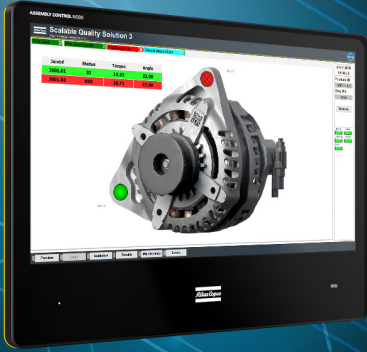# MTF6000 and Scalable Quality Solution 3 Integration

Pocket Guide

1   Revision history

Revision	Date	Author	Description
1.0	March 13, 2018	Falk Singer, Hendrik Fischer	Initial version
1.1	January 10, 2020	Hendrik Fischer	SQS3 name change; change of instructions due to SQS3 Configurator improvements
1.2	July 13, 2020	Hendrik Fischer	Updated MTF6000 identifier configuration

Contents

2   Purpose of this document

This document describes the configuration steps that are required to integrate a MicroTorque Focus 6000 (MTF6000) controller and the Scalable Quality Solution 3 (SQS3). It details only those steps that are specific to the basic integration of the two products. The reader of the document needs to possess good knowledge of the configuration and operation of all components involved.

3   Prerequisites

These components are required for a successful integration of MTF 6000 and SQS3:

- MTF6000 with IAM Process
- MTF6000 software version supported by SQS3 according to the SQS3 Fact Sheet: http://toosseas0004/portal/content.php/3343-Single-Qualition-Solution-tool-connectivity-corner
- ToolsTalk MT 7.6.3 or newer
- Scalable Quality Solution 3.3.0 or newer

4   MTF6000 configuration

4.1   Connect to the controller

Physically connect the MTF 6000 to your PC via USB or serial cable. If the controller has been configured on a network already, you can also connect to it via Ethernet. Start ToolsTalk MT using the icon on the PC desktop or the shortcut in the program menu and open the connection to the MTF 6000.

4.2   Configure the network settings of the MTF6000

The SQS3 can communicate to the MTF6000 via Ethernet only. The controller must be configured to operate on a network that the SQS3 can reach. If you are unsure about the correct settings for the network, consult a network administrator before taking the next steps.

In ToolsTalk MT open the *Controller settings* dialog and make these adjustments:

1. In the *Configuration* pane, find the *Network* stanza and set the *Network mode* to *Static*.
2. Enter an *IP address* that is valid on the network and not yet in use.
3. Enter the *Subnet mask* of the network and the IP address of the *Gateway* on the network.
4. Switch the *Open Protocol* parameter to "Enabled".

4.3   Connect the MTF6000 to the network

If the MTF6000 is not connected to the network yet, connect it now to test the settings you entered in the previous chapter. If the controller is already on the network, you can skip these steps.

1. Disconnect ToolsTalk MT from the MTF6000 or close the program.
2. Physically connect the controller to your network.
3. Start ToolsTalk MT and open the connection to the MTF6000 via Ethernet using the IP address you configured in the previous chapter.

If the connection is not successful, return to chapter 4.2, verify the network settings of the MTF6000 and correct them if needed.

4.4   Configure the startup source

The SQS3 and the MTF6000 will communicate via Open Protocol. The controller must be configured to accept commands from Open Protocol sources accordingly.

1. In ToolsTalk MT, open the *Controller settings* dialog.
2. In the *Configuration* pane find the *Startup* stanza and set *Select source* to "Protocol/ToolsTalk MT"

4.5   Configure Identifier 1

The SQS3 will submit an identifier to the MTF6000 via Open Protocol every time it selects a tightening program. The MTF6000 must be configured to properly process the identifier coming from the SQS3.

1. In ToolsTalk MT, open the Identifiers dialog.
2. Add a new identifier, select an available Number and enter a Name.
3. Open the new Identifier you just created.
4. Under Validation enter an Identification string length of 25.
5. Leave all character positions unselected in the dialog Identifier significant position setup.
6. Confirm the upcoming dialog with Yes.
7. Under Configuration select "Store in custom ID" as Action type and make sure Keep until replaced is set to "Yes".
8. Enter a Key 1 for the first Identifier, for example "ProductID".
9. Select character positions "{1-25}" in Format 1.
10. Select "Custom ID 1" as Save destination 1.
11. Close the dialog and confirm to save the new settings to the controller.

GENERAL SETTINGS

Name	SQS	Created	08.05.2020 16:56	Identification string	6546465465456
Revision	4	Modified	13.07.2020 11:57		

VALIDATION

Identification string length	25 0 - 512	Match part	{}	Match string	

CONFIGURATION

Action type	Store in custom ID ▼	Save destination 1	Custom ID 1 ▼	Identifier 3		Key 4		
Keep until replaced	Yes ▼	Identifier 2		Key 3		Format 4		
Identifier		Key 2		Format 3		Save destination 4	None ▼	
Key 1	ProductID	Format 2		Save destination 3	None ▼			
Format 1	{1-25}	Save destination 2	None ▼	Identifier 4				

4.6   Optional: configure additional identifiers

If you plan to configure the SQS3 to send 2, 3, or 4 identifiers to the MTF6000, you must also configure the MTF6000 to process these additional identifiers. If you are unsure at this point whether you will require additional identifiers from the SQS3 later on, go ahead and perform these next steps anyway:

1. From the Identifiers dialog, Add another identifier, select an available Number and enter a Name.
2. Open the new Identifier you just created.
3. Under Validation enter an Identification string length of 100.
4. Leave all character positions unselected in the dialog Identifier significant position setup.
5. Under Configuration select "Store in custom ID" as Action type and make sure Keep until replaced is set to "Yes".
6. Enter a Key 1 for the first Identifier, for example "ProductID".
7. Select character positions "{1-25}" in Format 1.
8. Select "Custom ID 1" as Save destination 1.
9. Repeat steps 5 to 7 for every additional identifier you would like the SQS3 to send to the MTF 6000. Format must be "{26-50}" for Identifier 2, "{51-75}" for Identifier 3 and "{76-100}" for Identifier 4. The Save destination must be "Custom ID 2", "Custom ID 3" and "Custom ID 4" accordingly.

5 Scalable Quality Solution 3 configuration

5.1 Add the tool

The Open Protocol connection to the MTF6000 needs to be configured:

1. In the *Station Tree*, add a new *Tool* to the *Hardware* of your station. Choose "Open Protocol Micro Torque" as the *Device class*.
2. Enter a *Tool/channel name* and the *IP Address* of the MTF6000 controller. The *Port* is always 4545 and does not need to be adjusted.
3. On the *Options* tab make sure the parameter *Set time of controller* is checked.
4. Select whether the SQS3 shall download *OK* or *NOK traces* from the MTF6000. Beware that the download of traces will increase the amount of disk capacity consumed by the SQS3 result data

5.2 Assign the tool to bolt cases

Assign the new MicroTorque Open Protocol device you configured to the bolt cases linked to your station and enter the Psets you want to use as tightening programs. The SQS3 will enable the tool for these bolt cases and select the Psets when you run the SQS3 operator guidance.
Please note that the *Read programs from tools* button is not available for Psets on the MTF 6000.

5.3 Optional: configure additional identifiers

If you wish to send a second, third or even fourth identifier from the SQS3 to the MTF 6000 for every product, you can configure them at the root of the Assembly Tree in the SQS3.

1. In the SQS3 Configurator open the *Product Tree* and click on *Assemblies*.
2. Select the tab *Identifiers*.
3. Enter the data you want the SQS3 to send to the MTF6000 as additional identifiers.

Note: If you configure additional identifiers in the SQS3 as described above, you also need to complete the steps described in chapter 4.6.

6 Verify the setup

Upon completion of the configuration start the SQS3 operator guidance. There is a new status light representing the newly configured MTF6000 at the right side of the screen. This status light should be green.

7   Troubleshooting

7.1   No connection from SQS3 to MTF 6000

The status light that represents the MTF6000 in the SQS3 operator guidance remains red. This means that the SQS3 is unable to establish a network connection to the MTF6000.

Cause	Solution
The network settings of the MTF 6000 do not meet the settings of the network it is in. The controller is completely unavailable on the network.	Try to connect ToolsTalk MT to the controller via Ethernet. If the connection is not available, use the USB cable to connect and verify the network settings of the MTF6000 with a network administrator. Correct them if needed.
The network settings of the PC that hosts the SQS3 do not meet the settings of the network it is in. No other network device can be reached from the PC.	Use the *ping* command to reach other devices on the network. If there's no connection to other network devices, verify the network settings of the PC with a network administrator and correct them if needed.
The IP address and/or the Open Protocol port of the MTF6000 is incorrectly configured in the SQS3.	In the SQS3 Configurator, open the *Network* tab of the MTF 6000 Open Protocol tool you configured for the MTF6000. Check the IP address and the Open Protocol port configured for the MTF6000. Correct them if needed. The Open Protocol port is always 4545.

7.2   Tool not enabled/tightening program not selected

The status light that represents the MTF6000 in the SQS3 operator guidance is green but the SQS3 cannot properly enable the tool and select a tightening program when a tightening needs to be done. The display of the MTF6000 shows the word "Disabled" in the top right corner of the Result view

Cause	Solution
There is no program number on the MTF6000 that matches the Tightening program assigned to the bolt case or bolt location in the SQS3 configuration.	In the SQS3 configuration verify that the Tightening program assigned to the bolt case or bolt location has a matching program number on the MTF6000. Correct it if needed.
The setting *Select source* of the MTF6000 is incorrect.	Connect ToolsTalk MT to the MTF 6000, open the *Controller settings* and change *Select source* to "Protocol/ToolsTalk MT". For details see chapter 4.4.
Open Protocol is disabled on the MTF6000.	Connect ToolsTalk MT to the MTF6000, open the *Controller settings* and switch *Open Protocol* to "Enabled". For details see chapter 4.3.

7.3   No torque data reported to SQS3

When a bolt is tightened, the result data is available from the display of the MTF6000 but the active bolt location on the SQS3 operator guidance stays blue instead of turning green or red. The operator guidance does not move on to the next bolt location and the tool remains enabled.

Cause	Solution
The identifier is not properly configured on the MTF6000.	Using ToolsTalk MT check the identifier configuration on the MTF6000. An identifier as described in chapter 4.5 is required for the integration with the SQS3. If you are using multiple identifiers, make sure you complete the steps of chapters 4.6 and 5.3 as well.

7.4   No traces available in SQS3

After a bolt has been tightened, the trace is not available in the trace view on the SQS3 operator guidance. The trace is also not available from the web UI for SQS3 result data.

Cause	Solution
The SQS3 is not configured to download OK or NOK traces from the MTF6000.	In the SQS3 Configurator open the configuration of the MTF6000 and select the *Advanced* tab. Tick the checkboxes for OK and/or NOK traces as needed.