User Guide

Focus 60 / Focus 61

Atlas Copco Industrial Technique AB

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Revision history

Edition	Date	Author	Description	Reference Minimum Software version (ToolsTalk BLM)	Reference Firmware version
1.0	11 October 2016	C. Pacente	First issue	10.0.0	5.5.0.x
1.1	13 January 2017	C. Pacente	Specifications updated (<i>par. 1.3</i>), System Overview updated (<i>chapter 2</i>), Focus 60 / Focus 61 Ethernet Ports updated (<i>par. 4.4</i>), Focus 60 / Focus 61 Barcode Scanner Interface (RS232) updated (<i>par. 4.5</i>), Focus 60 / Focus 61 I/O BUS (CAN) updated (<i>par. 4.6</i>), Focus 60 / Focus 61 Wave Flexible Antenna updated (<i>par. 4.7</i>), Software Installation updated (<i>par. 5.1</i>), Pset Configuration updated (<i>par. 6.3</i>), I/O Accessories updated (<i>par. 6.6</i>), Results Viewer updated (<i>chapter 9</i>), CBP added (<i>chapter 13</i>)	10.1.0	5.5.1.x

Revision history

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NOTE: This User Guide may be altered without further notice. For further information log on to the Atlas Copco website: <u>www.atlascopco.com</u>



NOTE: The programming software (ToolsTalk BLM) may be updated with no changes regarding the Focus 60 / Focus 61 functionalities.

The *Reference Firmware version* requires a specific *Software version* (for further details refer to the above "*Revision history*" table).

NOTE: In case of conflicts between translations of this User Guide, always refer to the official English version.

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SAFETY INFORMATION

WARNING: PLEASE READ CAREFULLY THE FOCUS 60 / FOCUS 61 SAFETY INFORMATION (No. 9834 4137 00) PRIOR TO USE THE PRODUCT AND PAY ATTENTION TO THE SAFETY INSTRUCTIONS PROVIDED.

1 INTRODUCTION

1.1 About this Document

This document is a User Guide for the *Focus 60 / Focus 61*: it consists of the following main parts:

Part	Name	Description	
Chapter 1 Introduction		This chapter introduces this User Guide and provides the technical specifications for the Focus 60 / Focus 61.	
Chapter 2	System Overview	This chapter introduces the Focus 60 / Focus 61 with its main functions.	
Chapter 3	Installation Instructions	This chapter explains how to install the Focus 60 / Focus 61.	
Chapter 4	User Interfaces	This chapter provides an overview of the user interfaces available on the Focus 60 / Focus 61.	
Chapter 5	Working with ToolsTalk BLM	This chapter introduces the operations into the Focus 60 / Focus 61 management software.	
Chapter 6	Programming Focus 60 / Focus 61	This chapter drives the operator in programming the Focus 60 / Focus 61 in order to work on the production line. This includes creating the <i>Pset</i> for the MWR-TA and programming the <i>Jobs</i> .	
Chapter 7	Executing Tightening Operations	This chapter explains how to execute tightening operations with MWR-TA connected with the Focus 60 / Focus 61.	
Chapter 8	Live Monitor	This chapter explains how to view live results with ToolsTalk BLM.	
Chapter 9	Results Viewer	This chapter explains how to review the results of the tightening operations with ToolsTalk BLM.	
Chapter 10	Focus 60 / Focus 61 Settings	This chapter explains how to setup the Focus 60 / Focus 61.	
Chapter 11 Working with Open Protocol		This chapter describes how to work with Atlas Open Protocol application.	
Chapter 12	Working with ToolsNet	This chapter describes how to work with ToolsNet.	

Introduction

Part	Name	Description
Chapter 13	СВР	This chapter describes the CBP (output protocol).
Chapter 14	Maintenance	This chapter describes the required maintenance procedures for the Focus 60 / Focus 61.
Chapter 15	Troubleshooting Guide	This chapter explains how to solve the most common problems while working with the Focus 60 / Focus 61.

1.2 Reference Documents

Hereunder a list of important documents, useful for a complete view of the product in all its applications:

- Focus 60 / Focus 61 Safety Information (*No. 9834 4137 00*): Multilanguage Safety Information and Declaration of Conformity
- MWR- TA and Charging Cradle MWR User Guide (*No. 9839 0214 01*)
- MWR-TA Safety Information (*No. 9834 4136 00*): Multilanguage Safety Information and Declaration of Conformity
- Charging Cradle MWR Safety Information (*No. 9834 4138 00*): Multilanguage Safety Information and Declaration of Conformity

1.3 Specifications

TECHNICAL

- Maximum accuracy error: +/-1% measurement
- Angle measurement: *Resolution* \rightarrow 0,00°
- Results memory capacity: 20.000 (minimum)
- Pset memory capacity: *10 (one Pset = one MWR-TA)*
- Maximum number of identifier strings: 3 strings (33 characters total)
- Units of Measurement supported: Nm, ft-lbs, in-lbs, ozf ft, ozf in, kgf cm, kgf m
- Average radio range: 10m

POWER SUPPLY

- Input power: 100-240 VAC with 50/60 Hz
- AC Power Consumption: 25 W (maximum)

Introduction

DIMENSIONS



The unit of the dimensions is in mm.

INTERFACES

- Ethernet ports
- Barcode Scanner interface (RS232)
- I / O BUS (CAN)
- Wave Flexible Antenna connector
- Radio module frequencies:

Country	Number	Channel	Frequency [MHz]	Data rate [bit/s]
	1	51	868.034	38400
	2	56	868.297	38400
Furone	3	60	868.502	38400
Europe	4	64	868.706	38400
	5	69	869.006	38400
	6	76	869.273	38400

Country	Number	Channel	Frequency [MHz]	Data rate [bit/s]
	7	82	869.573	38400
	8	84	869.840	38400
	9	51	868.034	19200
	10	56	868.297	19200
	11	60	868.502	19200
	12	64	868.706	19200
	13	69	869.006	19200
	14	76	869.273	19200
	15	82	869.573	19200
	16	84	869.840	19200
	1	2	002 701	28400
	2	2	902.791	38400
	2	9 10	900.478	38400
	3	10	907.004	38400
	5	1/	910.091	38400
	5	20	912.271	38400
	0	31	918.004	38400
	/	32	918.590	38400
USA	0	40	923.903	38400
	9	2	902.791	19200
	10	9	906.478	19200
	11	10	907.004	19200
	12	17	910.691	19200
	13	20	912.271	19200
	14	31	918.064	19200
	15	32	918.590	19200
	16	46	925.963	19200

ENVIRONMENTAL CONDITIONS

Comply with the following environmental conditions during the operations:

- Indoor Use ONLY
- Environmental Class: II
- IP Index according to EN IEC 60529: **IP21**
- Room Temperature: 5 °C to 40 °C (41 °F to 104 °F)
- Maximum relative humidity 80% for temperature up to 31 °C (88 °F) decreasing linearly to 50% relative humidity at 40 °C (104 °F)
- Altitude: Up to 2000m

SYSTEM REQUIREMENTS

Hereunder are the PC minimum requirements for installation of *Focus 60 / Focus 61 Management Software (ToolsTalk BLM)*:

- Processor: 400 MHz (800 MHz or above recommended)
- Memory: 256 Mb or above
- Hard disk space: 610 Mb (1 Gb recommended)
- Display: 1024 x 768, High Color (16-bit)
- Operating Systems: Windows XP Service Pack 3 (SP3), Windows 7, Windows 8.1, Windows 10
- Internet Explorer 5.01 or later (required for installation of the .NET Framework)
- Windows Installer 3.1
- Microsoft Excel 2007 or later (required to view the exported file with the tightening results)



NOTE: A system should meet these or the minimum requirements for the operating system, whichever is higher.

Introduction

1.4 EC Declaration of Conformity

The *Focus 60 / Focus 61* is in conformity with the requirements of the council Directives on 06/22/1998 on the approximation of the laws of the Member States relating:

- 2014/30/EC EMC Directive Electromagnetic Compatibility
- 2011/65/EC ROHS Directive Risk of Hazardous Substances
- 1999/05/EC R&TTE Directive Radio and Telecommunications Terminal Equipment
- 2014/35/EC LVD Low Voltage Directive

The *Focus 60 / Focus 61* complies with the following harmonized standards:

<u>Emission</u>

•	ETSI EN 301 489-3 v1.6.1	Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz
•	EN 61000-3-2:2006 + A1:2009 + A2:2009	Harmonic current emissions
•	EN 61000-3-3:2008	Voltage changes, voltage fluctuations and flicker
<u>Im</u>	munity	
•	ETSI EN 301 489-3 v1.6.1	Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz
•	EN 61000-4-2:2009	Electrostatic discharge immunity test (ESD)
•	EN 61000-4-3:2006 + A1:2008 + A2:2010	Radiated, radio-frequency, electromagnetic field immunity test
•	EN 61000-4-4:2004 + A1:2010	Electrical fast transient / burst immunity test (BURST)
•	EN 61000-4-5:2006	Surge immunity test (Surge)
•	EN 61000-4-6:2009	Immunity to conducted disturbances, induced by radio-frequencies fields
•	EN 61000-4-11:2004	Voltage dips, short interruptions and voltage variations immunity test



NOTE: Connect the SIP/SOP of the *Focus 60 / Focus 61* ONLY with devices in compliance with the following harmonized standards:

audio/video.

- IEC EN 60950-1:2005 + A1:2009 + A2:2013
- IEC EN 61010-1:2010

Safety requirements for electrical equipment for measurement, control, and laboratory use. General requirements.

Safety of electronic equipment within the field of

information

communication technology. General requirements.



NOTE: The internal battery of the *Focus 60 / Focus 61* is in conformity with the following harmonized standard:

IEC 60086-1:2015 Primary batteries – Part 1: General.

1.5 FCC/ IC

•

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules and with Industry Canada license-exempt RSS standard(s).

Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

and

technology

System Overview

2 SYSTEM OVERVIEW

The *Focus 60 / Focus 61* is a controller designed to manage a production line station where mechatronic MWR wrenches are used to do tightening operations.

The *Focus 61* can manage up to 10 MWR-TA divided into two stations. On each station, one MWR-TA can be active at a time.





The *Focus 60* can manage only one MWR-TA on one station:

Hereunder are the main functions of *Focus 60 / Focus 61*:

MAIN FUNCTIONS	FOCUS 60	FOCUS 61
MWR-TA management via 868 / 912 MHz radio module	X	X
<i>Torque/Angle/Time</i> monitoring (according to the MWR-TA model) to control if the tightening is <i>OK</i> or <i>Not OK</i>	X	X
Barcode scanner interface	X	X
Job management for the MWR-TA on two stations		X
Programming Software (<i>ToolsTalk BLM</i>) to program the controller and results download	X	X
Open Protocol connection		X
Toolsnet	X	X

The *Focus 60 / Focus 61* package contains the following items:

	Focus 60 / Focus 61 Controller (Focus $60 \rightarrow P/N 8439 0044 30$) (Focus $61 \rightarrow P/N 8439 0044 31$) The main module of the Focus 60 / Focus 61, which contains all the Hardware and Firmware.
Alles Copto BLM ToolsTelk BUX	ToolsTalk BLM (<i>P/N 8059 0981 10</i>) The <i>Management Software</i> . It represents the <i>Pset</i> and <i>Job</i> programming, configuration and retrieving results.
22	Power Cables The power cables depends on the region. The right one is always in the package.
	Antenna (Antenna (868 MHz) → P/N 4027 5022 13) (Antenna (915 MHz) → P/N 4027 5022 14) The Antenna is installed on the Focus 60 / Focus 61, for communicating with the MWR-TA.

The following additional module for *Focus 60 / Focus 61* is available:



3 INSTALLATION INSTRUCTIONS

3.1 Installing Focus 60 / Focus 61

WARNING: Install the *Focus 60 / Focus 61* close to the AC Power in order to manage it easy.



NOTE: Position the *Focus 60 / Focus 61* so that the On-Off switch is easily accessible.

NOTE: For maximum tool performance, mount *Focus 60 / Focus 61* in order to guarantee free airflow. This improves the cooling of the controller.

Mount the *Focus 60 / Focus 61* either on the wall or on steel plate by using four M5 screws. If mounting on a wall, make sure to use the correct wall bracket (plug and screw). If mounting on a steel plate, make sure that the plate is at least 2 mm thick.



NOTE: Refer to the paragraph "*Specifications* – *Dimensions*" to define how to install the M5 screws.



NOTE: Use *ONLY* the power cable provided with the *Focus 60 / Focus 61* package. Using of any other power cable may impair the protection provided by the equipment.

Focus 60 / Focus 61 User Guide

Installation Instructions

 Connect the power cable from the multifunctional power socket (refer to the figure on the right).
 Connect the power cable to the AC Power.



NOTE: By using the On-Off switch (placed on the bottom side of the *Focus 60 / Focus 61*), switch the *Focus 60 / Focus 61* on, to verify that the installation is correct. Check that the light of the On-Off switch is red and that the other LEDs (placed on the front panel) illuminate correctly.

User Interface

4 USER INTERFACES

4.1 Focus 60 / Focus 61 Display

During the start-up of the *Focus 60 / Focus 61*, the following screens show in sequence:



NOTE: The above screens refer to the *Focus 61* start-up. The start-up of the *Focus 60* is the same, unless the screen in the middle (*"Focus 60"* replaces *"Focus 61"*).

If no one MWR-TA is associated with any Station of the Focus 61, the following screen is shown:



If a MWR-TA is associated with one Station of the *Focus 60 / Focus 61*, but either the batteries level of the MWR-TA is too low or the MWR-TA is out of the range of the *Focus 60 / Focus 61*, the following screen is shown:



Associate the MWR-TA with a Station of the *Focus 60 / Focus 61*. After few seconds, the *Focus 60 / Focus 61* shows the data of the ongoing tightening operation on the MWR-TA (refer to the following picture):



MWR-TA serial number	Serial number of the MWR-TA that is working.	
Torque peak	Maximum torque measured during tightening phase.	
Torque click	Click-point measured during tightening phase.	
Status	Result of tightening operation of the operating MWR-TA. NOTE : Refer to the paragraph " <i>Executing tightening operations</i> " for further details.	
Angle	Maximum angle measured during the tightening phase.	
Batch counter	Number of the current tightening over the job step total tightenings.	

4.2 Focus 60 / Focus 61 Keyboard

Use the keyboard to browse the *Focus 60 / Focus 61* menu and to change the info screens:



Icon	Name	Description
ΟΚ ΟΚ		Middle button under the display. It changes the settings of the device.
DOWN		Left button under the display. It slides down the fields of the settings and decreases value in settings menu.
UP		Right button under the display. It slides up the fields of the settings and increases value in settings menu.

Focus 60 / Focus 61 LEDs 4.3

There are three LEDs on the *Focus 60 / Focus 61* front panel:

	LED color	Description		
Z.58 Nm pk 666 Nm 264 CK A	Blue	 The Blue LED is on when the system is ready. The system is <i>not ready</i>, if: there is an error (<i>Main error flag</i> in <i>MainState</i> but field is set); the system is processing an update (any of the flags in the update field of the <i>MainState</i> but field is set); the "<i>Ready</i>" flag in the script station state for any enabled station is not set. 		
	Red/ Blinking	Red : The <i>Focus 60 / Focus 61</i> communicates with ToolsTalk BLM.		
	Green	Blinking Green: The <i>Focus 60 / Focus 61</i> communicates with a MWR-TA.		
	Yellow	The <i>Focus 60 / Focus 61</i> display shows an error.		

4.4 Focus 60 / Focus 61 Ethernet Ports

The *Ethernet Port* allows the communication between the *Focus 60 / Focus 61* and ToolsTalk BLM. Two *Ethernet Ports* characterize the *Focus 61* (*Focus 60* has only one). See the pictures below.





Focus 61

4.5 Focus 60 / Focus 61 Barcode scanner Interface (RS232)

The *Focus 60 / Focus 61* has a barcode interface RS232 (see the pictures below) with a switchable 5V power supply (max 400 mA).

The Barcode interface RS232 parameters are as follows:

- 8 data bit
- 1 stop bit
- no parity
- Data Rate: it is settable according to customer needs (refer to the following table). By default, the Data Rate is set on *38400 bit/s*.

Data rate nominal (bit/s)	Data rate actual (bit/s)	Mismatch	Note
9600	9615	0.2%	
19200	19231	0.2%	
38400	38462	0.2%	
76800	76923	0.2%	
115200	114286	0.7%	
230400	235294	2.1%	Not yet available

• Pin assignment barcode scanner port:

	PIN #	Signal
Pin 1 Pin 5	1	
	2	RX
	3	TX
	4	
	5	GND
	6	
Pin 6 Pin 9	7	
	8	
	9	+5 VDC

User Interfaces

- No Prefix
- No Suffix
- TERMINATOR: CR + LF Terminator Specification:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
V	Е	Н	Ι	C	L	Е	_	Ι	D	E	Ν	Т	_	Ν	U	Μ	В	Е	R	\r	∖n
56	45	48	49	43	4C	45	5F	49	44	45	4E	54	5F	4E	55	4D	42	45	52	0D	0A
086	069	072	073	067	076	069	095	073	068	069	078	084	095	078	085	077	066	069	082	013	010



Focus 60

Focus 61

4.6 Focus 60 / Focus 61 I / O BUS (CAN)

I / O BUS (CAN) (see the pictures below) connects the *Stacklight* to the *Focus* 60 / *Focus* 61. The *Stacklight* is an optional tool that supplies a real time indication of each tightening result, system status, etc.

I / O BUS (CAN) parameters are as follows:

- Data Rate: 250000 bit/s
- Address range: 1...f
- Current at 24V: 250mA (maximum)
- Pin assignment I/O BUS (CAN):





NOTE: All signals and voltages are galvanically separated from the device.

User Interfaces







4.7 Focus 60 / Focus 61 Wave Flexible Antenna

The Wave Flexible Antenna (see the pictures below) allows the Focus 60 / Focus 61 to communicate with the MWR-TA.

The Wave Flexible Antenna parameters are as follows:

- 1/4 Wavelength Whip Antenna •
- Rugged Flexible Plastic Finish
- Available as BNC •
- Available as Straight or Right Angle •
- **Omni-Directional Design** •
- Impedance: 50Ω •
- Operating Temperatures: $-30 \degree C$ to $+60 \degree C$
- Insulation resistance: 500 M Ω at 500 VDC

Focus 60

Focus 61



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5 WORKING WITH ToolsTalk BLM





ToolsTalk BLM is a PC software package to manage the *Focus 60 / Focus 61*.

It offers user-friendly programming and real time monitoring.

ToolsTalk BLM is a configuration interface between the user and the *Focus 60 / Focus 61*.

The main features that characterize the configuration interface between the user and the *Focus 60 / Focus 61* are as follows:

- Stations configuration
- Pset / Job definition
- Events configuration (triggers to start a Job)
- Focus 61 settings
- Open Protocol settings



NOTE: For further details about *Software Installation* and *Software Registration*, refer respectively to the paragraphs "*Software Installation*" and "*Software Registration*".

5.1 Software Installation



NOTICE Install ToolsTalkBLM with PC administrator rights.



NOTICE Do not install the software from a shared folder/drive. Install the software from the supplied CD; if the CD content is copied into a PC folder, it must be a PC local folder.

To install the software, double-click the setup file and do the following instructions.

(i)	NOTICE For Window 7 operating system (<i>or later</i>), right- click the setup file and select the <i>Run as Administrator</i> (see the figure on the right):		Open Troubleshoot compatibility Open file location	
		9	TortoiseSVN	•
		۲	Run as administrator	
			7-Zip	•

Click *Continue Anyway* if the following *Windows message* is shown:

77	The software you are mittaling has not passed Windows Logo testing to verify its compatibility with Windows KP. (Tall me why this testing is mootant.)
	Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the software vendor for software that has passed Windows Logo testing

After double-clicking the setup file, if ToolsTalk BLM is already installed on the computer, the following message is shown:



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Working with ToolsTalk BLM

Click *Yes* in order to uninstall the ToolsTalk BLM software version installed on the computer. After clicking *Yes*, it is possible to continue with the installation process:



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<Back Instal Cancel

The following Installation screen alerts the operator that ToolsTalk BLM is being installed:



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Working with ToolsTalk BLM

At the end of the installation process, the screen on the right is shown:



Click *Finish*; ToolsTalk BLM is automatically started.

After installing the software, run the program by selecting *Start* \rightarrow *All Programs* \rightarrow *Atlas Copco Tools AB* \rightarrow *Tools Talk BLM*:



Working with ToolsTalk BLM



NOTICE ToolsTalk BLM Software runs also with *Windows Standard User*, except for the following issue:

• Log management

To avoid the previous issue, run ToolsTalk BLM as Administrator.

If the user does not run ToolsTalk BLM with *Administrator rights*, the pop-up on the right shows:

Click **Yes** to continue as *Standard User*: in this case, the user could encounter issues in some functionalities.

ToolsTalk I	BLM	- X
A	You are not running rights. We recommend to r rights. Continuing yo functionalibes.	ToolsTalk BLM with Administrator un ToolsTalk BLM with Administrator ou could encounter issues in some
	Are you really sure	you want to continue?
Don't ask	again	Yes No

5.2 Software registration

After installing the software, register at <u>www.atlascopco.com/tools/software</u>; if there is no registration, the software works as demo for 60 days.

Once the software is installed, enter the registration form by selecting *Start* \rightarrow *All Programs* \rightarrow *Atlas Copco Tools* $AB \rightarrow ACTLicense$ (refer to the screen on the right).



5.3 Software upgrade

If there is a software update of ToolsTalk BLM, simply install the new version; the previous one is automatically uninstalled.

Close the previous version during the update process.

There is no impact through the update on the settings, tightening programs and results.

5.4 Connecting with the Focus 60 / Focus 61



NOTE: This paragraph describes the connection between *Focus 61* and ToolsTalk BLM. The procedure to connect *Focus 60* with ToolsTalk BLM is basically the same.



Click ToolsTalk BLM icon to launch the software.

After clicking ToolsTalk BLM icon, the following screen shows:



If necessary, select "Focus 60" or "Focus 61" in the Target Device area as shown in the screen below:





Turn the *Focus 61* on and wait until the initialization is completed. Then verify that the PC and *Focus 61* are connected with the same network.

NOTE: The connection between the ToolsTalk BLM and the *Focus 60 / Focus 61* is done via Ethernet.

Use the red button (placed on the bottom of the controller), to turn the *Focus 61* on
After turning the *Focus 61* on, click *Connect* icon: *Search Devices option*, *IP Connection...* option and the list of devices connected with the network show (see the screen below).





Search Devices option updates the list of devices connected with the network in real time.

After clicking the *IP Connection...* option, the *IP Address Connection* pop-up (see the figure on the right) shows. It connects a specific *Focus* with the network. Insert the *IP Address* of the desired device and click *Connect*.

Address Connectio	n	
Focus IP Address	*	<u>t t</u>
	Connect	Cancel

Connect Reload Live Mo Device Hes	initar Results Viewer Discon	nest «Copco (192 168 168	Toolba	r Device Device	Data a Settin	and ags					Target D	evice: Focu	a 61
Files area	e Famour es Carico I	vision	Lin	Hardware V10 nked Wren	ches	LAN	21	Set	si Number	A760004	11	-	
8 1/0 Accesso	nes 4 4	Wrench Type	Serial Number	Base FW	Min Tarque	Max Torque	Over Torque	Last Seen	RSS Base	RSSI Device	Battery Status	In Cade	
Menory		MWR_TA_25		A70009411 v22.5					42		ø	2	
😑 🎜 🗲 Stazone2		MWR_TA_50	A6800062A	A76000411 v2.2.5	5	50	60.0	۲.	-41	-54	D	1921	
interview identifier	•2	MWR_TA_50	A7400000A	A76000411 v2.2.5) 5	50	60.0	4	-52	-58		23	
i≣ [[]]] Wench	es Busy W	enches		26									
14 1 2000	4	Type		Earn cw	Men	Torque	Torque	Sem	Base	Device	Batus Status	in Code	
Ш 1/0 Ассная		MWR_TA_25	Bus	y Wrench	es	4	10.0		-66	-11	Ð	۳.	
Menory		MWR_TA_50	A6900061A	A84900071 y2.2.4	5	50	60.0	2	-56	-56		0	
E Connections													
I Network Ada	pton Available	Wrenches	- and	Base par	Min	Max	Over	Las	RSS	RSSI	Battery	In Freder	
Facada View	Status	bar	Ave	ailable Wr	Tonque <mark>enche</mark>	Torque	Tongue	Seen	Aser	Device	Status	PT LINDE	

Select the desired device. Then wait until ToolsTalk BLM interface shows:

After connecting the desired device, *Connect* icon (placed on the toolbar) gets disabled, while *Disconnect* icon gets active: click to disconnect the system:



5.4.1 Menu list

The following options are available on the ToolsTalk BLM Menu list:

ILLUSTRATION	NAME	DESCRIPTION
File View Tools ? Exit Connect Reload Live Monitor	File	" <i>File</i> " allows customer to exit from ToolsTalk BLM Software.
File View Tools Image: Connect Status Bar Connec Status Bar Connect Status Bar Connect Status Bar Connect Status	View	"View" enables or disables the Toolbar and the Status Bar.
File View Tools ? Image: Second connect Image: Second connect Image: Second connect Image: Second connect Device Files Image: Second connect Image: Second connect Image: Second connect At Super User	Tools	 <i>"Tools</i>" provides the following functions: Log Viewer (refer to paragraph <i>"Enabling LOG Viewer"</i>) Download Log (refer to the paragraph <i>"Download LOG"</i>) Backup/Restore (refer to paragraph <i>"ToolsTalk BLM Backup and Restore / Update"</i>) Super User (available only for Atlas Copco Service Personnel)

5.4.1.1 Enabling LOG Viewer

Enable LOG Viewer to trace the ToolsTalk BLM operations with the *Focus 60 / Focus 61*: this is helpful for troubleshooting activities.

Select *Tools* → *Log Viewer*:

File	View	Tools	?	
••	1	📓 Lo	og Viewer	
Connec				
Device Files			ckup/Restore	•
	At	Su	iper User	•

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Click *Show Log* to display the information related to the "Log Messages" (operations made between the ToolsTalk BLM and the *Focus 60 / Focus 61*):

🛃 Log Viewer		
Show Log		
Date Time 07 October 2016 07 October 2016 07 October 2016 07 October 2016 07 October 2016	Status Error 11:24:14:347 11:24:15:018 11:24:15:018 11:24:15:018 11:24:15:018 11:24:15:018	"Message" Complete No Error! "Initialization of Focus& client" Error Error during connection process! "Focus& client could not sent a ping to the device!" Complete No Error! "Focus& client successfully sent a ping to the device!" Complete No Error! "Connection established!" Complete No Error! "Receiving: A6800062A#e1>>A76000411#d0 51 e7002112 -48 2.2.5 1 0 0/2 1dc2 0000
07 October 2016 07 October 2016	11:24:15:533 11:24:15:533	Complete No Error! "Sending: #D1>>A76000411#B0 ACCESS 4" Complete No Error! "Receiving: A76000411#b0>>A76000411#d1 OK d6Jh22cb
07 October 2016 07 October 2016 "	11:24:15:548 11:24:15:611	Complete No Error! "Sending: #D3>>A76000411#B0 LOGIN 4 123" Complete No Error! "Receiving: A76000411#b0>>A76000411#d3 Hi !
07 October 2016 07 October 2016 "	11:24:15:626 11:24:15:689	Complete No Error! "Sending: #D3>>A76000411#80 ?SYST" Complete No Error! "Receiving: A76000411#b0>>A76000411#d3 SYST TYPE Focus61
07 October 2016	11:24:15:736	Complete No Error! "Receiving: A76000411#b0>>A76000411#d3 SYST NAME AtlasCopco
07 October 2016	11:24:15:782	Complete No Error! "Receiving: A76000411#b0>>A76000411#d3 SYST SN A76000411
07 October 2016 UDM1.0.7	11:24:15:782	Complete No Error! "Receiving: A76000411#b0>>A76000411#d3 SYST MB FMB v5.5.0 LAN2.3 HW3.0
07 October 2016 UDM1.0.8	11:24:15:782	Complete No Error! "Receiving: A76000411#b0>>A76000411#d3 SYST EXT1 MPC v2.3.0 LAN2.3 HW1.2
07 October 2016	11:24:15:829	Complete No Error! "Receiving: A76000411#b0>>A76000411#d3 SYST EXT2 -
07 October 2016 0000 0000	11:24:15:829	Complete No Error! "Receiving: A76000411#b0>>A76000411#d3 SYST STATE 00e50060 00000000 0000
07 October 2016	11:24:15:829	Complete No Error! "Receiving: A76000411#b0>>A76000411#d3 SYST DSMEM 208/24573 (1,208)

5.4.1.2 Download LOG

Select *Tools* \rightarrow *Download LOG* to download the LOG file stored in the *Focus 60 / Focus 61* memory.

After clicking, the following pop-up shows:

Click the *Folder icon* to select the destination folder of the LOG file.

Filename	
LG201609.LOG	
LG201610.LOG	
Folder icon	

5.4.1.3 ToolsTalk BLM Backup and Restore / Update

5.4.1.3.1 *Performing Backup*

Select *Tools* \rightarrow *Backup/Restore* \rightarrow *Backup*... (see the figure below):



After clicking *Backup*..., the pop-up on the right shows:

Backup	
Backup File	Folder icon
	Save

Organize • New folder		间 • • •
Favorites	E Libraries Carmine Pacente	-
Desktop		
Carl Libraties Documents Music Pictures Subversion		Text box of the Focus Backup File name
File name: Save as type: Focus Baci	sup Files (*.fbk)	

Click the "Folder" icon (see the above pop-up) to define the Backup File; the following window shows:

Type the *Focus Backup File name* into the related text box (see the figure above) and select the desired *"destination folder"*.



5.4.1.3.2 Performing Restore / Update



NOTE: Please, clean the system before restore backups.

For both *Stations*, click *Memory* (placed in the *Device Files area*); the pop-up on the right shows:

Click "*Delete objects*" to delete *Jobs*, *Events, identifiers, Accessories* stored on the device memory.

Finally, remove all of the wrenches.

Revel	Reset	
	Dajacta Dajacta objecta Uotra Even device reasory	te klentfent Accessionistrat en dansforster
	Tel Vennetz	2 Adventions
	四神寺	[2] Parameters
		Delete objects
	Resulte	and at the dovce numary

Select *Tools* → *Backup/Restore* → *Restore/Update...* (see the figure below):



After clicking *Restore/Update...*, the pop-up on the right shows:

Update Type	Check	Release Notes
		<i>Folder</i> icon
	Update Type	Update Type Check

Click the "Folder" icon (see the above popup) to open either the Focus Backup File or the Firmware Upgrade File; the window on the right shows:

Select either the *Focus Backup File* or the *Firmware Upgrade File* with the related filename extension.

For the *Focus Backup File* open the drop down list on the right of the "*File name*" text box and select *Focus Backup File* (*.*fbk*).

For the *Firmware Upgrade File* (sent by manufacturer to upgrade the *Focus 60 / Focus 61*) open the drop down list on the right of the *"File name"* text box and select *Firmware Upgrade File* (*.ud).

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Organice . New folde	#12		□ # + □
Favorites	Name Ubraries Carmine Pacente Computer		
Desktop	Network		
Comments Co		Filename	
File n	ene	Focus Bac Receil Date Firmware	kup Files (*.fbk) Sup Free (*.fok) Jpgrade Files (*.ud)

Finally, click *Open*; the pop-up on the right shows:

Make sure that each *Updated Type* is correctly checked; then click *Update*.

Updat	Ipdate/Restore						
Backu	Backup/Update File C:\Users\itdcp\Desktop\Test fbk						
	Device Type	Update Type	Check	Release Notes			
	Focus6x_Mainboard	Configuration	V				
	Focus6x_Mainboard	Stations	V				
	Focus6x_Mainboard	Ethernet_Configuration	V				
	MPC	Stations	V				
	MPC	Jobs	V				
	MPC	Bolts	V				
	MPC	UserFiles	V				
	MPC	Ethernet_Configuration	V				
				Update Cancel			

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"Settings saved" pop-up and click OK.



NOTE: Before rebooting, it is highly recommended to select / confirm the correct Ethernet configuration, by acting on the Network Adapters section placed in the Device Files area.

OK

5.4.2 Toolbar

The *Toolbar* icons are shortcuts to the following functions:

ICON	ICON NAME	DESCRIPTION				
Connect	Connect	"Connect" icon connects the ToolsTalk BLM with the Focus 60 / Focus 61.				
Reload	Reload	"Reload" icon reloads the data of the Focus 60 / Focus 61 connected.				
		<i>"Live Monitor" icon</i> opens the <i>Live Monitor functions</i> , showing in real time the tightening from the connected wrenches.				
Live Monitor	Live Monitor	NOTE : The tightenings (in real time) are displayed only one by one.				
		NOTE : Refer to the paragraph " <i>Live Monitor</i> " for further details.				
		"Results Viewer" icon shows the latest results stored by the device.				
Results Viewer	Results Viewer	NOTE: The <i>only</i> applicable filters are those set on the device (refer to the paragraph " <i>Device Settings</i> " for further details).				
Results viewer		NOTE : Refer to the paragraph " <i>Results Viewer</i> " for further details.				
Disconnect	Disconnect	"Disconnect" icon disconnects the ToolsTalk BLM from the Foci 60 / Focus 61.				

5.4.3 Status bar

The status bar shows the connection status between *Focus 60 / Focus 61* and ToolsTalk BLM.

When the connection between *Focus 60 / Focus 61* and ToolsTalk BLM is stable, a green bullet followed by "*Connected*" represents the *connection status* (see the figure on the right):

Connection status 🔵 Connected

If the connection between *Focus 60 / Focus 61* and ToolsTalk BLM is not found, a red bullet followed by "*Not Connected*" represents the *connection status* (see the figure on the right):

Connection status	Not Connected
	-

6 PROGRAMMING Focus 60 / Focus 61



The *Focus 61* can manage one or two stations, while the *Focus 60* can manage only one station.

The stations are virtual, used by the software to let the device manage the jobs of the operators working, for instance, of the two sides of the same assembly area (in the case of the *Focus 61*).

For each station, the sequence of operations that the operator must execute is defined into one or more *Jobs*. Each *Job* is a set of *Pset*, which is the tightening program loaded on the MWR-TA.



The *Jobs* start either automatically when the *Focus 60 / Focus 61* turns on or starting the operation by external signal given by scanning a barcode string or by the AOP command (refer to paragraph "*Events Configuration*").

Connect ONLY one barcode scanner with the Focus 60 / Focus 61.

It is not possible to connect more stacklights (or other compatible components) with the *Focus 60 / Focus 61*, if the connected I/O Device forwards the I/O Bus physically.

Connect ToolsTalk BLM with the *Focus 60 / Focus 61* (refer to paragraph "*Connecting with the Focus 60 / Focus 61*").

On the left of the main screen (in the *Device Files area*), there are the *Station(s)* with the associated *Jobs*:



The following paragraphs describe step-by-step how to configure *Stations*, *Psets*, *Jobs* and *Events*, and how to *associate the MRW Wrenches with Station(s)*.

6.1 Stations Configuration



The *Device Files area* defines the stations associated with the *Focus 60 / Focus 61* connected. For each station there are MWR-TA associated, which execute the *Jobs* programmed.

For renaming the *Station* associated with the *Focus 60 / Focus 61* connected, right-click in correspondence of the symbol placed close to each station name and shown on the right:



The following screen is shown:



After clicking "Rename Station ..." the following screen shows:

name Station		
Old Station Name	Station_1	1. Type the " <i>New Station Name</i> "
New Station Name		
2. Click Save		Save

Type the "*New Station Name*" in correspondence of the respective text box; then click **Save**.

Once it is done, the *Station name* in the *Device Files area* is renamed according to the new input (for instance, in this case, "*Station_A*"):



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6.2 Associating the MWR wrenches with Station(s)



It is possible to associated up to 10 MWR-TA with a *Focus 61*, divided into the two *Stations* (one MWR-TA on one *Station* for *Focus 60*).

The *Linked Wrenches* section lists all the usable MWR-TA.

The MWR-TA shown as *available* or *busy* are only the MWR-TA powered on and visible from the controller via radio.

Release Live Monitor Resul	As Viewer Discom	web .										arget Di	THE PARTY OF
And and and	Aler	Copeo (192 168 168	112										
Stater, A	Device De	Denne Settings											
())) Wentles	Person	v5500		Hardware	¥3.0		LAN	<i>a</i> 3	Seta	i Nietzer	A760004	11:	
- 900 ann	Unked	for the											
· 1/0 Accommentes	4	Type		East	110	Mes	Hat	Over	Lat.	Bear	Device	Sales	In Credie
Menary			Link	ed Wre	enche	es sec	ction						
Dr Statur 2								5					
IIII therefore			Busy	Wrend	ches s	sectic	on						
III Wenter	Den We	instan			_	_			_	_		_	
Dol Atta	4	Wareh	Seriel Manhar	Base	FW	Siles Torme	Mass	Over 1	Last	PISSI Date	ASS	Battery Vision	In Cristle
		ANNE TA 25	AGOVERNA.	AM100071	422115	12	13	30.0		-0	10.00	D	10
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Accession		ANNO TA ADA								and the second	1500		100
a 1/2 Accounts		MWR_TA_SD	Ava	ilable	Wren	iches	sect	ion					
Accounts		MWR_TA_SI	Ava	ilable	Wren	iches	sect	ion				_	
Corvectors Corvectors Fature Actuation	Augulation Fry	WWR_TA_SO Worktas	Ava	ilable	Wren	iches	sect	ion	Last	P(55)	8551	Labora Data	H Dade
Accumates Accumates Meroy Carrectore Carrectore Fathouth Atigates Facula Viewer	Augustation 4-2	Wanches Wanches Wanch Tipe	Ava	ilable	Wren	nches Tese	sect	Cher Tingue	Lat	HSSI Base	RSSI Device	Latery Data	In Coadle
Correctors Correctors Correctors Fature: Adaptes Facula Viewer	2004680 67	WWR_TA_SI Werehie Wirech Tipe	Ava Jerie Baster	ilable Sa	Wren	Naches Tanaan	Nue.	Over Teque	Lat	PISSA Bran	ASSI Device	Eday Data	In Dade
Correctors Correctors Faturet Adaptes Faturet Adaptes Faturet States	Augustan 47	MWR_TA_50 Weenthes Wheeth Tipe Mmr_TA_50 MWR_TA_50	Ava Serid Rather Artistotota	ilable Im	<i>Wren</i> <i>PW</i> +2258	Man Temper	No	Cher Terque (C3) (C3)	Las See	11550 Base	ASSI Device 48	Estery Data	hi Cade

For each MWR-TA the following information are displayed:

Wrench Type	MWR-TA model
Serial Number	Serial number marked on the MWR wrench
Base SN	Serial number of the Focus 60 / Focus 61
FW	Firmware version loaded on the MWR-TA
Minimum Torque	Minimum torque values for the MWR-TA model
Maximum Torque	Maximum torque values for the MWR-TA model
Overload Torque	Maximum overload torque for the MWR-TA model
	<i>"Keep alive"</i> mode of the MWR-TA by the controller
Last Seen	NOTE : This box is highlighted by different colors according to the time of connection failure
RSSI Base	Received Signal Strenght Indication (indicated in dBm)
RSSI Device	Received Signal Strenght Indication of the Device (indicated in dBm)
Battery status	$Green \rightarrow$ Battery charge ok $Red \rightarrow$ Battery charge low $Empty \rightarrow$ MWR-TA not available (but already linked)
In Cradle	Activated if the MWR-TA is on the Charging Cradle MWR

Click the *Refresh* icons to refresh the list of wrenches both in the *Busy Wrenches* field and in the *Available Wrenches* field:

	Busy V	Vrenches -												
	4	V T	Vrench Type	Serial Number	Base SN	FW	Min Torque	Max Torque	Over Torque	Last Seen	RSSI Base	RSSI Device	Battery Status	In Cradle
Refresh	Þ	м	WR_TA_25	A6800003A	A84900071	v2.2.1.0			30.0		-64	-82	₽	
icon		M	WR_TA_50	A7400041A	A84900400	v2.2.5.0	5	50	60.0	3	-48	-70		
Refresh														
icon	Availab	le Wrencł	hes											
	4	V T	Vrench jype	Serial Number	Base SN	FW	Min Torque	Max Torque	Over Torque	Last Seen	RSSI Base	RSSI Device	Battery Status	In Cradle
	Þ	М	WR_TA_50	A6800061A		v2.2.4.0	5	50	60.0	1	-50	-48	D	
		М	WR_TA_50	A6800062A	-	v2.2.5.0	5	50	60.0	1	-48	-48		
							-				40	40	-	
		M	WR_TA_50	A8380039A	-	v2.2.5.0	5	50	60.0	1	-46	-48		V

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To associate a MWR-TA with a *Station*, drag one of the available MWR-TA and drop it into the *Wrench* menu of the *Station* (refer to the figure below):

Recerc Live worker Result to	- Caller												
Alacipo	Mar Nor	Copico (192, 168, 168	1121										
Sales_1	Device De	es Deuce Settings											
i ili interiore	Ferman	v5.502		Hebian	+10		LAN	43	See	i Nucher	3762004	as;	
ANDRESS	Larked V	Vienches											
- 10	4	Wench Type	Senal Namber	Sine SN	FW	Nei Tietze	Het. Torque	Over Torque	Last	RSSI Boot	RSSR Device	Datesy Sata	In Crade
- particular -		MOTO TA SO	a measurements		-		-	10.0		-63		0	
Accessor Mercey F Sator, 2 Ministry Usersteen	Barry The	D Ava v	orag the ailable wrench	e wren <i>Wren</i> icon p <i>File</i>	ich ic <i>ches</i> placed placed s are	on fro sectio 1 in L a	om th on to Devic	ne the e		RSSI	RSR	Detry	in Caxle
Accession Mercey Station_2 IIII Viewthen IIII Viewthen		D Ava v	orag the ailable wrench	e wren Wren icon j File	ich ice ches placed es are	on fro section in I a	om th on to Devic	ne the e		ASSI Rost	RSB Device	Datery Sata	in Castle
Accounts Mercey Station_2 Mercey Station_2 Mercey Marches Marches Data Too Accounts		D Ava v	orag the ailable vrench	e wren Wren icon p File	ch ic ches : placed s are	on fro sectio 1 in I a	om th on to Devic	ne the e		ASSI Rass	RSS Device	Lidery Sata	is Coste
Accesses Mercey Mercey Station_2 Marches Marches			orag the ailable wrench	e wren Wren icon p File	ch ice ches placed s are	on fro section 1 in I a	om th on to Devic	ne the e		RSSI Rost 48	RSS Devce	Letry Sala	in Coole
Accessor Mercey Station_2 Mercey Station_2 Mercey Subsection Mercey Adv Mercey Mercey Mercey Corrections			Prag the ailable vrench	e wren Wren icon I File	ch ic ches placed s are	on fro section in L a	om th on to Devic	ne the e		ASSI Ram 48	RSSB Device	Letry 2da	b Castle
		Manada Carlos	Prag the	e wren Wren icon p File	ch ic ches placec ps are	on fro section 1 in I a	om th on to Devic	e the e		RSSI Ross 48 RSSI Ross	RSSB Device -70 RSSB Device	Ldery Sata	In Coole 20 10 10 10 10 10 10 10
		MMR_TA_SO MMR_TA_SO MMR_TA_SO MMR_TA_SO MMR_TA_SO	orag the	e wren Wren icon I <i>File</i>	ch ice ches s placec s are	on fro section 1 in <i>I</i> a	om thon to Devic	ne the e		ASS9 Files 48 7333 Ease 8333	RSSB Device -70 RSSB Device 41	Defeny Sala D D D D D D D D D	H Caste
		Manchas Marchas Marchas Marchas Marchas	Prag the ailable vrench	e wren <i>Wren</i> icon I <i>Filé</i>	ch ice ches s placec s are	on fro section d in <i>I</i> a	om thon to Devic			ASSI Ram 43 43 Ram 43 Ram	RSSB Device -79 PSBL Device 41 48	bdey Sala D D D Sala D	In Credie III III In Credie III In Credie III III III III III III III I

On the MWR-TA associated, the YELLOW LEDs are active.

NOTE: The following *LEDs* characterize the *MWR-TA*:

- Yellow
- Red
- Green
- Blue

For further details about MWR-TA LEDs, refer to the "*MWR-TA and Charging Cradle MWR User Guide*".

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NOTE: The status of the MWR-TA shown in the figure above is refreshed dinamically in real time.

The MWR wrenches shown as Busy are associated to other Focus controllers.

Busy W	Busy Wrenches													
4		Wrench Type	Serial Number	Base SN	FW	Min Torque	Max Torque	Over Torque	Last Seen	RSSI Base	RSSI Device	Battery Status	In Cradle	
Þ		MWR_TA_25	A6800003A	A83912341	v2.2.1.0	2	25	30.0	0	-64	-68	D		
		MWR_TA_50	A7400041A	A84900400	v2.2.5.0	5	50	60.0	2	-48	-70			

To make a "Busy Wrench" available:

- Connect the controller that is associated with the wrench.
- Remove the wrench.
- In case that the controller is off or disconnected, it is possible to unlink the wrench by rightclicking and selecting *Unlink Wrench*:

MWR TA 25 A68000003A A83912341 v2.2.1.0 2 25 30.0 3 -48 -86	Busy W	renches Wrench Type	Serial Number	Base SN	FW	Min Torque	Max Torque	Over Torque	Last Seen	RSSI Base	RSSI Device	Battery Status	In Cradle
NIMWR TA 50 A7400041A A84900400 y2.2.5.0 5 50 60.0 1 -48 -70 ■	•	MWR TA 25 Unlink Wren	Aconomica Ich	A83912341	v2.2.1.0	2	25	30.0	3	-48	-86		
		MWR_TA_50	A7400041A	A84900400	v2.2.5.0	5	50	60.0	1	-48	-70	U)	



NOTE: The *Unlink Wrench* option does not work if the associated controller is on and in radio range.



NOTE: Please, be sure that the wrench is not in use on the other controller. If it is, it can cause malfunctions.

In some cases, a *Busy Wrench* is *Red* (see the picture below); it means that the controller has disassociated the MWR-TA, but it has not yet received this warning because it is out of radio range.

-Busy W	/renches —													
4	Wr Tyj	rench pe	Serial Number	Base SN	FW	Min Torque	Max Torque	Over Torque	Last Seen	RSSI Base	RSSI Device	Battery Status	In Cradle	^
▶	🔪 ми	/R_TA_25	A6800003A	A84900071	v2.2.1.0	2	25	30.0	2			D		
θ	NV MV	/R_TA_50	A6800062A	A76000411	v2.2.5.0	5	50	60.0	2	-48	-52			E
	MN	/R_TA_50	A7400041A	A84900400	v2.2.5.0	5	50	60.0	4	-48	-70			
	NM 🔨	/R TA 25	A6800004A	A84900071	v2.2.5.0	2	25	30.0	3	-50	-60			-

6.3 **Pset Configuration**

The set of parameters that controls a tightening process is contained into a so-called **Pset**. This section describes how to configure the Pset parameters necessary to do a tightening.

When a wrench is associated with a station while making a "*double-click*" on a MWR-TA, the page of the associated Pset is shown:

	Alexingue (152 Mil Mil 102 🔪 ADDODODA			
Sales_1	See Set Stop Lie Monitor Expert Inquit Distantion	Pset To	olbar	
All Section	Minimum Tonque (Yam) 2 Meximum Tonque (Yam) 25 0	verload Tompie (Nim) 30.0	Last Seen 4	2 452 Bere -52
= III Wester	Setrings	Sargue Geals		
AGROODIA	Sintegy Fortax controlled. Angle monitored •	Cycle stat	2	
* * ***		Meanum Tarque	-	
1/0 Accesses		Daniel Solar al	1	
Menory I	AWR-TA	Locarring log	-	
Naturali Adapters		Other Settion		
_	Angle Lines	Contra Seconda		
	Meanue Argie [1] 5	Tout Size (ren)	175	
	Material View (1, 1, 1)	Tata menu (7 menu)	-	
	san ma mga	Terenat ini	10	
		Dead Tare (s)	0	
M	-			

The *Pset Toolbar* (placed in the upper area of the above Pset window) provides the following functions:

ICON	FUNCTION	DESCRIPTION
	Save	Save the Pset parameters
	Start	Start the Pset on the MWR-TA. Refer to the chapter " <i>Executing Tightening Operations</i> " for further details
	Stop	Stop the Pset execution
	Live Monitor	Open the live results window (see the figure on the right): Weech Sonal Number: A6800082A #: 3021 DN1 : IDN2 : DN3 : Batch Stee 0 Max NOK 0 OK 0 NOK 0 Deter Batch Stee 0 Max NOK 0 OK 0 NOK 0 PEAK: 13,70 Nm PEAK: 37,32 ANGLE OK "Live Monitor" for further details
Ē	Export	Export the Pset in a .Pset file (formatted as xml)
J	Import	Load the Pset from the .Pset file exported previously
0	Information	General information about the MWR-TA connected with the Focus 60 / Focus 61. After clicking Information icon, the following screen shows:

The *Pset* consists of the following parameters:

SETTINGS							
FUNCTION	DESCRIPTION						
Strategy	Hereunder is a list of available strategies:						
	• <i>Torque controlled</i> : Only the torque is measured.						
	The test result is <i>OK</i> if the maximum torque applied during the tightening is within the torque limits:						
	Torque 🔺						
	Maximum torque						
	Minimum torque Time						
	• <i>Torque controlled, angle monitored</i> : Torque and angle are measured.						
	The test result is <i>OK</i> if the maximum torque applied during the tightening is within the torque limits, and the angle is also within the angle limits:						
	Torque •						
	Maximum torque						
	Minimum torque Min. angle Max. angle						

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TORQUE LIMITS				
FUNCTION	DESCRIPTION			
Cycle Start	Torque value from which the measurement of the tightening starts			
<i>Minimum torque</i> and <i>Maximum torque</i>	Torque limits to get a positive result			
Change screw at	Torque limit for which the screw could be damaged by the excessive torque applied. If the operator applies torque over this value, the result is marked as " $OVSC = Additional torque limit "overload screw" exceeded"$			
Loosening limit	If the operator applies torque in the wrong direction and reach this value, the result is marked as " $NEG = False \ direction \ of \ tightening \ (loosen)$ ". NOTE: If the <i>Loosening limit</i> is set to zero, no results are detected (the function is disabled).			

ANGLE LIMITS				
FUNCTION	DESCRIPTION			
<i>Minimum angle</i> and <i>Maximum angle</i>	Angle limits to get a positive result (<i>if angle value is considered in the test strategy</i>).			
Start final angle	Torque threshold from which the angle measurement starts.			

OTHER SETTINGS					
FUNCTION	DESCRIPTION				
Tool size (mm)	Specific length (in millimeters) that characterizes the end fitting tool installed on the MWR-TA (see the examples on the right):				
	NOTE : It is mandatory to enter the proper value. This value is used to calculate the proper torque applied to the joint.				
Tool Bend (• / Nm)	Bending of the end fitting tool installed on the MWR-TA.				
	NOTE : It is mandatory to enter the proper value. This value is used to compensate the bending of the end fitting tool in the angle measurement.				

FUNCTION	DESCRIPTION					
Rehit Value (*)	If the torque reaches the click value within this angle, it means that the screw was already tightened. In this case the result is marked as <i>RNOK</i> or <i>ROK</i> .					
	NOTE : Refer to the paragraph " <i>Executing Tightening Operations</i> " for further details about the results status.					
Timeout (s)	Maximum time (in seconds) of the measurement (starting from the moment that the torque reaches the <i>Cycle Start</i> value). The tightening operation should be completed before the timeout (see the figure on the right):					
	Torque [†]					
	If the timeout is too short (or the tightening too long) the result might not be taken at the proper maximum point:					
Dead Time (s)	Minimum time (in seconds) among two tightening operations. This timer starts when the torque goes below the <i>Cycle Start</i> value. Torque the Cycle Start value.					
	Start the new tightening operation after the <i>Dead</i> <i>Time</i> expires:					
	Cycle start Dead Time Timeout					
	Torque Result 1					
	If the operator starts a new tightening before the <i>Dead</i> <i>Time</i> expires, the maximum torque value of the whole trace is analyzed (see the figure on the right):					

6.4 Job Configuration

The *Job* is a set of tightening operations (steps) performed by the MWR-TA associated with a station. Each MWR-TA must be configured with its *Pset* as described in the paragraph above.

Connect Reload Live Monitor Results View Davice Res	AttanCopco [192,168,168,112]	
Add Job Marcoy	Job Settings area Job Settings Job Id 2 Job Id 2 Job Id 2 Job Id 2 Job Settings It Lock After Job Dave Job Order Head NOK Strategy Head NoK Strategy Head NoK Strategy Head Name Topologia Add Step area Name TEST Wrench A7400041A Nork D Tensord Jd D	Circe Circe
Additional Additional	Nerve Lief C & H × O O Nerve Steps List area	ndin NOK Timeout

Double-click *Add Job* (see the figure above) to create a new *Job*.

To remove a *Job* either double-click and select *Delete* or drag and drop the *Job* into the trash bin.

Job Settings area configures the Job according to the following parameters:

PARAMETER	DESCRIPTION
Job Name	Name of the <i>Job</i>

PARAMETER	DESCRIPTION					
Job Order	- <i>Fixed</i> : The <i>Steps</i> of the <i>Job</i> are executed in the order specified in the window above.					
	- <i>Free</i> : The <i>Steps</i> of the <i>Job</i> are executed according to the <i>Optional Trigger</i> defined in the <i>Step parameter</i> . The <i>Optional Trigger</i> is a barcode string that must be scanned before executing the step.					
	See below for further details about the Step parameters.					
NOK Strategy	- Abort: If a Step is executed with Not OK result, the Job is aborted.					
	- <i>Continue</i> : If a <i>Step</i> is executed with <i>Not OK</i> result, the <i>Job</i> continues.					
Timeout (s)	Maximum time (in seconds) to complete the <i>Job</i> . If it is equal to zero there is no control on the time. By default it is set on <i>120 seconds</i>					
Lock After Job	If enabled, the MWR-TA is locked at the end of the Job (the Job must start again to continue).					
Done	If disabled, a new Job starts automatically when the previous Job is complete.					

NOTE: The total number of *Jobs* is equal to *1000*. They are distributed as follows: *300 Jobs for Station 1, 300 Jobs for <u>Station 2</u> and 400 Jobs for global (<u>shared between Stations</u>).*

At the end of the configuration, click Save.



1

NOTE: Save icon is disabled if there are no steps in the Job.

To add a *Step*, enter the parameters in the *Add Step area* and click *Add Step*:

PARAMETER	DESCRIPTION				
Name	Step name				
Wrench	Select the MWR-TA from the list of MWR-TA associated with the Station				
Batch Size	Number of times/bolts that the Step works				
Infinite Batch Size	Selecting "Infinitive batch Size" option, the Step works an infinite number of times/bolts. This option disables "Batch size" setting				
Max NOK	For each tightening of the batch, it specifies how many times the operator can execute a test with <i>Not OK</i> result				
	For instance, if it is set to 2, the operator can repeat two times a wrong tightening; at the 3^{rd} Not OK, the batch stops and the Job continues or aborts depending from the NOK Strategy parameter defined in the Job				
Infinite Max NOK	Selecting " <i>Infinitive Max NOK</i> " option specifies that the operator can execute a test with <i>Not OK</i> result infinitely. This option disables " <i>Max NOK</i> " setting				
Timeout	Maximum time (in seconds) to start the Step from the moment the MWR-TA is ready to start				



NOTE: The maximum permitted number of Steps (per Job) is equal to 100.

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The *Steps List area* shows all of the *Steps* defined (see the picture on the right).

Steps	s List				
E₩	4 1	of1 🕨 🕨 🗙			
	Name	Wrench	Batch Size	Max NOK	Timeout
Þ	step1	A6800062A 🗸	1		
		A6800062A			



NOTE: It is not possible to modify a step already saved. To remove a step, select it and click *Remove* icon (\aleph) .

NOTE: It is MANDATORY to disconnect the ToolsTalk BLM to use *Focus 60/ Focus 61* and start a *Job*.

6.5 Identifier

Identifier option can both start / abort a *Jobs / Job steps* and record tightenings results.

Double-click *Identifier* icon placed in the *Device Files area* in order to open the configuration window:

Reload Live Month Henrie Viewer Disconne	set				80 M
Attaic	opco [192.168.168	11121 Sation_1 Iden	thers		
9xmon_1 Save Clear					
atula initialize Sat	on .				
I III Wenches Job To S	at NewJob				
a the Alexand					
Ast ab	Туре	Input Source	Length	Sprificant Postoria	Significant Strings
D'h.	200		. 0		Set Simps
Plewsob	Job Step		· 0		Set Doriga
AESCODEAA Breadte		ii.	<u>.</u>		Get Strings
iii 🖓 Atta					
1/0 Accessores	Part	Result Source	Туре	Significant Positions	
Aleman	Pert 1	Station_IDN	*		
-	Part 2	Job_IDN		•	
Connections *	Part 3	Jub_Step_IDN			
m					

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The following parameters configure the *Identifier*:

START JOBS										
Initialize station	Select the Job to use when the Focus 60 / Focus 61 is initialized.									
Message	Message area selects the signal that start a Job / Job step.									
	Туре	Type Input Source Length Significant Positions Significant Strings								
	Job	BARCODE	▼ 7	1,2,3	Set Strings					
	JobStep	BARCODE	▼ 9		Set Strings					
	Select the	signal between	the following optic	ons:						
		DD getwin								
	• AC	DF_selvin								
	• AC	n_laemijier								
	Define the	following parai	meters:							
	• Le	<i>ngth</i> : number of	t the characters of	the input signal (barcode o	r AOP)					
	• <i>Significant Position</i> : it defines the position of the characters that arranges the substring that starts the Job/Job step									
	• Significant String: click Set Strings button; the following window opens both for Job and Job steps:									
	Standfor Jok Type Stan	g Tethap	1 (*****)	Merether Step Type Drive Salue	1					
	Mettin	/ /kti		inte in	24					
		STORT: New AN	<	ET STEP	Ann fara T					
	Job la	<i>ist</i> : from the me	nu	Lab Stong Lints from						
	sele	ect the Job to us	e	<i>Job Steps list</i> : from menu select the ster	m the					
				mend select the step						
	[_10ee+]]		OK Canon		Lauge Concelling					

ABORT JOBS								
Message	Message Message area selects the signal that stop a Job.							
	T; Jol	ype Input Source BARCODE		Length	Significant Pos	sitions	Significar	it Strings Set Strings
	 Select the signal between the following options: Barcode AOP_setvin AOP_Identifier Define the following parameters: Length: the number of the characters of the input signal (barcode or AOP) Significant Position: the position of the characters that makes the substring that starts the Job Significant String: click Set Strings button; the pop-up on the right opens for Job. 							
				RESULT	TS			
Results area information d table (for fur results table, " <i>Results View</i>	def lispla ther refe ver")	ines the editable ayed in the results details about the er to the chapter b.	Part Part 1 Part 2 Part 3	Result Source Writeable Write_Once Station_IDN	▼ ▼ ▼	Type Job ▼ JobStep ▼	Significant Positions	
Results Source								
Station_IDN		Station name						
Job_IDN		Job name						
Job_Step_ID	N	Job Step name						
Writable		The IDN may be changed anytime during the active job, but it may just be updated during a <i>Job Step</i> start. An active <i>Job Step</i> is not affected.						
Write_Once		The IDN can be so the <i>Job</i> ends or is	et only o aborted.	once. Afterw	vards, all ch	anges are	rejected, exc	ept in the case

<u>Type</u>
Results Source Writable and Write_Once, define the command to use as reference (Job / JobStep) in order to extract the results string.
Significant Position
It defines the position of the characters that arranges the substring of the command to use as result.

6.6 I/O Accessories

I/O Accessories option configures the accessories utilized during the *Focus 60 / Focus 61* operations.

Right-click the *I/O Accessories* icon placed in the *Device Files area* in order to open the *New Accessory menu*:



After selecting Add	Accessory, the	following w	indow shows:
---------------------	----------------	-------------	--------------

Focus6x [192.168.168	8.61] B New Accessory		
Save			Close
Device			
Type StackLight	✓ Available	Stacklights 11	
Configuration			
Station1			
Node Number 11	SN 009f55c6 Max Num	ber of Lamps 5 SW Version	HW Version
		Position B	Digital Inputs
			Input 1
		None	None
	Lamp 5		Input 2
	Mounted:		None
	Not Configured		
			Digital Outputs
	setup	L	
	-1.2mp. 4	Position A	Mounted:
	Mounted:	None	
	Not Configured -		setup
	setup		
	Lamo 3		Mounted:
	Mounted:		
	Not Configured 👻		setup
	setup		Burrer
			DUTTE
	Lamp 2		Mounted:
	Mounted:		
	Not Configured v		
	setup		setup
	Mounted:		
	Not Configured v		
1000 C	setun		

		DEVICE
Туре		Accessory used
Available Stacklights		This drop-down list selects the ID channel to use in order to configure the accessory
		CONFIGURATION
Lamp	"Lan confi Do ti 1. S sl	<i>np</i> " section configures the behavior of each lamp. The <i>Stacklight</i> mounts up to 5 igurable lamps. the following procedure to configure " <i>Lamp</i> " section. tarting from <i>Lamp 1</i> , check the box in correspondence of " <i>Mounted</i> ": a lamp nows on the <i>Stacklight</i> on the left (see the figures below):
		After checking the box in correspondence of <i>"Mounted"</i> , a lamp shows on the <i>Stacklight</i>
	(NOTE: Configure the lamps of the <i>Stacklight</i> starting from lamp 1 to lamp 5 (in ascending order). Only the last configured lamp is editable. <i>For instance, after configuring all of the lamps, to edit lamp 3, it is necessary to disable the last configured lamps in this sequence: lamp 5 – lamp 4. To disable a lamp, remove the check mark in correspondence of "Mounted".</i>
	2. C fc N B A S th	Ppen the drop-down list (placed below Mounted" option) and select between the oblowing options: Not Configured, White, Red, Green, Yellow, lue, Red Rotating, Yellow Rotating, Siren. After setting the configuration, the lamp on the tacklight is automatically colored according to be option selected.

3. Click Setup: The Setup screen on the right shows:	
4. Select the <i>event condition</i> to associate with the lamp. After selecting the <i>condition</i> , the editable section on the right of the <i>Setup screen</i> gets automa active (refer to the following screen):	event tically
Setup M Lange 2	
Lang Configuration Nationary (n) Instrume (Not OK) Nationary (n) Adv State Nationary (n) Sequence State	

	CONFIGURATION
	 The "Behaviuor column" summarizes the editable section. Configure the editable section by setting temporary intervals of flashes and signal duration. Finally click Set (placed on the lower right corner of the editable section). It is possible to set up to 10 event conditions for the same lamp. Worre: It is not recommended selecting event conditions that do not agree on the same lamp (for instance Tightening OK and Tightening NOK). NOTE: The pop-up on the right shows, after reaching the maximum number of configurable events: Warning Max number of configurable events reached After configuring the necessary event conditions click Save (placed on the lower
Position A / B	right corner of the <i>Setup screen</i>). Position A / B on the <i>Stacklight</i> (refer to the figure in the left column) defines an input type between the following options: None Button KeySwitch 2 Pos. KeySwitch 3 Pos. None Button KeySwitch 2 Pos. KeySwitch 3 Pos.
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	CONFIGURATION
Digital Inputs	The external device sends one of the following signals to the <i>Stacklight:</i> Digital Inputs Imput 1 Input 1 Imput 2 None Imput 3 None Imput 3 Imput 4 Imput 4 None Imput 4 N
Buzzer	Do the following procedure to configure "Buzzer" section. 1. Check the box in correspondence of "Mounted"; the Setup button gets automatically active (refer to the following screen): Mounted:
	Image: Control on the control of th

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	ght of the	e Setup screen ge	ecting the <i>event co</i> as automatically ac	tive (refer to the following
Setup of Burne				
Long Conferences				
Conterned	EvertCondition	Behavior F		
 53 	Thighenesig Cit	Output analogues () () () () () () () () () (Swedr (Do
10	Tightening Not DK	1		Director in the second s
1	Job Stat			1.1 flash (P) and
10	Job Conditions			
	Job OK			ill first Tight
321	Job Not OK			C Tes 0 Sec
100	Job Erer		2	
	Securce Stat			
12	Seguence Conditions			
14	Sequence OK			
	Sequence Not OK			
2	Séquence Ensi			Editable section
323	Salation Enabled			
	Sector Connect			
				See. Carol
The " <i>Beh</i> Configure	<i>aviuor col</i> e the edita Finally cl	<i>lumn</i> " summarizes able section by se ick <i>Set</i> (placed on	the editable section tting temporary int the lower right cor	n. ervals of flashes and signal ner of the editable section).
duration. It is possi	ble to set	up to 10 event con is not recommend <i>ce Tightening OK a</i> be non-up on the	ditions. ed selecting event and Tightening NO.	conditions that do not agree <i>K</i>).
duration. It is possi	ble to set OTE: It for instance OTE: The light show he maxim onfigurable	up to 10 event con is not recommend <i>ce Tightening OK a</i> ne pop-up on the s, after reaching num number of le events:	ditions. ed selecting event and Tightening NO. Warning Max number	conditions that do not agree K).

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	CONFIGURA	TION	
3. Select the <i>event co</i> the right of the <i>Set</i>	<i>mdition</i> . After selec <i>up screen</i> gets autor	ting the <i>event cond</i> natically active (re	<i>dition</i> , the editable section on effer to the following screen):
Setup of Esturnal 1			
Lang Configuration			
Configured EmeriCondition	Defavour		
 Beneficial Control of Control o	Output exclution on [Down/No - Kerterie (M)]		Switch On
In the set	1		Flash 0 #sec
10 Add Canadiana			
20 data 0.6			W Tand Total
E Ate Not OK			C Terr I
Aub Enur		2	
El Sequence Bat			
El Seguerice Canditor	8		
E Sequence OK			
El Sequence Not OK			
121 Dates Coded			Editable section
ET Statue Deatlied		1	
E Sociat Connect			
	\sim		
Rehaviour	column		Editable section esection. rary intervals of flashes and signal ght corner of the editable section). event conditions that do not agree
Benaviour	column		
			Sine
	, [,] , ,	.1 12.11 .2	
The "Behaviuor co	olumn'' summarizes	the editable section	n.
Configure the edi	table section by set	ting temporary in	tervals of flashes and signal
		ting temportary in	set of the set of the set of the
duration. Finally c	lick Set (placed on t	he lower right corr	her of the editable section).
It is possible to set	up to 10 event cond	litions	
it is possible to set	up to 10 event cont	introllis.	
NOTE: It	is not recommende	ed selecting event	conditions that do not agree
(for instan	ce Tightening OK a	ATTON excing the event condition, the editable section on comatically active (refer to the following screen):	
Joi instan	ce rightening on a		-/·
Image: Contract of the section of t			
NOTE : T	he pop-up on the	fter selecting the <i>event condition</i> , the ex- gets automatically active (refer to the for the formation of the formation of the ex- entities the editable section. Inmarizes the editable section. In the lower right corner of the edition of the ex- event conditions. Commended selecting event conditions the ex- event conditions. Commended selecting event conditions the ex- event conditions. Commended selecting event conditions the ex- event conditions. Con the eaching ber of the ex- event conditions. Sarv event conditions, click Save (play	
right show	s after reaching		
the meni	s, alter reaching		
the maxin	num number of	A Max number	of configurable events reached
configurat	le events:		or configurable events reacticu
C			
	CONFIGURATION dition. After selecting the event condition, the editable section on o screen gets automatically active (refer to the following screen): Image: selecting the event condition, the editable section or o screen gets automatically active (refer to the following screen): Image: selecting the event condition or the editable section Image: selecting the event conditions of flashes and signal ck Set (placed on the lower right corner of the editable section). Ip to 10 event conditions. Is not recommended selecting event conditions that do not agree e Tightening OK and Tightening NOK). e pop-up on the section: is not recommended selecting event conditions that do not agree e trightening of and Tightening NOK). e pop-up on the section: is not recommended selecting event conditions that do not agree to the section is a not recommended selecting event conditions that do not agree to the section is a section the section is a section the section is a section if the section is a section is a section is a section if the section is a section if the section is a section is a section is a section is a section if the section is a section is a section if the section is a section is a section is a section if the section is a section is a section is a section if the section is a section		
After configuring	the necessary even	t conditions, click	Save (placed on the lower
right compared the	Satur sarcar)		queece on the lower
	seiup screen).		

After setting the *Stacklight*, click **Save** (placed on the upper left corner of the *New Accessory* window).

7

EXECUTING TIGHTENING OPERATIONS



NOTE: No effects resulting from special conditions should be detected when the *Focus 60 / Focus 61* is integrated into systems.

Once the *Focus 61* is configured as described in the previous paragraph "*Programming Focus 60 / Focus 61*", it is possible to start a *Job* on the *Station(s)*.

On each station, only one MWR-TA can work at a time.

The Job associated with each MWR-TA starts depending from the *Event* settings.





NOTE: Refer to the paragraph "*Associating the MWR wrenches with Station(s)*" for further details about the LED indication on the MWR-TA.





The *Focus 60 / Focus 61* display shows the tightening result of the last tightening:

Refer to the following *results status list* for possible results status that can be shown on the *Focus 60 / Focus 61* display:

- **OK** = Torque and angle within the limits (OK)
- NOK = Torque and angle above the limits (Not OK)
- LCK = Wrench locked
- **ANOK** = Torque and angle below the limits (Not OK)
- **BNOK** = Torque below the limits, angle within the limits (Not OK)
- **CNOK** = Torque below the limits, angle above the limits (Not OK)
- **DNOK** = Torque within the limits, angle above the limits (Not OK)
- **ENOK** = Torque within the limits, angle below the limits (Not OK)
- **FNOK** = Torque above the limits, angle below the limits (Not OK)
- **GNOK** = Torque above the limits, angle within the limits (Not OK)
- **ROK** = Existing fitting (double hit), torque within the limits
- **RNOK** = Existing fitting (double hit), torque above the limits
- **NEG** = False direction of tightening (loosen)
- **OVSC** = Additional torque limit "overload screw" exceeded
- **OVLD** = Overload value of the wrench exceeded! Check calibration urgently!
- **TNOK** = Timeout expired, torque / angle are not OK
- **TOK** = Timeout expired, torque / angle are OK
- **OVAR** = Maximum angular speed exceeded / it needs to be calibrated (Not OK)
- **OVAD** = Reading outside of the AD converter range (Not OK)

The following "Torque – Angle" graph shows all relevant Parameters Settings values.

According to them, the following example points the fields out that detect the results status above mentioned:



More precisely:



8 LIVE MONITOR



The *Live Monitor* icon shows in real time the tightening results of the MWR-TA connected with ToolsTalk BLM.

After clicking *Live Monitor*, after executing a tightening with a linked MWR-TA, the following screen shows:



Hereunder are the fields displayed in the above *Result Monitor* screen:

FUNCTION	DESCRIPTION
Wrench serial number	Serial number of the MWR-TA
#	Result ID
IDN1: IDN2: IDN3:	IDN defined in the <i>Job</i>
	NOTE : If the ToolsTalk BLM is connected, the IDN is NOT visible.
Export Results	This option exports in an Excel file the results displayed in a tightenings session
Batch Size, Max NOK	Pset parameters set for the MWR-TA
OK, NOK	Number of tightening operations with OK and Not OK results
<i>Torque result</i> and <i>Angle Result</i>	Peak and click torque/angle values of the last tightening operation. The boxes are green colored if the torque/angle peaks are between the minimum and maximum values defined in the <i>MWR-TA Pset</i> ; otherwise they are red colored
<i>Torque Status</i> and <i>Angle Status</i>	 This box shows the status and the limits defined in the <i>MWR-TA Pset</i>. The status can be: <i>Waiting</i>: Live results monitor open, but no results available yet <i>Low</i>: Torque/Angle lower than the minimum value <i>OK</i>: Torque/Angle within the limits <i>High</i>: Torque/Angle higher than the maximum value
Status	Overall status of the tightening operation. Refer to the paragraph " <i>Executing Tightening Operations</i> " for further details about the code shown here. The box is green if the <i>Status</i> is <i>OK</i> , yellow if the MWR-TA is locked, red if the <i>Status</i> is <i>Not OK</i> .
Timestamp	Date and time



NOTE: In case two MWR-TA on two different stations generate a result at the same time, only the last one is visible on the *Live Monitor* interface.

i

NOTE: For Psets executed directly on the MWR-TA, it is possible to open a *Live Monitor* interface for each MWR-TA:

most Reload Live Monitor Rep.	Its Viewer Disconnect		Target Device: Focus fil •
AttacCopes AttacCopes Start the Pset Start the Pset AttacConstant AttacConst	Attaccupor (152,144,148,152) Attaccupor (152,144,148,152) Attacc	Def beformation Def leformation Def leform	m 3 @ KSS2 Bace -50 ,
Arrowskiere Arrowskiere Arrowskiere Arrowskiere Arrowskiere Arrowskiere Arrowskiere	Angle Lanta Moniture Angle (*) 0 Matemum Angle (*) 60 Start Find Angle 2	Other Settings Tool Size (ron) 17.5 Tool Bend (* / Hen) 0 Field Volue (*) 8 Tenesul (s) 10 Deast Time (s) 8	

9

RESULTS VIEWER



The *Results Viewer* icon shows a list of the tightening results of all MWR-TA connected with ToolsTalk BLM.

After clicking *Results Viewer*, the following *Filters selection* pop-up shows:

	esuits Viewer Settings Fites			
	Filters selection		Optional filters ar	ea
	Select the ansurt of results to show a Show last 100 results Show last 500 results	Optored liters Date/Time	★ [12/01/2017]]+	Add.
Select the amount of results to show	Show last 1000 results Show last 5000 results Show last 10000 results	Wrench Status ANY	•	Add
	 Show at results 	Wrench Serial equal I	to (ANY	• or Add
Summary area	Field Where	First volue	Second value	Ferrove Onst
				OK Cancel

Select the amount of results to show, by acting on the left side of the above pop-up.

Set Date/time filter, Wrench Status filter and Wrench Serial filter in the Optional filters area.

• *Date/time filter*: click the drop-down list and select between "*Equal*" or "*Between*". "*Equal*" option filters results measured in a specified day.

	Date/Time	Equal 🔻	12/01/2017			Add
'Betwee	en" option filte	rs results accordin	ng to a defin	ned tin	ne interval:	
	Date/Time	Between -	12/01/2017		2:53:47 PM	and
			12/01/2017		2:53:47 PM	Add

After setting Date/time filter, click Add.

Results Viewer

• Wrench Status filter: click the drop-down list and select between the results status list (see the list on the right):	Wrench Status	ANY ANY OK NOK LCK ANOK BNOK CNOK DNOK ENOK FNOK
After setting Wrench Status filter, click Add.		GNOK ROK RNOK NEG OVSC OVLD TNOK TOK OVAR OVAR OVAD INFO

- Wrench Serial filter: set the Wrench Serial filter with one of the following procedures.
 - Click the drop-down list in correspondence of "*equal to*" in order to show the *Serial numbers* of the wrenches connected with one of the two *Stations*. Select one *Wrench Serial*.

Wrench Serial	equal to	ANY 👻	or
		ANY	
	starts with	A6800062A	Add
		A8380039A	

• Keep *ANY* on the drop-down list placed in correspondence of "*equal to*". Manually insert the *Serial number* of the necessary wrench in correspondence of "*starts with*". This function examines *Serial numbers* also if they are partially inserted into the related text box, provided that the partial *Serial number* starts from the first digit.

Wrench Serial	equal to	ANY 👻	or
	starts with	A759849	Add

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NOTE: Use either the first or the second procedure above given.

After setting Wrench Serial filter, click Add.

The summary area is automatically filled (see the following screen).

Results	Viewer Settings								
Filters									
Eik	tors selection								
	CIS SCIECTION		a			_		_	
	ect the amount of res	sults to show	Optional filters					Let 1	
۲	Show last 100 results	3	Date/Time	Between •	05/01/2017		9:00:00 AM	-	and
Show last 500 results				05/01/2017		6:00:00 PM		Add	
Show last 1000 results									
\square	Show last 5000 results		Wrench Status	ОК		-		ſ	Add
	Show last 10000 res	ults							
\odot	Show all results								
			Wrench Serial	equal to A	3380039A	_		J	or
				starts with					Add
Fiel	d	Where	First value		Second value	,			
Wre	ench Status	Equal	ок						
Dat	e / Time	Between	05/01/2017 09:0	0:00	05/01/2017 1	18:00:00			
Wre	ench Serial Number	Equal	A8380039A						
								F	Remove
									Clear
•						_	•		
							ОК		Cancel

"Remove" button (placed on the right of the Summary area) removes the filters inserted in the Summary area singularly.

"Clear" button (placed below "Remove" button) removes all of the filters inserted in the Summary area at the same time.

After recording the *Filters selection* pop-up, click *OK*; the following screen shows:



AttasCapce [152.19	R HE HZ	ATMODELA	Peoults Viewer								
Remits Fi	ten Device Filt	m Sel		- DB Export		Resul	ts Viewe	er toolbar			
Station Name	Station No.	Sec No. Forcus	Focus Counter	Date / Teve	IDN1	ADM2	ION3	Westh Type	Ser Ne Wench	Wrencb Counter	Wrench
Series .	1	A76000411	227	10/10/2018 18:5	Statur,2	Newside_2	STA22	NWR TA 25	A6800004A	5093	CK
Ser.1	0	A76000411	226	10/10/2016 18:5	Station_1	Nerro Jots	224	MWR TA SE	ASSOCIATIA	63414	06
Steen_2	T	A76000411	225	10/10/2016 18.5	Statur_2	Nermilats_2	STAZ2	MWR_TA_25	A6800004A	5092	OK.
9.0000_1	0	A76060411	224	10/10/2016 18.5	Station_1	Nervediator	221	MWR_TA_50	A7400041A	375	OK
Sann_1	0	A76000411	223	10/10/2016 18.5	Stature_1	Nervukata	225	MWR TA S	A7400036A	3670	OK.
Silon_1	0	A76000411	222	10/10/2015 18.5	Statur-1	NewJob	724	MWR_TA_50	AEBOODEZA	63413	OK
Station_1	0	A76000411	227	10/10/2016 18 5	Station_1	NewJob	221	MWH_TA_50	A7400041A	374	OK
Station_1	0	A76000411	220	10/10/2016 18.5	Station_1	NewJob	775	WWH_TA_S0	A7400030A	3669	OK
Station_1	0	A76000411	219	10/10/2015 18 1	Salion_1	Newslob	224	MWH_TA_50	A6800062A	63412	OK
Salar_1	0	A76000411	218	10/10/2016 18.5	Stelan_1	New-300	221	MWR_TA_S0	A7400041A	373	OK.
Station_5	0	A76000411	217	10/10/2016 18.5	Silation_1	NewJob	275	MWIT_TA_50	A7400000A	3668	DK
Station_2	1	A76000411	216	10/10/2016 18.5	Station_2	NewJob_2	STA22	MWR_TA_25	A600006A	5091	OK.
Station_1		A76000411	215	10/10/2016 18:5	Station_1	Nersclats	224	MWR_TA.50	AGEODK2A	63411	06
Station_1	0	A76000411	214	10/10/2016 18:5	Station_1	Neverable	221	NWR_TA_50	ANODETA	372	OM
Station_1		A76000411	213	10/10/2016 18.4.	Station_1	Nenvilida	224	MWILTA SD	AKBOOOK2A	63410	DK
Salar_2	1	A76000411	212	10/10/2016 18-4	Station,2	Nervitab_2	STAZ2	MWR_TA_25	A5800054A	5090	OK.
Sutor_1	0	A76000411	211	10/10/2018 184	Statton_1	NewJob	221	MWR_TA_S0	A7400041A	371	DK.
Simn 2	1	A76000411	210	10/10/2016 18.3	Statur, 2	NewJob_2	STAZ2	MWR_TA_25	Alisotocia	5089	OM
Station_1	0	A76000411	209	10/10/2016 16.3	Station1	Nermalak	225	WWR_TA_25	AGSOCODAA	5088	OK
Station_1	0	A76000411	208	05/10/2015 18.3	Statore1	litititar1_New	stop lives	MWH_TA_50	A6800062A	63409	OK
Sam_1		A76000411	207	05/10/2016 18.3	Starone 1	Junear's See	step3tee	MWR_TA_SE	AFRENOS2A	63408	OK
Station_1	0	A75000411	206	05/10/2016 18 3	*			MWH_TA_50	AGBODOGZA	63407	LOK

Click *Load Results* icon to load the results set previously; the following results list shows:

The *Results Viewer* toolbar shows the following commands:

Load Results icon	It loads all the results set in the <i>Filters selection</i> pop-up
Result Filters	It opens the <i>Filters selection</i> pop-up in order to modify the filters set previously
Device Filters Set	The Set Filters drop down menu is Read Only. It lists the Tightening and Results Filters Settings selected into the Device Settings page (for further details, refer to the paragraph "Tightening and Results Filters Settings")
Export	This option exports in an Excel file the Results List

10 Focus 60 / Focus 61 SETTINGS

10.1 Device Data

The Device Data indicates the main features of the Focus 60 / Focus 61.

Device Data	Device Settings						
Firmware	v5.5.1.0	Hardware	v3.0	LAN	v2.3	Serial Number	A83912341

Firmware	Firmware version loaded on the Focus 60 / Focus 61
Hardware	Hardware version of the Focus 60 / Focus 61
LAN	LAN version of the Focus 60 / Focus 61
Serial Number	Focus 60 / Focus 61 serial number

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NOTE: When programming the *Focus 60 / Focus 61* from ToolsTalk BLM, ensure that the *Focus 60 / Focus 61* is in the main menu.

10.2 Device Settings

Device Settings page sets the parameters that characterize the *Focus 60 / Focus 61*.

asic Settings			Head Filters Settings	
anguage .	İrghë •	Set Language		- 14
Meanurigunit	lin	Set Moosure List	Torgue Bolow Lott	1
Tens Sync	Constant .	Set Time Sync	Torque Above Lent	
Data and Time	11/15/2016 16 14 -	Set Cata & Tane	Angle fisites Limit	-
Mens Access Leve	Ful Normen	Set Menu Access		Get Filters
Contraction in the low sectors and	Settime		Bada Incanation Internet	
Aecode Scanoe	Settings		Hado Temperaceo Settingo Oneroi Europet e	Set Free
Baud Rate	Settings	Get Baud Pate	Hada Invanision Settings Chevel Europe 8 +	Set Fires
Baud Rote Power Supply	EMILO 1650	Set Baul Pate Set Frees Sonth	Rado Tomperson Tettings Creme Burge & *	Set Free
Baud Rose Foren Supply	8440 1600 -	Set Baul Pate	Rado Tempercan Settings One-of Europe &	(See Free
Baud Rote Power Supply	Settings (84.0 560 -	Set Baud Pitre	Rado Temperators Settings One of Bange 8 ==	Set Day
Baud Rote Power Supply Deploy Settinge	Settings (0.0.5600 - 08 -	Set Baul Pare	Rado Tengences Settinge Onevel Except k +	fin fin
Eaud Rote Fount Supply Neplay Settings	Serings BALD 1600	Set Baut Pate Set Press South	Rado Tengencian Settinge Onenni Europe k	See Tony
David Rose From Supply	Sectorga BALC 5460 · · · · · · · · · · · · · · · · · · ·	Set Baut Pate	Rado Temperation Settings Onese Europe 6	Tee Too
David Rote Power Supply Desplay Settings	Sector ups 01 0	Set linut Pate	Rado Temperation Settings Cheven Borge 6 -	i fint Free
Enad Rote Power Supply	Softways BALCO MEED OF D Balances Contend	Set Baut Pare	Rado Temperation Settings Cheven Borge 6 -	The Free

10.2.1 *Focus 60 / Focus 61* Basic settings

Basic Settings select the following features:

Basic Settings		
Language	English 🔹	Set Language
Measuring unit	Nm 👻	Set Measuring Unit
Time Sync	Command 👻	Set Time Sync
Date and Time	13/01/2017 09:08 🗐 🗸 🚺	Set Date & Time
Menu Access Level	Full Access 👻	Set Menu Access
Log Level (SD)	Production •	Set Log Level (SD)
Log Level (MPP)	Minimum v	Set Log Level (MPP)

• *Language*: it selects the *Focus 60 / Focus 61* language from the related list (refer to the screen below). Click "*Set Language*" to confirm:

Language	English 👻	Set Language
Measuring unit	Deutsch English	Set Measuring Unit

• *Measuring unit*: it selects the *Focus 60 / Focus 61* measurement unit from the related list (refer to the screen below). Click "*Set Measuring Unit*" to confirm:

Measuring unit	Nm 🔻	Set Measuring Unit
	Nm	
	lbfft	
	lbfin	
	ozfin	
Time Sync	kgfcm	Set Time Sync
	kgfm	

• *Time Sync*: it selects the *Time Sync* from the related list (refer to the screen below). Click "*Set Time Sync*" to confirm:

Time Sync	Command 👻	Set Time Sync
	Command	
Date and Time	Toolsnet	Set Date & Time

• *Date and time*: It selects the *Focus 60 / Focus 61 Date and Time* from the related section (refer to the screen below). Click "*Set Date & Time*" to confirm:

Date and Time	02/03/	/2016	16:47		C		Set Dat	e & Time
Menu Access Level	 marzo 2016 						•	u Access
	lun	mar	mer	gio	ven	sab	dom	
-Barcode Scanner	29	1	2	3	4	5	6	
	7	8	9	10	11	12	13	
	14	15	16	17	18	19	20	
Baud Rate	21	22	23	24	25	26	27	ud Rate
	28	29	30	31	1	2	3	
Power Supply	4	5	6	7	8	9	10	er Supply
		0	0)ggi:	02/03/	2016		



NOTE: Click the icon is to match the time set on the PC with the time of the *Focus 60 / Focus 61*.

10.2.2 Result Filters Settings

Select the Filter(s) to set on the results stored by the *Focus* 60 / *Focus* 61 from the related list placed in the *Result Filters Settings* (refer to the screen on the right) and click "Set Filters" to confirm:

Filter Name	
Torque Below Limit	
Torque Above Limit	
Angle Below Limit	
Angle Above Limit	
Set F	ilters

10.2.3 Barcode Scanner Settings

Select both the *Baud Rate* and *Power Supply* in order to set the *Focus 60 / Focus 61* from *Barcode Scanner Settings* (refer to the screen on the right) and click respectively "*Set Baud Rate*" and "*Set Power Supply*" to confirm:

Barcode Scanner Settings							
Baud Rate	Baud_38400 -	Set Baud Rate					
Power Supply	Off	Set Power Supply					

Focus 60 / Focus 61 Settings

10.2.4 Display Settings

Set both the *Brightness* and *Contrast* on the *Focus 60 / Focus 61* from the related section placed in the *Display Settings* (refer to the screen below) and click respectively "*Brightness*" and "*Contrast*" to confirm:

Display Settings				
	-		[
	-	-		
			-	
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	Brigh	ntness	Cont	trast

10.3 Network Adapters Configuration

The *Network Adapters* menu (place in the *Device Files area*) configures the *Ethernet Ports A* and *B*.



NOTE: It is MANDATORY to connect the *Focus* 60 / *Focus* 61 with ToolsTalk BLM before to access the *Network Adapters Configuration*.

Select *ETH_A* or *ETH_B* option. This ports are defined in the reference protocol.



The *Ethernet Properties* pop-up on the right shows:

Configure the *Network Parameters* (*IP Address, Netmask, Gateway*), enable or disable the *DHCP* and click *Save* to confirm.

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11 WORKING WITH Open Protocol

NOTE: Compatible Atlas Open Protocol (AOP): 1.6.3

Atlas Open Protocol (AOP) is a communication protocol that interfaces directly with the Focus 61.



To enable this application, double-click the *Open Protocol* icon placed in the *Device Files area* (refer to the picture above: *Connections section*); the following pop-up shows:

(Open Protocol Confi	guration			
	Ethernet Interface	ETH_B *			
	Keep Alive Timeout	15	2.	Click Advanced	
	Adjustment	None		Settings option	
1. Enable <i>Open Protocol</i>		Advanced Settings			
	Open Protocol				
	Enabled	Uisabled			
	Save	Cancel			

After enabling the *Open Protocol* (by clicking *Enabled* box placed in *Open Protocol* section – refer to the screen above), it is possible to access the *Advanced Settings* (by clicking *Advanced Settings* button):

	Extended Protocol Settings		The application needs to send a telegram at least every 10 s in order to keep the connection established. If no telegram is being received in
	Key	Value	time, the connection is closed by the
	Keep alive timeout	15	controller
	Maximum resent repetition	0	
	Telegram resent timeout	5	If no raply will be received
	Ethernet port A	4545	the telegram acknowledge is
	Ethernet port A	4546	transmitted again a number of
Timeframe within a telegram acknowledg	e	N	times equal to the Maximum resent repetition
needs to be received	Key Keep alive timeout	Value 15	
		OK	Cancel

After setting the *Extended Protocol Settings*, click OK; finally click Save in the below pop-up:

)pen Protocol Confi	guration
Ethernet Interface	ETH_B •
Keep Alive Timeout	15
Adjustment	None 💌
	Advanced Settings
Open Protocol	
Enabled	⑦ Disabled
Save	Cancel

11.1 Getting Result via Atlas Open Protocol

By the message "*MID 0001 – Communication start*", a third application can start to communicate via *Atlas Open Protocol* with the *Focus 61;* the reply (*MID 0002*) contains the basic information about the controller.

Through the message "MID 0060 – Last tightening result data subscribe", it is possible to make a subscription.

NOTE: It is <u>MANDATORY</u> to specify into the message *MID 0060* the Station ID (0 or 1).

From the subscription, all the tightening results performed will be sent to the *Atlas Open Protocol* application automatically by the message *MID 0061*.



NOTE: When the application does not want any further data from the *Focus 61*, it sends to the controller the message "*MID 0063- Last tightening result data unsubscribe*".



11.2 Starting a Job via Atlas Open Protocol by means of VIN or Identifier

By the message "*MID 0001 – Communication start*", the *Atlas Open Protocol* starts to communicate with the *Focus 61*; the reply (*MID 0002*) contains the basic information about the controller. Through the message "*MID 0050 – Vehicle ID Number download request*", it is possible to trigger an event (configured in the *Focus 61*) in order to start a *Job*.

NOTE: It is <u>MANDATORY</u> to specify into the message *MID 0050* the Station ID (0 or 1).

Before sending this message from the *Atlas Open Protocol* to the *Focus 61*, there are some mandatory steps to satisfy.

First, configure a *Job* to associate with the *Event* (refer to the paragraph "*Job Configuration*"). Second, configure an *Event*:

- *Event Type* must be either *AOP_SETVIN*
- Station action must be set on Enable Station
- Job action must be set on Start Job (thus select the Job previously configured)
- *Barcode action* must be set on *Station_IDN*

After configuring both a *Job* and an *Event*, when the *Atlas Open Protocol* sends a message "*MID 0050* – *Vehicle ID Number download request*" to the *Focus 61*, this receives a VIN and verifies that it matches with the *Pattern* configured; if it is, the *Job* starts and the Blue LED on the MWR-TA starts to blink.



In the third step the VIN (Vehicle ID Number) is subscribed by the *Atlas Open Protocol*. This means that every time when the controller receives a new VIN (e.g. via barcode scanner), this VIN is transmitted to *Atlas Open Protocol*.

NOTE: It is MANDATORY to specify into the message MID 0051 the Station ID (0 or 1).

The fourth step contains the MID to request the latest VIN from the controller. At the certain time the *Job* starts by a trigger, e.g. barcode, where a new VIN is set. In the last step this VIN is transferred via MID 0052 to the Atlas Open Protocol.





NOTE: The procedures above explained consider an *Event Type* set to *AOP_SETVIN* during the configuration of the *Event*.

If the *Event Type* is set to *AOP_IDENTIFIER*, the two procedures are the same, except the following conditions:

- MID 0050 Vehicle ID Number download request is replaced by MID 0150 Identifier download request
- MID 0051 Vehicle ID Number subscribe is replaced by MID 0151 Identifier subscribe
- MID 0052 Vehicle ID Number is replaced by MID 0152 Identifier

12 WORKING WITH ToolsNet

ToolsNet is an application that configures the *Focus 60 / Focus 61*, in order to allow to send data to the same ToolsNet.



To enable this application, double-click the *ToolsNet* icon placed in the *Device Files area* (refer to the screen above: *Connections section*); the following pop-up shows:

oloritet coningula		Ethernet Interface has 5
Ethernet Interface	ETH_A	- <i>None</i> : It disables the
Server ID Server IP Address	/ 🐨	comunication
Port Keen Alive Time	6575	to communicate with
Туре	Undefined	ToosNet

After setting the ToolsNet Configuration, click Save.

13 CBP

The CBP is a basic output protocol for tightening results. The default output port is 10001 on Ethernet interface A (1.2). Each dataset contains detailed information about the tightening according to the data output format listed in the table below:

Ser. No. Focus	Ser. No. Wrench	Data- Set-Type	Focus Counter	Station Group	MWR type	Date / Time	MWR Counter	Tightening Strategy	Tightening Status	Tightening Status Code	MWR Status
A76000441	A8370022A	f0	200	0	52	08.09.2016 11:13:18	214	M0	ОК	0	160
A76000441	A8370022A	f0	201	0	52	08.09.2016 11:13:21	215	M0	ОК	0	161
A76000441	A8370022A	f0	202	0	52	08.09.2016 11:13:23	216	M0	LCK	4000	160

IDN1	IDN2	IDN3	SeqID / JobID / JobstepID / PSET ID	Sequence OK	Sequence NOK	Target OK	max NOK	Sequence Step	Unit	Snug Point	Final Torque
Station1	NewJob	2x25Nm	1001010000	1	0	2	2	1	Nm	15.00	22.29
Station1	NewJob	2x25Nm	1001010000	2	0	2	2	2	Nm	15.00	22.71
-	-	-	1010000	0	0	0	0	0	Nm	15.00	22.40

Click Torque	Min. Torque	Max. Torque	Final Angle	Click Angle	Min. Angle	Max. Angle	tightening time	Max. Tightening Time	Station Name	Group ID	PSET Name
20.76	15.00	80.00	3.12	2.36	0.00	360.00	0.5	15	Station1	GRP0	PSET0
21.18	15.00	80.00	8.07	6.52	0.00	360.00	0.5	15	Station1	GRP0	PSET0
42542	15.00	80.00	7.59	7.00	0.00	360.00	0.5	15	Station1	GRP0	PSET0

CBP

14 MAINTENANCE

14.1 Focus 60 / Focus 61 Cleaning

Keep the Focus 60 / Focus 61 clean.

After use, remove any traces of oil, grease and dust from the *Focus 60 / Focus 61*, especially from the user interfaces (for further details about the user interfaces, refer to the chapter "*User Interfaces*").

Use an anti-static cleaning cloth in order to remove dust from the Focus 60 / Focus 61.

Avoid using harsh detergents to clean Focus 60 / Focus 61.

When the Ethernet cable(s) is not connected with the *Focus* 60 / Focus 61, insert the plug into the respective housing(s) in order to protect itself from the dust.

When the SD Card(s) is not inserted into the *Focus 60 / Focus 61*, insert the plug into the respective housing(s) in order to protect itself from the dust.

Keep always the connectors and the Serial Port RS232 clean, placed on the bottom side of the *Focus 60 / Focus 61*.

14.2 Fuses Replacement

Two *Miniature Fuses* (5 x 20 mm, Time-Lag T, L, 250 VAC) are installed into the *Focus 60 / Focus 61*.

The *Fuses Holder* (with the multifunctional power socket and the On-Off switch) is placed on the bottom side of the *Focus 60 / Focus 61*.

If an overheating occurs on the *Focus 60 / Focus 61* or if the On-Off switch is not red lighted when the *Focus 60 / Focus 61* is on, it is highly recommended to replace the *Miniature Fuses*.

Do the following procedure in order to replace the two *Miniature Fuses*:

- 1. If necessary, switch the *Focus 60 / Focus 61* off by acting on the On-Off switch placed on the bottom side of the device (refer to the figure on the right).
- 2. Disconnect the power cable from the AC Power in order to work in safe.
- 3. Disconnect the power cable from the multifunctional power socket (refer to the figure above).



Maintenance

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NOTE: Pay close attention during the execution of the next steps: the two *Miniature Fuses* could fall down on the floor. This is due to the fact that it is not necessary to remove the *Focus 60 / Focus 61* from its working position.

4. By using a shaped tool (i.e. screwdriver), extract the *Fuses Holder* as shown in the picture on the right:



5. After extracting the *Fuses Holder*, it is possible to see the two *Miniature Fuses* (refer to the picture on the right).

Remove the old *Miniature Fuses* and install the new ones.

Remove the old *Miniature Fuses* and install the new ones



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6. After installing the new *Miniature Fuses*, push the Fuses Holder into its housing as shown in the picture on the right:



NOTE: Use *ONLY* the power cable provided with the *Focus 60 / Focus 61* package. If you use any other power cable, the protection provided by the equipment may be impaired.

- 7. Reconnect the power cable to the multifunctional power socket
- 8. Reconnect the power cable to the AC Power.



NOTE: Switch the **Focus 60**/ **Focus 61** on, to verify that fuses replacement was done correctly. Check, that the light of the On-Off switch is red and if the other LEDs (on the front panel) illuminate correctly.

Maintenance

15 TROUBLESHOOTING GUIDE

Here is a quick troubleshooting guide for the *Focus 60 / Focus 61*.

If a problem occurs, before taking any action (replacing parts or contacting customer support), be sure to check that the *Focus 60 / Focus 61* was used correctly.

Improper operation can cause troubles even if the system is in good working order.

In case of issues, the log file (refer to paragraph "*Enabling LOG Viewer*" for further information) can provide information about the problem.



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