



Next Generation Control - Machine Data Collection

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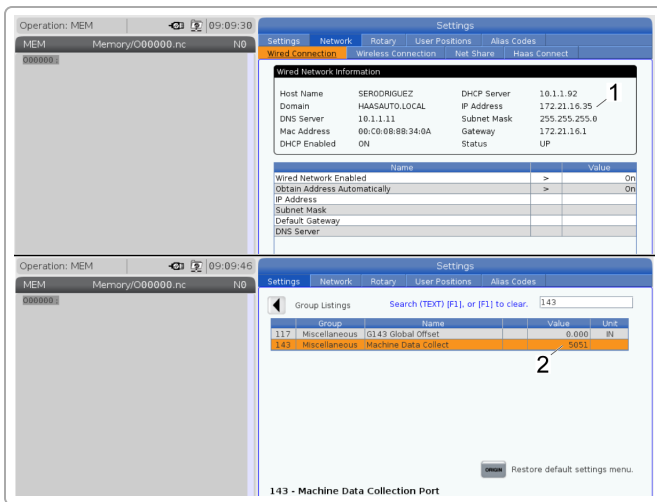
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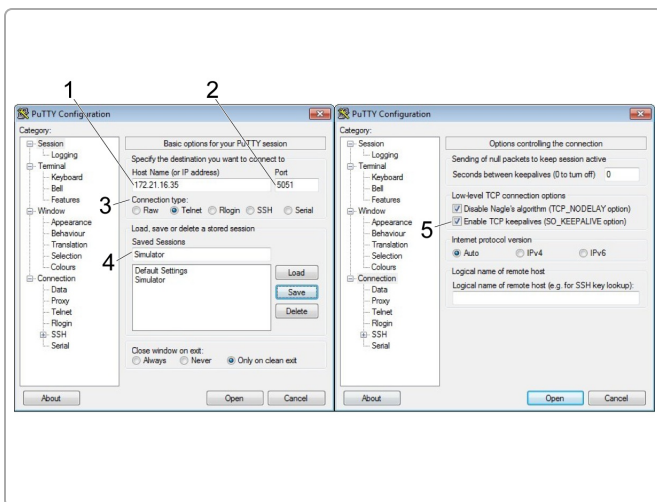
Machine Data Collection

Machine Data Collection (MDC) lets you use Q and E commands to extract data from the control through the Ethernet port or the Wireless Networking option. Setting **143** both enables the feature and specifies the data port that the control uses to communicate. MDC is a software-based feature that requires an additional computer to request, interpret, and store data from the control. The remote computer can also set certain Macro variables.

The Haas control uses a TCP server to communicate over networks. On the remote computer, you can use any terminal program that supports TCP; this example uses **PuTTY**. Up to (2) simultaneous connections are allowed. Output requested by one connection is sent to all connections.



Find the machine's IP address [1] in the Network Settings and choose a number to type in Setting **143**. This example uses **5051**.



Download and open **PuTTY**.

In the basic options section for **PuTTY**, type the machine's IP address [1] and the port number [2] in Setting **143**. Setting **143** must have a nonzero value to use MDC.

For connection type [3], choose **Raw** or **Telnet**. You can save the connection for future use.

Type the name [4] and select **Save**. To keep the connection open, select **Enable TCP keepalives** in the **Connection** options.

Select **Open** to start the connection.

```
172.21.16.35 - PuTTY
>?Q100
>?, ??? ????'?????Q100
>?Q100
>SERIAL NUMBER, 1234567
>?Q101
>SOFTWARE VERSION, 100.16.000.1031
>?Q102
>MODEL, CSMD-G2
>?Q104
>MODE, ZERO
>?Q200
>TOOL CHANGES, 35
>?Q201
>USING TOOL, 4
>?Q300
>P.O. TIME, 06282:17:13
>?Q301
>C.S. TIME, 00098:18:29
>?Q303
>LAST CYCLE, 00000:00:13
>?Q304
>PREV CYCLE, 00000:00:01
>?Q402
>M30 #1, 380
>?Q403
>M30 #2, 380
>?Q500
>PROGRAM, MDI, IDLE, PARTS, 380
>?Q600 5021
>MACRO, 0.0
>
```

Check the connection. Type **?Q100** in the PuTTY terminal window. If the connection is active, the machine control responds with SERIAL NUMBER, XXXXXX, where XXXXXX is the machine's actual serial number. For the initial connection, **?Q100** may have to be entered twice.

Refer to the next section for more Queries and Commands.

Data Collection Queries and Commands

The control responds to a **Q** command only when Setting **143** has a nonzero value.

MDC Queries

These commands are available:

Command	Definition	Example
Q100	Machine Serial Number	?Q100 SERIAL NUMBER, 1234567
Q101	Control Software Version	?Q101 SOFTWARE VERSION, 100.16.000.1031
Q102	Machine Model Number	?Q102 MODEL, CSMD-G2
Q104	Mode (LIST PROG, MDI, etc.)	?Q104 MODE, ZERO
Q200	Tool Changes (total)	?Q200 TOOL CHANGES, 35
Q201	Tool Number in use	?Q201 USING TOOL, 4
Q300	Power-on Time (total)	?Q300 P.O. TIME, 06282:17:13
Q301	Motion Time (total)	?Q301 C.S. TIME, 00098:18:29
Q303	Last Cycle Time	?Q303 LAST CYCLE, 00000:00:13
Q304	Previous Cycle Time	?Q304 PREV CYCLE, 00000:00:01
Q402	M30 Parts Counter #1 (resettable at control)	?Q402 M30 #1, 380
Q403	M30 Parts Counter #2 (resettable at control)	?Q403 M30 #2, 380
Q500	Three-in-one (PROGRAM, Oxxxxx, STATUS, PARTS, xxxxxx)	?Q500 PROGRAM, MDI, IDLE, PARTS, 380
Q600	Macro or system variable	?Q600 2051 MACRO, 0.0

You can request the contents of any macro or system variable with the **Q600** command; for example, **Q600 xxxx**. This shows the contents of macro variable **xxxx** on the remote computer.

Query Format

The correct query format is **?Q###**, where **###** is the query number, terminated with a new line.


Response Format

Responses from the control begin with **>** and end with **/r/n**. Successful queries return the name of the query, then the requested information, separated by commas. For example, a query of **?Q102** returns **MODEL, XXX**, where **XXX** is the machine model. The comma lets you treat the output as comma-separated variable (CSV) data.


An unrecognized command returns a question mark followed by the unrecognized command; for example, **?Q105** returns **?, ?Q105**.


E Commands (Write to Variable)

You can use an E command to write to macro variables **#1-33** and **#10000-#10999**.

 **Note:** Macro variables **#10550-#10580** are unavailable if the mill has a probing system. See the Operator's Manual for a list of available system variables.

For example, **Exxxx yyyyyy.yyyyyy** where **xxxx** is the macro variable and **yyyyyy.yyyyyy** is the new value.

 **Note:** When you write to a global variable, make sure that no other programs on the machine use that variable.

 **Caution:** Use extreme caution when you write to a system variable. Incorrect values for a system variable can cause damage to the machine.