital LVDT-2	75 kHz	6	767X200400	07DN0987	version2.0	9/ 10	

Replace at the moment the physical unit in the network, before inserting the serial number of the new unit and confirming it with the "Enter" button:

6		Digital LVDT-2	75 kHz	6	767X200400	06DN3	version2.0	9/ 10	

6.4 Off-line configuration editing

Some parameters are set off-line and saved within the configuration file. See next subsections.

6.4.1 Sensor channel(s) Configuration Edit



This page allows to enable/disable a sensor channel and edit its configuration: you can edit only these parameters:

Enable	Enable DigiBox rela	ated to sensor chann	nel to go in OnLine mod	e						
Sensor	From 1 to 9999 (not yet assigned in current QSPC fixture)									
Direction	LVDT	/DT Backward/Forward								
	LVDT-2									
	Incremental	Backward/Forwar	d							
	Digital or Analog									
	Encoder									
Unit	LVDT	mm, deg, °C, gr								
	LVDT-2									
	Analog Input	Voltage[V], Resist	tance[Ohm], Current[m/	A] modes						
		mm, deg, °C, gr,	2	2 2						
		N, Pa, V, mA, Oh	m, N*m, mm/s ² , Rad/s, I	Rad/s^2 , dm^3/s						
	Incremental	<u>Linear mode</u>	<u>Rotary/Periodic mode</u>	<u>Counter mode</u>						
	Digital or Analog	mm, deg, °C, gr	deg	mm, deg, °C, gr,						
	Encoder			N, Pa, V, mA,						
				Ohm, N*m,						
				mm/s^2 , Rad/s,						
				Rad/s ² , dm ³ /s						
Arm Ratio	LVDT	From 0.5 to 4.0								
	LVDT-2									
	Incremental	From 0.5 to 4.0								
	Digital or Analog									
	Encoder									
K Conv (1)	Analog Input	Measure Conversi	on Factor							
Offset (1)	Analog Input	Measure Offset								
	Incremental	Measure Marker								
	Digital or Analog									
	Encoder									
Resistance	Analog Input	RTD Enable								
Temperature		R0 coefficient								
Detector (1)		A coefficient								
		B coefficient								
		C coefficient								

Notes:

(1): In case of Analog Input, the **Resistance Temperature Detector** parameters are used as an alternative to **K Conv / Offset** parameters, when on-line "Sensor Type" parameter is set to "Resistance". In the latter case, "Unit" parameter can be set to something different from "°C" only if RTD is disabled.

See also the next figure:



A)	HW Configuration Sensor(s) I I/O Port(s)														
	Channel	Туре	Unit	Enable	Sensor	Direction	Unit	Arm Ratio	RTD	RO /	A B C	K Conv	Offset	Measure Mode	Range
	1	Digital LVDT	Net.1/Unit.1	•	1	backward	mm	1.000000						relative	05.0000
	2	Encoder	Net.1/Unit.2		2	backward	deg	1.000000					0.000000		
	3	Digital LVDT-2	Net.1/Unit.3	•	3	backward	mm	1.000000						relative	05.0000
	4	Digital LVDT-2	Net.1/Unit.3	K	4	backward	mm	1.000000						relative	05.0000
	5	Digital LVDT-2	Net.1/Unit.4		5	backward	mm	1.000000						relative	05.0000
	6	Digital LVDT-2	Net.1/Unit.4		6	backward	mm	1.000000	\mathbf{n}	\smallsetminus				relative	05.0000
	7	Digital LVDT	Net.1/Unit.5			backward	mm	1.000000			$\overline{\ }$			absolute	0.19685
	8	Analog Input	Net.1/Unit.6	4			۷			\backslash		000000	0.000000		- 5/+ 5
)					
	Sensor Channel Index. Editable Enable to OnLine , programmable in off-line mode Editable Parameters , programmable in off-line mode														
	la.	0							1				1		
						<u>S</u> av	re and Exit				्र ⊆heck		<u>A</u> bort and	l Exit	

Figure 67: Sensor(s) configuration Edit



6.4.2 I/O port(s) configuration Edit

This page allows to enable/disable a Port channel:

Enable Enable DigiBox related to Port to go in OnLine mode

See also this figure:

HW Configuration Sensor(s) I I/O Port(s)									
I/O Port	Туре	Unit	Enable	Bit	Filter Time [s]	Watch Dog Time [s]	Code	Serial Number	
▶ 1	Input	Net.1/Unit.7	•	8.I 7.I 6.I 5.I 4.I 3.I 2.I	1.I 000.100		7671020000	SOLOINPUT1	
2	Input	Net.1/Unit.8	1	8.I 7.I 6.I 5 4.I 3.I 2.I	1.I 000.000		7671000500	yyDNHSS3	
1	Output	Net.1/Unit.7	1	8 7 6 5 4 3 2	1	000.000	767I020000	SOLOINPUT1	
2	Output	Net.1/Unit.8	1	8.0 7 6 5 4.0 3.0 2	.0 1.0	060.000	7671000500	yyDNHSS3	
Port Channel Editable Enable to OnLine,									
Index.									
Start (Operativ	<u>e</u>			D	0,			

Figure 68: I/O channel(s) configuration Edit

6.5 Synchronisms configuration

When hardware configuration is completed it is possible to configure synchronisms management. Three kinds of synchronisation are available: Temporal, Spatial and Input.

Depending on hardware capabilities of configured units and interfaces, four new folders may be available:



6.5.1 Synchronism cabling

It is possible to link more nets together through a specific cable in order to have the same synchronism source for more networks (both temporal, spatial and input).

In this section it is possible to define the hardware connections between nets for synchronisms propagation.

Net Code Serial Number External Bus Internal Bus Connection I 767Y0105xx YUSB-HSS-4 Image: Connection Image: Connection 2 767Y0105xx YUSB-HSS-5 Image: Connection Image: Connection I 767Y0105xx YUSB-HSS-5 Image: Connection Image: Connection Ist external cable Image: Connection Image: Connection Image: Connection Image: Connection	A	HW C	onfiguration	Sensor(s)	I/O Port(s)	E Synchro	nism Cabling	Temporal Synchronism	n	🗐 Spatial Synchronism	Input Synchronism
1 767Y0105xx YUSB-HSS-4 Image: Constraint of the sector of the sec		Net	Code	Serial Number	External Bus	Internal Bus	Connection				
2 767Y0105xx YUSB-HSS-5 No external cable 1st external cable between Interfaces 2nd external cable between Interfaces		1	767Y0105xx	YUSB-HSS-4	1	1	No external	cable	-		
I 3rd external cable between Interfaces 🛛	J.	2	767Y0105xx	YUSB-HSS-5		/	No external 1st external 2nd external 3rd external	cable cable between Interfaces cable between Interfaces cable between Interfaces	< >		



The following parameter are available:

Synchronism Cabling Parameters									
Net 1	Index of the selected Net (from #1 to #12).(Read Only)								
Code 767Y0105xx	Product code of the interface in the net. It is self-acquired within addressing session (Read Only)								
Serial Number YUSB-HSS-4	Serial number of the interface in the net. It is self-acquired within addressing session (Read Only)								
External Bus	This option is checked if the interface has the hardware capability to export synchronism to other networks through a specific output. It is self-acquired within addressing session (Read Only)								
Internal Bus	This option is checked if the interface has the hardware capability to generate temporal synchronism. It is self-acquired within addressing session (Read Only)								
Connection No external cable No external cable Ist external cable between Interfaces Cnd external cable between Interfaces Grd external cable between Interfaces	It is possible to select between six different external cabling (so it is possible to define up to six "synchronism" networks). If the net is not connected to others, "No External cable" option must be selected. If the net is connected to an external source of synchronism, "External cable from other device" option must be selected.								

Note: this folder is visible only if at least one interface in the network does support synchronism. With old hardware interfaces or with interfaces that do not support "External Bus" capability, the "Connection" option will not be available.

6.5.2 Temporal Synchronism

In this section it is possible to define the temporal synchronism period to be used as default.

٩	ARPOSS S.p.A	Digi Crov	vn Probing	Line Driv	er [3.5.0] - [Con	figuration Edit]		
File	Options							
	HW Configuration	Sensor(s)	rt(s)	Synchronism Cabling	E Temporal Synchronism	🗐 Spatial Synchronism	Input Synchronism
	Synchronism #	Туре	Period [ms]	Out				
	1	Buffered	0.250000	None				
	2	Synchronized	0.250000	Bus 1 Ext.				
	3	Synchronized	0.250000	None				

The following parameter are available:

Temporal Synchronism Parameters

Synchronism #

Index of temporal synchronism (from #1 to #3). (Read Only)

Type Buffered Synchronized Synchronized	 Only): 1. Buffered: the synchronism is generated inside each single module. This is a low performance synchronisation, but is compatible with old hardware interfaces. 2. Synchronized: the synchronism source is the same for all units in the network. This is a high performance synchronisation but is available only with new hardware interfaces.
Period [ms] 0.250000	Temporal synchronism period to be used as default unless otherwise specified (default value is 0.25 ms).
Out None Bus 1 Ext. None	This parameter defines if the synchronism is propagated from one net to others. Synchronisms #1 and #3 do not propagate synchronism to other nets (out is set to "None"). Synchronism #2 does propagate synchronism to other nets (out is set to "Bus 1 Ext.") if a connection cable is present: the system automatically configures nets as "master" or as "slave". (Read Only)

Two different types of temporal synchronism are available (Read

Note: this folder is visible only if at least one interface in the network does support synchronisms #2 or #3.

6.5.3 Spatial Synchronism

In this section it is possible to configure all parameters used for a spatial synchronism management.

٩	MARPOSS S.p.A	Digi	Crown	Probing	g Line Drive	er [3.5.0] ·	[Configu	ration Edit	0	
File	Options									
	HW Configuration	Ser	nsor(s)	1 /0 P	ort(s)	5ynchronism C	abling E	Temporal Sy	nchronis	sm 🗐, Spatial Synchronism \iint Input Synchronism
	Synchronism #	Sensor	Unit	Channel	First ¥alue	Base ¥alue	Direction	Increment	Out	
	4	5	deg	5	Base	0.000000	Increment	0.000000	None	
	5			None						

The following parametrs are available:

Spatial Synchronism Parameters						
Synchronism # 4	Index of spatial synchronism (from #4 to #28) (Read Only)					
Sensor 5	Sensor number used by QSPC of the unit Encoder selected for spatial synchronism generation. (Read Only)					
Unit deg	Measure unit of the unit Encoder selected for spatial synchronism generation. (Read Only)					
Channel 5	Select the channel index of the Encoder unit for spatial synchronism generation. In the list will be proposed only Encoders with synchronism generation capability.					



Current 👻
Base
Current First Multiple Marker
Base Value
Direction Increment Increment Decrement
Increment 0.000000

Four different modes for spatial synchronism generation are available:

- **Base:** 1st synchronisation event is produced if counter/position value reaches programmed absolute counter/position value
- **Current:** 1st synchronisation event is produced if counter/position value reaches current counter/position plus programmed offset value
- **First Multiple:** 1st synchronisation event is produced if counter/position value reaches programmed absolute counter/position value or its multiple
- Marker: 1st synchronisation event is produced if Marker signal is detected and than counter/position value reaches programmed offset value

Offset/Absolute value used for the 1st synchronisation event triggering.

Direction of period/increment for synchronisation event triggering.

Period/Increment value used for synchronisation event triggering after 1^{st} one, programming the amount of required period/increment between events.

If synchronism must be propagated to other nets then set out to "Bus 1 Ext." or "None" otherwise.

Note: this folder is visible only if at least one Encoder with synchronism generation capability is present in one of the networks.

6.5.4 Input Synchornism

None None Bus 1 Ext

In this section it is possible to configure all parameters used for Input Synchronism management.

ļ	MARPOSS S.p.A Digi Crown Probing Line Driver [3.5.0] - [Configuration Edit]							
	File Options							
	۱ ا	HW Configuration	D Sens	or(s)	t(s)	Synchronism Cabling 🗧 Temporal Synchronism 📲 Spatial Synchro	onism 🜔 Input Synchronism	
		Synchronism #	I/O Port	Filter time [ms]	Out			
		29	1 🔽	0.240000	None			
		30	None					
		31	None					

The following parametrs are available:

Input Synchronism Parameters

Synchronism #	
29	

Index of input synchronism (from #29 to #31) (Read Only)



I/O Po	ort
None	•
None	
1	

Input/Output port number of the unit selected for input synchronism generation. In the list will be proposed only modules with synchronism generation capability.





Length of the filter time to avoid glitches on generated synchronism signal.

If synchronism must be propagated to other nets then set Out to "Bus 1 Ext." or "None" otherwise

Note: this folder is visible only if at least one I/O module with synchronism generation capability is present in one of the networks.

6.6 Print/Copy configuration

Use the popup menu to print configuration or copy it to clipboard.



An error occurs if you don't have any printer installed.



Copy data to clipboard. Data can be pasted into another application (for example a text editor).



6.7 Check Configuration

The button signaled below perform an integrity data check on the current configuration. This is an offline check (no communication with network).



Check results are showed into an external report panel that lists errors for each net and unit.

Net	Туре	Error 1	Error 2		#	СОМ	Serial Number	Status
🖌 1 (Com3)	COM (any)	No Error(s) .			J 1	COM1		Unknow
					111 2	COM2		Unknow
					📖 🥘 З	COM3		Unknow
<				>				
Unit	Туре	Error 1	Error 2					
1	Digital LVDT	No Error(s) .						
1 2	Encoder	No Error(s) .						
⁄ 3	Digital LVDT-2	No Error(s) .						
4	Digital LVDT-2	No Error(s) .						
√ 5	Digital LVDT	No Error(s) .						
6	Analog Input	No Error(s) .						
7	Digital I/O	No Error(s) .						
√ 8	Digital I/O	No Error(s) .						
					<			>
						Detec	t COM Devices ag	ain.
					🔴 сом	1 Detec	t Marposs COM D	<u>avice</u>
							I .	
<				>			⊆lose	

Figure 69: Configuration Check Form

6.8 Operative On-Line Session

At the bottom of the or I/O Port(s) or tables, once addressing has been completed, this button will be enabled:



That button starts the **Operative session**.

Operative session let user check proper on-line capability of network(s) and to have diagnosis information, including measurements. Operative session let user program parameters that specialize unit behaviour.



While online, the bottom bar has a green background:



While online, the "DB" button opens a DataBase window to set specialized unit parameters directly into the units. These DataBase windows (different for each unit type) and corresponding parameters are described in section 5.7. "DB" button opens a window referenced by the black arrow on the leftmost column.

Mea	leasurements are shown near to the Channel index:								Double-click a line or use "DB" button to		
	HW Co	onfiguratio	open a Dat	open a DataBase form							
	Chan	nel	Туре	Unit	Enable	Sensor	Direction	Unji	Arm Ratio	RTD	
►	1:1,	749 🦟	Digital LVDT-2	Net.2/Unit.1		1	backward	mn	1.000000		
-	2:0,	734	Digital LVDT-2	Net.2/Unit.1	1	2	backward	mm	1.000000		
	3 : Ur	nlinked	Digital LVDT	Net.1/Unit.1		3	backward	mm	1.000000		
	4 : Ur	nlinked	Digital LVDT	Net.1/Unit.2	1	4	backward	mm	1.000000		
	5:0\	/R -	Digital LVDT-2	Net.1/Unit.3	•	5	backward	mm	1.000000		
	6:-0	,0014	Digital LVDT-2	Net.1/Unit.3	1	6	backward	mm	1.000000		
	7:1,	.37	Digital LVDT-2	Net.1/Unit.4	1	7	backward	mm	1.000000		
	8:2,	068	Digital LVDT-2	Net.1/Unit.4	1	8	backward	mm	1.000000		
	9 : U	inked	Digital LVDT	Net.1/Unit.5	1	9	backward	mm	1.000000		
	10:	9104	Digital LVDT	Net.1/Unit.6	1	10	backward	mm	1.000000		
	11:	ilinked	Analog Input	Net.1/Unit.7	1	11		Ohm			
	12:	linked	Dr. HallVDT	Net.1/Unit.8	1	12	backward	mm	1.000000		
	Sensor not connected										
	Under-range										



I/O values are shown near to the I/O port indexes:



Online DataBase parameter changes are reflected in the gray cells of the "Sensors" or "I/O Ports" tables. Offline parameters (white and blue cells) cannot be modified while online.

Besides readings, the "Channel" or "I/O port" can show the follo	wing messages:
------------------------------------------------------------------	----------------

Unlinked	Transducer not connected		
OVR + Measurement over-range			
OVR - Measurement under-range			
HW Error Hardware error			
Not Calibrated Calibration not performed (for Encoders)			
Calibrating	Calibration cycle is pending (for Encoders)		
	Could not communicate or measurement not yet available		

6.8.1 Encoder Calibration

When an operative On-Line session is running, it is possible to perform a calibration/uncalibration of Encoder modules.

HW Configuration Sensor(s)													
	Channel	Туре	Unit Enal	ole Sensor [Direction	n Unit	Arm Ratio	RTD	R0 A	BCK	Conv (Dffset	Measure M
	1 : 4.3724	Digital LVDT	Net.1/Unit.1 🖌	1 b	ackward	mm	1.000000						relative
	2 : 0.05 (Not Calibrated)	Encoder	Net.1/Linit.2	2 b	ackward	deg	1.000000				C	0.000000	
	3 : 2.9452	Digital LVDT-2	Net.1 Fill Colum	n all : Digital I vo	+ ▶ ₽	mm	1.000000						relative
	4 : Unlinked	Digital LVDT-2	Net.1 Apply to	all : Encoder	· · ·	mm	1.000000						relative
	5 : 1.5268	Digital LVDT-2	Net.1 Hide read	d-only columns	; 1	mm	1.000000						relative
	6:1.0704	Digital LVDT-2	Net.1 Calibrate	libr	ł	mm	1.000000						relative
	7:0.26431	Digital LVDT	Net.1 Stop Op	erative	ł	mm	1.000000						absolute
	8:0.00468	Analog Input	Net.1 🔡 DB			۷				1.	.000000 0	0.000000	
	Print Configuration T Copy to Clipboard												
Stop Operative				S ave and Exit		C. <u>C</u> heck) Abort and Exit				

To perform a calibration (or reset the calibration status), just select the row corresponding to the Encoder module that must be calibrated/uncalibrated, press the right mouse button and select the command inside the popoup menu.

7 APPENDIX

7.1 Keyboard use



ALT	Activates Menu: use pointers to navigate menu items				
CTRL + F6	Activates a Form (Net or Unit Form) inside the main window: only one				
	Form can be active at the same time				
CRTL + pointers	Moves the active Form inside the main window				
ALT+ pointers	Moves unit cursor on the active Net Form				
-					
	ALT+ UP Moves unit cursor on a the first location				
	ALT+ RIGHT Moves unit cursor on a the next location				
	ALT+ LEFT Moves unit cursor on a the previous location				
ALT+ CR	Open Unit Form on the current location				
ALT+X	Toggles between enabled/disabled state on Net or Unit Form				

ТАВ	Use TAB to select a control into a Form. Only enabled controls cane be selected
Save	Buttons use Button by selection or keyboard shortcut: by selection: select it by TAB and then Press CR by shortcut : ALT + <i>underlined character on it's caption</i> (ALT+S in the example)
Sensibility Adjust	Text box Write into
Range 5.000 [mm]	List box Use pointers (up/down) to select the list item or write into (if possible)
Retentive Data O ON OFF	Options box Use pointers to select option



7.2 Drivers for WIN32 platforms



Interface RS232.

Interface Station supports the RS232 serial communication driver with host via COM Port . No additional driver is required .

Support :

Support Manual for DigiCrown Probing Line 232/USB : document D4340032GF.pdf http://www.marposs.com/ftp/library/D4340032GF.pdf



7.2.2 Interface (2 ports) Board ISA .

Interface Station supports the serial communication driver with host via COM Port . Interface Station supplies all units on RS485 bus with 7.5V.

System BIOS must be adjusted in order to properly install COM Ports: assigned COM Port can be selected as required.

No additional driver is required .

Support : Support Manual for DigiCrown Probing Line ISA : document D4340034GF.pdf http://www.marposs.com/ftp/library/D4340034GF.pdf





7.2.3 Interface (2 ports) Board PCI .

Interface Station supports the serial communication driver with host via COM Port .

Interface Station supplies all units on RS485 bus with 7.5V.

Driver Package is self-installed : please, install PCI board only if Driver Package was just properly self-installed.

Driver Package includes OXSER.INF file .

Following proprietary drivers are used :

• OXSER.SYS version 4.09

Assigned COM Port can be changed if required .

1. $\xrightarrow{\text{System}} \rightarrow \text{"Settings"} \rightarrow \text{"ControlPanel"} \rightarrow \text{"System"} \rightarrow \text{"Hardware"} \rightarrow \text{"Device Manager"}$

- 2. Select proper COM Port
- 3. Select "Property" option with right mouse click
- 4. Select "Settings" folder
- 5. Press "Advanced" button
- 6. Chose the required new COM Port between available ones

COM Port Number:	COM7	OK 1	
	COM1 (in use) COM2 COM3 (in use) COM4 (in use)	Cancel	16C952 (E)
Hardware config —	COM5 COM6 COM7 COM8 (in use) COM9 COM10	Normal	
N N3422/403			
Default Communical	tions parameters		
	Bits per second:	9600	-
	Data bits:	8	•
	Data bits: Parity	8 None	•
	Data bits: Parity Stop bits:	8 None	•
	Data bits: Parity Stop bits: Flow control:	8 None 1 None	•
	Data bits: Parity Stop bits: Flow control: Advanced	8 None 1 None Resto	re Defaults
	Data bits: Parity Stop bits: Flow control: Advanced	8 None 1 None Resto	re Defaults

Support :

Support Manual for DigiCrown Probing Line PCI : document D4340035GF.pdf http://www.marposs.com/ftp/library/D4340035GF.pdf



Interface Station supports the serial communication driver with host via Virtual COM Port .



The connection of a FullSpeed USB Interface device reserves a COM port permanently in the system . Driver Package is self-installed : please, connect USB device only if Driver Package was just properly self-installed .

Following proprietary drivers are used :

- SLABBUS.SYS version 4.40
- SLABSER.SYS version 4.40

Driver Package can be checked or uninstalled in Control Panel -> Application Installation as "MARPOSS USB/COM Interface".

If Driver Package is uninstalled, all COM Ports that were reserved because some previous Interface connections will be released and return free for the system.

Assigned COM Port can be changed if required .

1. $\underbrace{\texttt{Start}}_{\texttt{Start}} \rightarrow \texttt{``Settings''} \rightarrow \texttt{``ControlPanel''} \rightarrow \texttt{``System''} \rightarrow \texttt{``Hardware''} \rightarrow \texttt{``Device Manager''}$

2. Select proper COM Port Arross DigiCrown Probing Line USB/COM Interface (COM15)

- 3. Select "Property" option with right mouse click
- 4. Select "Settings" folder
- 5. Press "Advanced" button
- 6. Chose the required new COM Port between available ones

COM Port Number:	C0M26	-
	1001120	<u> </u>
	COM15	~
	COM16	
	COM17	
	COM18	
	COM19	
	COM20	
	COM21	
	COM22	
	COM23	
	COM24	м.

Support : Support Manual for DigiCrown Probing Line 232/USB : document D4340032GF.pdf http://www.marposs.com/ftp/library/D4340032GF.pdf





7.2.5 Interface HighSpeed / FullSpeed USB [480Mbps / 12Mbps].

Interface Station supports the serial communication driver with host via Virtual COM Port .

The connection of a HighSpeed/FullSpeed USB Interface device reserves a COM port permanently in the system .

Driver Package is self-installed : please, connect USB device only if Driver Package was just properly self-installed.

Standard Windows drivers are used :

- SERENUM.SYS
- USBSER.SYS
- USBEHCI.SYS version $\geq 5.1.2600.2783$ for optimal working $\binom{1}{2}$
- USBPORT.SYS version $\geq 5.1.2600.2783$ for optimal working (¹)

Driver Package can be checked or uninstalled in Control Panel -> Application Installation as

"MARPOSS S.p.A. USB DigiCrown Probing Line port (09/23/2008 1.00.0)".

If Driver Package is uninstalled, all COM Ports that were reserved because some previous Interface connections will be released and return free for the system.

(¹) <u>Information Note</u>.

Is know a problem when connecting a device to a USB 2.0 hub in Microsoft Windows XP, only if system file USBEHCI.SYS and USBEHCI.SYS have version minor than 5.1.2600.2783.

Symptoms :

USB device may stop working.

Cause :

High traffic on USB 2.0 hub when low-speed or full-speed USB device are in use or connected/disconnected . Related file information :

- USBEHCI.SYS version < 5.1.2600.2783
- USBPORT.SYS version < 5.1.2600.2783

Support :

http://support.microsoft.com/kb/908673-en-us

Assigned COM Port can be changed if required .

1. $\underbrace{\texttt{Start}}_{\texttt{Start}} \rightarrow \texttt{``Settings''}_{\texttt{Start}} \rightarrow \texttt{``ControlPanel''}_{\texttt{System''}} \rightarrow \texttt{``Hardware''}_{\texttt{System''}} \rightarrow \texttt{``Device Manager''}$

2. Select proper COM Port Arposs DigiCrown Probing Line USB Device (COM25)

- 3. Select "Property" option with right mouse click
- 4. Select "Settings" folder
- 5. Press "Advanced" button
- 6. Chose the required new COM Port between available ones

COM Port Number:	СОМ26 🔽	
	COM25 (in use)	
	СОМ26 —	
	COM27	
	COM28	
	COM29	
	COM30	
	COM31	
	COM32	
	СОМЗЗ 🛛 💟	

Support : Support Manual for DigiCrown Probing Line 232/USB : document D4340032GF.pdf http://www.marposs.com/ftp/library/D4340032GF.pdf




For a full list of address locations, please consult the Marposs official website: www.marposs.com

D2DC0001GD- Edition 03/2012 - Specifications are subject to modifications © Copyright 2012 MARPOSS S.p.A. (Italy) - All rights reserved.

MARPOSS, and Marposs product names/signs mentioned or shown herein are registered trademarks or trademarks of Marposs in the United States and other countries. The rights, if any, of third parties on trademarks or registered trademarks mentioned in the present publication are acknowledged to the respective owners.

Marposs has an integrated system to manage the Company quality, the environment and safety, attested by ISO 9001, ISO 14001, OHSAS 18001 and QS9000 T&E certifications. Marposs has further been qualified EAQF 94 and has obtained the Q1-Award.

