

Experion PKS
Honeywell LCS620 Interface Reference

EPDOC-XX57-en-431A
February 2015

Release 431

Document	Release	Issue	Date
EPDOC-XX57-en-431A	431	0	February 2015

Disclaimer

This document contains Honeywell proprietary information. Information contained herein is to be used solely for the purpose submitted, and no part of this document or its contents shall be reproduced, published, or disclosed to a third party without the express permission of Honeywell International Sàrl.

While this information is presented in good faith and believed to be accurate, Honeywell disclaims the implied warranties of merchantability and fitness for a purpose and makes no express warranties except as may be stated in its written agreement with and for its customer.

In no event is Honeywell liable to anyone for any direct, special, or consequential damages. The information and specifications in this document are subject to change without notice.

Copyright 2015 - Honeywell International Sàrl

Contents

- Planning considerations for installing and configuring Honeywell LCS620 controllers 5**
 - Devices supported by the Honeywell LCS620 interface 6
 - Other documentation for Honeywell LCS620 7
 - Honeywell LCS620-specific terms 8
 - Architectures for Honeywell LCS620 9
 - Serial connections for Honeywell LCS620 9
 - Ethernet connections for Honeywell LCS620 10
 - Communication settings for Honeywell LCS620 11
 - Serial connection settings for Honeywell LCS620 11
 - Ethernet connection settings for Honeywell LCS620 13
 - TDC 3000 Data Hiway connection settings for Honeywell LCS620 13
- Honeywell LCS620 channel and controller reference 15**
 - Main properties for a Honeywell LCS620 channel 16
 - Port properties for a Honeywell LCS620 channel 18
 - Redundant port properties for a Honeywell LCS620 channel 20
 - Main properties for a Honeywell LCS620 controller 21
 - Optimizing Honeywell LCS620 scanning performance 22
 - Honeywell LCS620 scan packets 22
- Honeywell LCS620 points reference 23**
 - Defining a Honeywell LCS620 address for a point parameter 24
 - Address syntax for Honeywell LCS620 controllers 24
- Troubleshooting Honeywell LCS620 issues 27**
 - Testing Honeywell LCS620 communications with the server 28
 - Troubleshooting Honeywell LCS620 communication errors 29
- Notices 31**
 - Documentation feedback 32
 - How to report a security vulnerability 33
 - Support 34
 - Training classes 35

Planning considerations for installing and configuring Honeywell LCS620 controllers

This reference provides the information you need to set up, configure, and test LCS620 controller communications with the server.

Revision history

Revision	Date	Description
A	February 2015	Initial release of document.

How to use this guide

These are the steps for connecting and configuring a Honeywell LCS620 controller. Complete each step before commencing the next.

Step	Go to
Connect the LCS620 to the server	Architectures for Honeywell LCS620
Set the LCS620 communication parameters	Communication settings for Honeywell LCS620
Use Quick Builder to define channels	<ul style="list-style-type: none">Honeywell LCS620 channel and controller reference"Build channels" topic in the <i>Quick Builder User's Guide</i>
Use Quick Builder to define controllers	<ul style="list-style-type: none">Honeywell LCS620 channel and controller reference"Build controllers" topic in the <i>Quick Builder User's Guide</i>
Download channel and controller definitions to the server	"Downloading items" topic in the <i>Quick Builder User's Guide</i>
Test communications	Testing Honeywell LCS620 communications with the server
Use Quick Builder to define points	Defining a Honeywell LCS620 address for a point parameter

Related topics

"Devices supported by the Honeywell LCS620 interface" on page 6

"Other documentation for Honeywell LCS620" on page 7

"Honeywell LCS620-specific terms" on page 8

"Architectures for Honeywell LCS620" on page 9

"Communication settings for Honeywell LCS620" on page 11

"Testing Honeywell LCS620 communications with the server" on page 28

"Defining a Honeywell LCS620 address for a point parameter" on page 24

Devices supported by the Honeywell LCS620 interface

The server supports the following LCS620 models:

- 620-6
- 620-11
- 620-12
- 620-14
- 620-16
- 620-20 to 620-35
- 620-36

Other documentation for Honeywell LCS620

The following LCS620 documents are relevant for configuring the LCS620:

- *LCS620 documentation set*

The following Honeywell documents contain design and configuration information:

- *Software Installation User's Guide*
- *Server and Client Configuration Guide*

Honeywell LCS620-specific terms

CIM Communications Interface Module. Used to connect a controller to the server via a serial link.

EIM Ethernet Interface Module. Required to connect a controller to the server via an Ethernet link (LAN).

Architectures for Honeywell LCS620

You can connect the LCS620 to the server using either serial or LAN communications. The LCS620 supports redundant communication links.

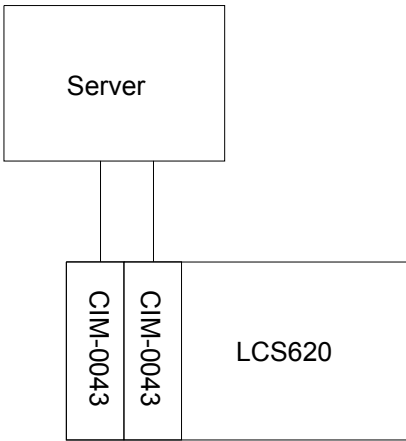
The server treats each serial or LAN link as a separate channel and each controller as a controller.

Serial connections for Honeywell LCS620

If you connect the LCS620 controller to the server with a serial connection, you can install a Communications Interface Module (CIM-0043) for each link. (The following figure shows a redundant link with two CIMs.)

Alternatively, if you have model 12, 16 or 36 CPMs you can use their communications port. The LCS Loader software is required to configure this port. For more information, see the LCS Documentation.

You can use either RS-232 (point-to-point) or RS-422 (multi-dropped) protocols.

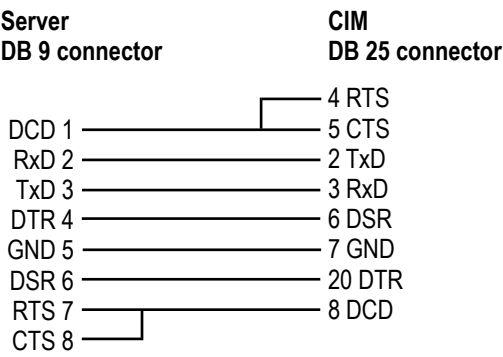


RS-232 connections

Use the following pinouts if the server has a 25-pin COM port.

Server DB 25 Connector	CIM DB 25 Connector
Shield 1	1 Shield
TxD 2	3 RxD
RxD 3	2 TxD
RTS 4	8 DCD
CTS 5	20 DTR
DSR 6	7 GND
GND 7	4 RTS
DCD 8	5 CTS
DTR 20	6 DSR

Use the following pinouts if the server has a 9-pin COM port.



Related topics

“Troubleshooting Honeywell LCS620 communication errors” on page 29

Ethernet connections for Honeywell LCS620

If you connect the LCS620 controller to the server with an Ethernet connection, you must install an Ethernet Interface Module (EIM). (The following figure shows a redundant link with two EIMs.)

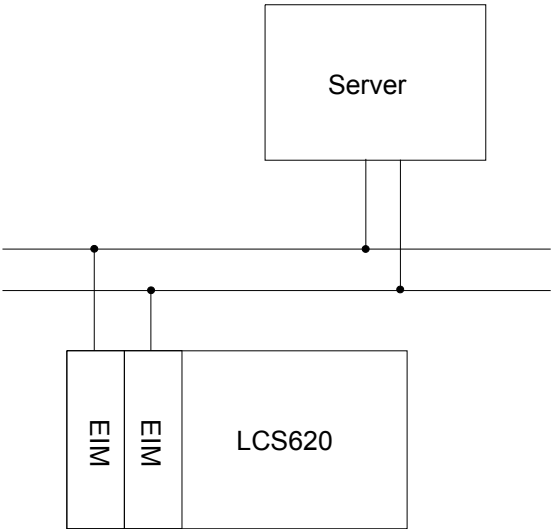


Figure 1: Redundant link with two EIMs

Communication settings for Honeywell LCS620

Before connecting the LCS620 to the server, configure the communications settings.



Attention

Record these settings because you will need them when using Quick Builder. See the topic titled "Port properties for a Honeywell LCS620 channel" for more information.

Related topics

"Port properties for a Honeywell LCS620 channel" on page 18

Serial connection settings for Honeywell LCS620

The DIP switch settings in the CIM-0043 determine the serial link communications characteristics.

Switch bank 1 (SW1)

SW1 controls the basic protocol settings: RS-232 or RS-422 (equivalent to RS-485).

Switch SW1	State	Switch function
1	Closed/On ¹	Resistor added for point-to-point connections with RS-422 interface
	Open/Off	Resistor removed for multi-drop connections with RS-422 interface
2	Closed/On	Configures RS-422 transmitter for multipoint operation
	Open/Off ¹	Configures RS-422 transmitter for point to point operation, and CIM for full duplex operation.
3	Closed/On ¹	Selects RS-232
	Open/Off	Selects RS-422
4		Not used

Switch bank 2 (SW2)

SW2 controls the CIM's node address, which must be unique on the channel. If the controller has two CIMs (for a redundant connection), set both CIMs to the same address, but they must have different internal CIM addresses.

The internal CIM address is set by switches 7 and 8 on SW3. (See the section below titled "Switch bank 3 (SW3)" for more information.)

If there is only one controller on the channel, set the node address to 1.

Protocol restrictions place the following limitations on the node address:

- Zero is a broadcast node address. If you set the address to 0, the CIM will stall during its start-up self-test and cause the fault indicator to flash.
- Hardware limitations may hold the network population to less than 255 controllers.

The following table shows the address weighting of each SW2 switch, where the switch is used as part of the address if it is **Off** (open).

Switch SW2	Address weighting
1	1

¹ Recommended setting

Switch SW2	Address weighting
2	2
3	4
4	8
5	16
6	32
7	64
8	128

The following table shows the settings for an address of 12.

Switch							
1	2	3	4	5	6	7	8
Closed	Closed	Open	Open	Closed	Closed	Closed	Closed

Switch bank 3 (SW3)

SW3, switches 1, 2, 3, and 4 control parity and stop bits.

Switch SW3	State	Switch function
1	Closed/On	CIM rejects Modify Coil Status, Modify I/O Register or Register commands
	Open/Off ²	CIM accepts Modify Coil Status, Modify I/O Register or Register commands
2	Closed/On ²	Parity Bit enabled
	Open/Off	Parity bit disabled
3	Closed/On	Odd parity
	Open/Off ²	Even parity
4	Closed/On ²	Selects one stop bit
	Open/Off	Selects two stop bits

SW3, switches 5 and 6 control the baud.

Switch and state SW3		
5	6	Baud
Closed/On ³	Closed/On ³	19,200
Open/Off	Closed/On	9600
Closed/On	Open/Off	4800
Open/Off	Open/Off	1200

SW3, switches 7 and 8 control the CIMs address within the LCS620.

² Recommended setting.

³ Recommended setting.

Switch and state SW3		Switch function
7	8	CIM address
Open/Off	Open/Off	3 ⁴
Open/Off	Closed/On	2 ⁴
Closed/On	Open/Off	1
Closed/On ⁵	Closed/On ⁵	0

Related topics

“Main properties for a Honeywell LCS620 controller” on page 21

“Port properties for a Honeywell LCS620 channel” on page 18

Ethernet connection settings for Honeywell LCS620

You need to download the configuration code to the EIM from the Series 9000 Configuration Tools. This loads the firmware into the EIM so that it can communicate.

You use the DIP switches in the EIM to set the IP address, which must be unique for all devices on the LAN. IP addresses are in Internet Class A, B, or C format. The class is determined by your network requirements.



Attention

The EIM does not support IP routing.

You must define the EIM's IP address in the TCP/IP host file on the server, *C:\%windir%\system32\drivers\etc\hosts*, by adding the appropriate line. For example:

```
1cs620 200.0.0.50
```

In the case of a redundant communications link, where the controller has two EIMs, the alias of the first EIM should have an “a” suffix, and the alias of the second EIM should use the same alias, but with a “b” suffix, as shown in the following example:

```
1cs620a 200.0.0.50
1cs620b 200.1.1.51
```

If you define two logical controllers that address the same physical controller, you need to define the alias for each logical controller, for example:

```
logicalcont1 logicalcont2 200.0.0.50
```

TDC 3000 Data Hiway connection settings for Honeywell LCS620

If you connect the LCS620 to a TDC 3000 Data Hiway using a Hiway Interface Module (HIM), you need to configure the interface as a TDC 3000 DHP.

⁴ Applies only to 620-25 and 620-35.

⁵ Recommended setting.

Honeywell LCS620 channel and controller reference

This section describes the configuration and addressing information specific to Honeywell LCS620 channels and controllers.

In addition to the information contained in this reference, and for help to build channels and controllers, see the section titled "Building controllers or channels" in the *Quick Builder User's Guide*.

Related topics

- "Main properties for a Honeywell LCS620 channel" on page 16
- "Port properties for a Honeywell LCS620 channel" on page 18
- "Redundant port properties for a Honeywell LCS620 channel" on page 20
- "Main properties for a Honeywell LCS620 controller" on page 21
- "Optimizing Honeywell LCS620 scanning performance" on page 22

Main properties for a Honeywell LCS620 channel

The Main tab defines the basic properties for a Honeywell LCS620 channel.

For information about how to create a channel, see the topic titled "Building controllers and channels" in the *Quick Builder User's Guide*.

Property	Description
Name	The unique name of the channel. A maximum of <i>10</i> alphanumeric characters (no spaces or double quotes). Note: In Station displays, underscore characters (<i>_</i>) appear as spaces.
Description	(Optional) A description of the channel. A maximum of <i>132</i> alphanumeric characters, including spaces.
Marginal Alarm Limit	<p>The communications alarm marginal limit at which the channel is declared to be marginal. When this limit is reached, a high priority alarm is generated. To change the priority of the alarm system wide, see the topic titled "Configuring system alarm priorities" in the <i>Server and Client Configuration Guide</i>. To change the priority of the alarm for one channel, see the topic titled "About configuring custom system alarm priorities for an individual channel or controller" in the <i>Server and Client Configuration Guide</i>.</p> <p>A channel barometer monitors the total number of requests and the number of times the controller did not respond or response was incorrect. The barometer increments by two or more, depending on the error, and decrements for each good call.</p> <p>To calculate an acceptable marginal alarm limit, use the formula: Square root of the number of controllers on the channel \times Marginal Alarm Limit defined on those controllers (Normally, you specify the same value for all controllers on a channel).</p> <p>For example, if there are 9 controllers on the channel and their Marginal Alarm Limit is set to 25, the value would be 3 (which is the square root of 9) \times 25 = 75.</p>
Fail Alarm Limit	<p>The communications alarm fail limit at which the channel is declared to have failed. When this barometer limit is reached, an urgent alarm is generated. To change the priority of the alarm system wide, see the topic titled "Configuring system alarm priorities" in the <i>Server and Client Configuration Guide</i>. To change the priority of the alarm for one channel, see the topic titled "About configuring custom system alarm priorities for an individual channel or controller" in the <i>Server and Client Configuration Guide</i>.</p> <p>Set this to double the value specified for the channel Marginal Alarm Limit.</p>
Write Delay	<p>If the channel is on a serial port, the length of time (in milliseconds) that the server waits before writing to any controller on the channel. The default value is <i>10</i> milliseconds.</p> <p>A write delay is usually specified only if:</p> <ul style="list-style-type: none"> The server communicates to the controller over a half-duplex radio link and the radio system requires time to key in each direction before the server or controller can send data. The radio system implements <i>RTS/CTS</i> handshaking. <p>If there is a communications problem and the controller does not respond to writes from the server, try changing this setting to <i>11</i> milliseconds or more. This should allow the controller enough time to become ready to receive data from the server.</p>
Connect Timeout	<p>The length of time that the server attempts to connect to the controller. The server will stop trying to connect to the controller once the timeout period passes. The default value <i>10</i> seconds.</p> <p>Use the default value unless the communications line has a high error rate, or unless you are using modems.</p>
Read Timeout	<p>The length of time that the server will wait for a reply from the controller. The server will stop waiting once the timeout period passes. The default value is <i>2</i> seconds.</p> <p>Use the default value unless the communications line has a high error rate, or unless you are using modems.</p>

Property	Description
Item Type	The type of channel specified when this item was created.
Last Modified	The date and time the channel properties were modified.
Last Downloaded	The date and time the channel was last downloaded to the server.
Item Number	<p>The unique item number currently assigned to this channel, in the format <i>CHNCC</i>, where <i>cc</i> is the channel number.</p> <p>You can change the item number if you need to match your current server database configuration. The number must be between <i>01</i> and the maximum number of channels allowed for your system. For more information about setting the maximum value, see the topic titled "Adjusting sizing of non-licensed items" in the <i>Supplementary Installation Tasks Guide</i>.</p>

Port properties for a Honeywell LCS620 channel

The Port tab defines the communication-related properties for a channel. The **Port Type** for LCS620 controllers can be:

- *serial*. Select this if you want to connect the controller to the server via a serial link. See the section below titled "Serial port properties" section below for more information.
- *TerminalServer*. Select this if you want to connect the controller to the server via a LAN using a serial interface. See the section below titled "TerminalServer port properties" for more information.
- *LANVendor*. Select this if you want to connect the controller to the server via a LAN using an Ethernet interface. See the section below titled "LANVendor port properties" for more information.



Attention

Set the port properties to the same values as those specified when configuring the controller.

Serial port properties

Enter the setting you set in switches on switch bank 3 (SW3) when you configured the controller. See the section titled "Switch bank 3 (SW3)" in the topic titled "Serial connection settings for Honeywell LCS620" for more information.

Property	Description
Serial Port Name	The device name of the serial port.
Baud	The number of data bits per second. The default is <i>9600</i> .
Number of Data Bits	The number of data bits used for transmission. The default is <i>8</i> .
Stop Bits	The number of stop bits used for transmission The default is <i>1</i> .
Parity	Defines parity verification of each character and must match configuration on the end device. The default is <i>NONE</i> .
Checksum	The type of checksum error detection used for the port. Select the value that matches the setting on the communication device. Choose <i>CRC16_1</i> .
XON/XOFF	Used only when the controller is connected via a modem. The type of XON/XOFF software flow control used to stop a receiver from being overrun with messages from a sender. The types are: <ul style="list-style-type: none"> • <i>Input</i> (use XON/XOFF to control the flow of data on the receive line) • <i>none</i> (default) • <i>output</i> (use XON/XOFF to control the flow of data on the transmit line)

Property	Description
RS-232	<p>These options are applicable to the RS-232 link:</p> <ul style="list-style-type: none"> • Enable RTS/CTS flow control. Select this if you want to use RTS/CTS for flow control to stop a receiver from being overrun with messages from a sender. • Detect DCD. Select this if the Data Carrier Detect communication status line of the COM port requires monitoring (usually when using modem or microwave linking). When selected, the communications fails if the desired COM status line is not high—for example, on a dial-up link connection for a modem. • Detect DSR. Select this if the Data Set Ready communication status line of the COM port requires monitoring (usually when using modem or microwave linking). When selected, the communications fails if the desired COM status is not achieved.
RS-485	<p>These options are applicable to the RS-485 link:</p> <ul style="list-style-type: none"> • Enable Stallion RS-485 Half Duplex. Select if RS-232 to RS-485 is done using a Stallion EasyConnection adapter. • Echo (Required for Stallion RS-485 ports). Select so that the server expects the messages it sends to the port on the transmit line to be echoed back on the receive line. Select for a Stallion EasyConnection adapter or a Black Box converter.

TerminalServer port properties

Property	Description
Terminal Server TCP Host Name Terminal Server TCP Port No	<p>The name and port number of terminal server to which the channel is connected.</p> <p>You can specify either a TCP host name or an IP address, but it must match the TCP host name used when you installed and internally configured the terminal server.</p>
Idle Timeout	<p>The time, in seconds, the channel waits for a successful connection to the server before closing the connection.</p> <p>A value of 0 indicates that the connection is never closed.</p>
Checksum	<p>The type of checksum error detection used for the port. Select the value that matches the setting on the communication device.</p> <ul style="list-style-type: none"> • <i>CRC16_0</i> or <i>CRC16_1</i> (if Cyclic Redundancy Check (CRC) is set) • <i>ONESCOMP</i> or <i>TWOSCOMP</i> (if Longitudinal Redundancy Check (LRC) is set) • <i>XOR</i> (If exclusive or is set)

LANVendor port properties

Property	Description
Port Name	Leave blank.

Related topics

“Communication settings for Honeywell LCS620” on page 11

“Serial connection settings for Honeywell LCS620” on page 11

Redundant port properties for a Honeywell LCS620 channel

The Redundant Port tab defines the communication-related properties for a redundant channel. The redundant port parameter values are identical to the primary port values, except for **Port Name**.

Main properties for a Honeywell LCS620 controller

The **Main** tab defines the basic properties for a Honeywell LCS620 controller.

For information about how to create a controller, see the topic titled "Building controllers and channels" in the *Quick Builder User's Guide*.

Property	Description
Name	The unique name of the controller. A maximum of <i>10</i> alphanumeric characters (no spaces or double quotes). Note: In Station displays, underscore characters (<i>_</i>) appear as spaces. For LAN-connected controllers, the name is used to look up the IP address in the TCP/IP database if you do not specify an IP Address property.
Description	(Optional) A description of the controller. A maximum of <i>132</i> alphanumeric characters, including spaces.
Channel Name	The name of the channel on which the controller communicates with the server. (You must have already defined a channel for it to appear in this list.)
Marginal Alarm Limit	The communications alarm marginal limit at which the controller is declared to be marginal. When this limit is reached, a high priority alarm is generated. To change the priority of the alarm system wide, see the topic titled "Configuring system alarm priorities" in the <i>Server and Client Configuration Guide</i> . To change the priority of the alarm for one controller, see the topic titled "About configuring custom system alarm priorities for an individual channel or controller" in the <i>Server and Client Configuration Guide</i> . A controller barometer monitors the total number of requests and the number of times the controller did not respond or response was incorrect. The barometer increments by two or more, depending on the error, and decrements for each good call. The default value is <i>25</i> .
Fail Alarm Limit	The communications alarm fail limit at which the controller is declared to have failed. When this barometer limit is reached, an urgent alarm is generated. To change the priority of the alarm system wide, see the topic titled "Configuring system alarm priorities" in the <i>Server and Client Configuration Guide</i> . To change the priority of the alarm for one controller, see the topic titled "About configuring custom system alarm priorities for an individual channel or controller" in the <i>Server and Client Configuration Guide</i> . Set this to double the value specified for the controller Marginal Alarm Limit. The default is <i>50</i> .
Node Address	Applicable only if the controller uses a serial connection. The node address, as set up in the CIM. See the topic titled "Serial connection settings for Honeywell LCS620" for more information.
Item Type	The type of controller specified when this item was created.
Last Modified	The date and time the controller properties were modified.
Last Downloaded	The date and time the controller was last downloaded to the server.
Item Number	The unique item number currently assigned to this controller, in the format <i>RTUnnnnn</i> . You can change the item number if you need to match your current server database configuration. The number must be between <i>01</i> and the maximum number of controllers allowed for your system. For more information about setting the maximum value, see the topic titled "Adjusting sizing of non-licensed items" in the <i>Supplementary Installation Tasks Guide</i> .

Related topics

"Serial connection settings for Honeywell LCS620" on page 11

Optimizing Honeywell LCS620 scanning performance

Minimize the number of scan packets—and the burden on the server—by using a small number of available scan periods for all your point definitions.

Example scan periods:

- 5 seconds for fast changing, important parameters
- 60 seconds for 1 minute PV history, parameters that change every few minutes
- 300 seconds for slow changing parameters

You verify your scanning strategy by using the List Scan utility, **lisscn**, to list the scan packets you have built. See the *Server and Client Configuration Guide* for usage of **lisscn**.

Honeywell LCS620 scan packets

An LCS620 scan packet can consist of up to 122 16-bit words.

It can be located anywhere along the full address range of the controller.

To be in a scan packet, within the block, points must reside in the one controller and have the same scan period. In addition they must be addressed within the 122-word range that defines the block.

The scan packets can consist of up to 1,952 digital addresses (both real and internal) and 122 registers. Registers can contain status points, accumulator points, and analog points.

Two types of scan packet are built for an LCS620 interface:

- **Hardware diagnostic scan.** One scan per controller every 60 seconds is initiated automatically by the server to verify communications integrity with the controller. One hardware diagnostic scan is automatically created per scan packet.
- **Periodic data acquisition scan.** On demand, the server acquires a value from a controller and processes the value as a point parameter.

For each source address scanned, a scan period can be specified. The period specified depends on the nature of the parameter. A fast changing or critical parameter uses a fast rate; an infrequent or non-critical parameter (for example, SP) should use a slower rate.

Honeywell LCS620 points reference

This section describes how to configure points for a Honeywell LCS620 controller using Quick Builder.

In addition to the information contained in this reference, and for help to build points, see the section titled "Building and configuring points" in the *Quick Builder User's Guide*.

Related topics


"Defining a Honeywell LCS620 address for a point parameter" on page 24

Defining a Honeywell LCS620 address for a point parameter

For **PV Source Address**, **Source Address**, and **Destination Address** the format for an LCS620 controller address is:

ControllerName Address

Part	Description
<i>ControllerName</i>	The name of the LCS620 controller.
<i>Address</i>	The address in the controller where the value is stored. See the topic titled "Defining a Honeywell LCS620 address for a point parameter" for more information.

If you would like help with the address, you can use the Address Builder. To display the Address Builder, click  next to **Address**.

Related topics

“Planning considerations for installing and configuring Honeywell LCS620 controllers” on page 5

“Testing Honeywell LCS620 communications with the server” on page 28

Address syntax for Honeywell LCS620 controllers

The format for the address is:

Address [*DataFormat*|*BitNumber*]

Part	Description
<i>Address</i>	The address of the point parameter. See the section below titled "Point parameter source/destination address ranges." Note that LCS620 controllers have address restrictions that require relay ladder logic to facilitate access to parameters. See the section below titled "Address restrictions."
<i>DataFormat</i>	The data format acronym or starting bit number, depending on how you want the value to be read: <ul style="list-style-type: none"> • Data format for scaling (analog points only). See the section below titled "Data format for scaling." • Data format for reading floating point values. See the section below titled "Data format for reading floating point values." • Data format for reading raw values without scaling. See the section below titled "Data format for reading raw values without scaling."
<i>BitNumber</i>	The starting bit number for the point parameter that references a register in the PLC. The valid range is 0 (default) to 15, where 0 is the right-most bit in the register. The number of bits read is implied by the parameter type: analog parameters read up to 16 bits, status parameters read 1, 2, or 3 consecutive bits.

Example

Analog points

PV source: 5000

SP source: 5002 U9999

Status points

PV source: 2000

OP source: 6000 7

Point parameter source/destination address ranges

The address range varies according to the table type.



Attention

- Some models of LCS620 have smaller address ranges than those listed. Consult the LCS620 documentation for the precise address range of your particular model.

Table type	Address range	Point parameter		
		Status	Analog	Accumulator
Real DI/DO	0–2047	PV, OP, MD	MD	
Internal DI/DO	2048–4095	PV, OP, MD	MD	
Register	4096–8191	PV, OP, MD	PV, OP, SP, MD, A1, A2, A3, A4	PV

Address restrictions

- Real analog Input/Output (0-2047) is not directly addressable.
Use relay ladder logic to move the analog value to and from a register.
Analog input cards are 12 bit; use data format U4095.
- System status information, including redundancy status, is not directly addressable.
Use relay ladder logic to move this to internal I/O or registers for access.
LCS620 memory maps vary according to the model. See the LCS620 documentation for details.

Data format for scaling

Data formats for scaling are valid for analog points only. The default format is **U4095**.

Data Format	Counts
U4095	0–4095
U9999	0–9999
U999	0–999

Data format for reading floating point values

Select format *IEEEFP* to read two consecutive registers as a single precision floating point number.



Attention

- IEEEFP numbers use two data addresses, **address** and **address-1**. Do not specify **address-1** (the lower address) as the point parameter address.
- When configuring controller data tables, do not assign overlapping data addresses if floating point values are used and do not set an IEEEFP address to any value less than 4097.

Data format for reading raw values without scaling

Enter 0 to read all 16 bits in the register without scaling. To read less than 16 bits without scaling, enter the starting bit number (1 to 15).

Troubleshooting Honeywell LCS620 issues

This section describes troubleshooting tasks for Honeywell LCS620 that you can perform either on the server or from any Station.

Related topics

“Testing Honeywell LCS620 communications with the server” on page 28

“Troubleshooting Honeywell LCS620 communication errors” on page 29

Testing Honeywell LCS620 communications with the server

You use the Honeywell LCS620 test utility, **ipctst**, to test communications between the server and the LCS620 controller after you have downloaded channel and controller definitions to the server database.

Prerequisites

- Set up the controller.
- Connect all cables.
- Define the controller and channel in Quick Builder.
- Download the Quick Builder definitions to the server, without errors.
- Ensure the channel is out of service.

To run the ipctst utility

- 1 Open a Command Prompt window.
- 2 Type **ipctst** and then press Enter.
- 3 Follow the directions as prompted.
The active LED on the CIM, EIM, or ELPM will flash during communications.
If any errors are encountered, review the channel and controller definitions in Quick Builder.
- 4 To quit, type **q** and press Enter.

To display help topics for the ipctst utility

- 1 Open a Command Prompt window.
- 2 Type **ipctst** and then press Enter.
- 3 Type **?** and then press Enter.

Results

After you verify that the server is communicating with the LCS620 controllers you can configure points. See the topic titled "Defining a Honeywell LCS620 address for a point parameter."

Related topics

"Planning considerations for installing and configuring Honeywell LCS620 controllers" on page 5

"Defining a Honeywell LCS620 address for a point parameter" on page 24

Troubleshooting Honeywell LCS620 communication errors

Error	Description
<i>0106 (device timeout)</i>	<p>No response was received from the controller.</p> <ul style="list-style-type: none"> • If you have a serial connection (with a CIM), verify that the communication parameters defined in the project correspond with those set on the CIM and that the cable is correct. • If you have a LAN connection (with an EIM), verify that the Ethernet address in the TCP host file corresponds with those set on the EIM. Try using the TCP <i>Ping</i> command to verify the TCP connection to the EIM.
<i>0110 (timeout on connect)</i>	<p>A physical connection to the LCS was not achieved within the configured period.</p> <p>A possible cause of this error with the CIM (serial interface) is that it may be in Fault mode. The front of the CIM has a red LED to indicate Fault status. If the Fault condition recurs on each attempt to enable the channel, the problem is most likely due to incorrect pinouts. For the correct pinouts, see the section titled "RS-232 connections" in the topic titled "Serial connections for Honeywell LCS620."</p>
<i>8425 (illegal PLC Address)</i>	<p>Ensure that the point parameter address lies within the correct range.</p>
<i>8426 (illegal PLC format)</i>	<p>Verify that the data format is a valid format for the address.</p>

Related topics

“Serial connections for Honeywell LCS620” on page 9

Notices

Trademarks

Experion®, PlantScape®, SafeBrowse®, TotalPlant®, and TDC 3000® are registered trademarks of Honeywell International, Inc.

OneWireless™ is a trademark of Honeywell International, Inc.

Other trademarks

Microsoft and SQL Server are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Trademarks that appear in this document are used only to the benefit of the trademark owner, with no intention of trademark infringement.

Third-party licenses

This product may contain or be derived from materials, including software, of third parties. The third party materials may be subject to licenses, notices, restrictions and obligations imposed by the licensor. The licenses, notices, restrictions and obligations, if any, may be found in the materials accompanying the product, in the documents or files accompanying such third party materials, in a file named third_party_licenses on the media containing the product, or at <http://www.honeywell.com/ps/thirdpartylicenses>.

Documentation feedback

You can find the most up-to-date documents on the Honeywell Process Solutions support website at:

<http://www.honeywellprocess.com/support>

If you have comments about Honeywell Process Solutions documentation, send your feedback to:

hpsdocs@honeywell.com

Use this email address to provide feedback, or to report errors and omissions in the documentation. For immediate help with a technical problem, contact your local Honeywell Process Solutions Customer Contact Center (CCC) or Honeywell Technical Assistance Center (TAC) listed in the “Support and other contacts” section of this document.

How to report a security vulnerability

For the purpose of submission, a security vulnerability is defined as a software defect or weakness that can be exploited to reduce the operational or security capabilities of the software.

Honeywell investigates all reports of security vulnerabilities affecting Honeywell products and services.

To report a potential security vulnerability against any Honeywell product, please follow the instructions at:

<https://honeywell.com/pages/vulnerabilityreporting.aspx>

Submit the requested information to Honeywell using one of the following methods:

- Send an email to security@honeywell.com.
- or
- Contact your local Honeywell Process Solutions Customer Contact Center (CCC) or Honeywell Technical Assistance Center (TAC) listed in the “Support and other contacts” section of this document.

Support

For support, contact your local Honeywell Process Solutions Customer Contact Center (CCC). To find your local CCC visit the website, <https://www.honeywellprocess.com/en-US/contact-us/customer-support-contacts/Pages/default.aspx>.

Training classes

Honeywell holds technical training classes on Experion PKS. These classes are taught by experts in the field of process control systems. For more information about these classes, contact your Honeywell representative, or see <http://www.automationcollege.com>.

Index

A

- address syntax 24
- addressing
 - Honeywell LCS620 controllers 24
- architectures
 - Honeywell LCS620 9, 10

B

- baud 18

C

- channels
 - Honeywell LCS620 channel 16
 - Honeywell LCS620 controllers 15
 - reference 15
- checksum 18
- commands and utilities
 - ipctst 28
 - lisscn 22
- communications
 - Honeywell LCS620 controllers 9, 11, 13, 28
 - testing
 - Honeywell LCS620 controllers 28
- configuring
 - Honeywell LCS620 controllers 5
- connect timeout 16
- controllers
 - Honeywell LCS620 controllers 5–11, 13, 15, 16, 18, 20–24, 27, 29
 - reference 15

D

- devices supported 6
- diagnostics
 - Honeywell LCS620 controllers 28
- documentation
 - Honeywell LCS620 7

E

- EIM 10, 13
- Ethernet connections 10, 13

F

- fail alarm limit 16, 21

H

- hardware diagnostic scan 22

- Honeywell LCS620 controllers
 - addressing 24
 - architectures 9, 10
 - baud 18
 - channels 15, 16, 18
 - redundant port properties 20
 - checksum 18
 - communication settings 9, 11, 13
 - configuring 5
 - connect timeout 16
 - connections 13
 - controllers 15, 21
 - devices supported 6
 - documentation 7
 - EIM 10, 13
 - error messages 29
 - Ethernet connections 10, 13
 - fail alarm limit 16, 21
 - getting started 5
 - hardware diagnostic scan 22
 - idle timeout 18
 - ipctst utility 28
 - marginal alarm limit 16, 21
 - node address 21
 - number of data bits 18
 - optimizing scanning performance 22
 - parity 18
 - periodic data acquisition scan 22
 - points 23
 - read timeout 16
 - RS-232 9, 11, 18
 - RS-422 11
 - RS-485 11, 18
 - scanning performance 22
 - serial port properties 18
 - stop bits 18
 - supported devices 6
 - TCP host name 18
 - TCP port number 18
 - TDC 3000 Data Hiway 13
 - terminal server properties 18
 - terms 8
 - testing communications 28
 - troubleshooting 27–29
 - write delay 16
 - XON/XOFF 18
- Honeywell TDC 3000 Data Hiway controllers
 - connections 13
 - LCS620 13

I

idle timeout 18
 ipctst utility 28

L

LANVendor port properties 18
 LCS620 controllers
 , See Honeywell LCS620 controllers
 lisscn utility 22

M

Main tab
 Honeywell LCS620 channel 16
 Honeywell LCS620 controller 21
 marginal alarm limit 16, 21

N

node address 21
 number of data bits 18

P

parity 18
 periodic data acquisition scan 22
 points
 Honeywell LCS620 controllers 23
 reference 23
 port properties
 configuring 18
 Honeywell LCS620 channel 18

R

read timeout 16
 redundancy
 Ethernet 10
 redundant port properties

Honeywell LCS620 channel 20
 RS-232
 connections 9, 11, 18
 RS-422
 connections 11
 RS-485
 connections 11, 18

S

scanning
 optimizing performance 22
 serial port properties 18
 stop bits 18
 supported devices 6

T

TCP host name 18
 TCP port number 18
 terminal servers
 port properties 18
 testing communications
 Honeywell LCS620 controllers 28
 troubleshooting
 Honeywell LCS620 controllers 27, 29

U

utilities
 ipctst 28
 lisscn 22

W

write delay 16

X

XON/XOFF 18