integriti
INTEGRATED SOLUTIONS

INTEGRITI AUTOMATION COMMUNICATIONS TASK

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Integriti Automation Communications Task

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Description of the Automation Communications Task:

The automation communications task can be used for review printing and acknowledgement as well as control and interrogation of the controller. This communications task works over a serial UART or Ethernet.

Control and interrogation options require licensing. There are two license options available.

No License

- Controllers without an automation license can stream review and acknowledge review events.

Automation Communications License (996022)

- Multiple instances of the Automation communications task can run on a controller.
- Control of entities.
- Query entity states and names.

Advanced Automation Communications License (996026)

- Only one instance of the Advanced Automation communications task can run on a controller.
- Virtual module auxiliaries can send their change of state (as it occurs) to the 3rd Party.
- The 3rd Party can send messages to the Controller to be logged as review.

Ticking the Transmit Aux options is what enabled the Advanced Automation communications task.

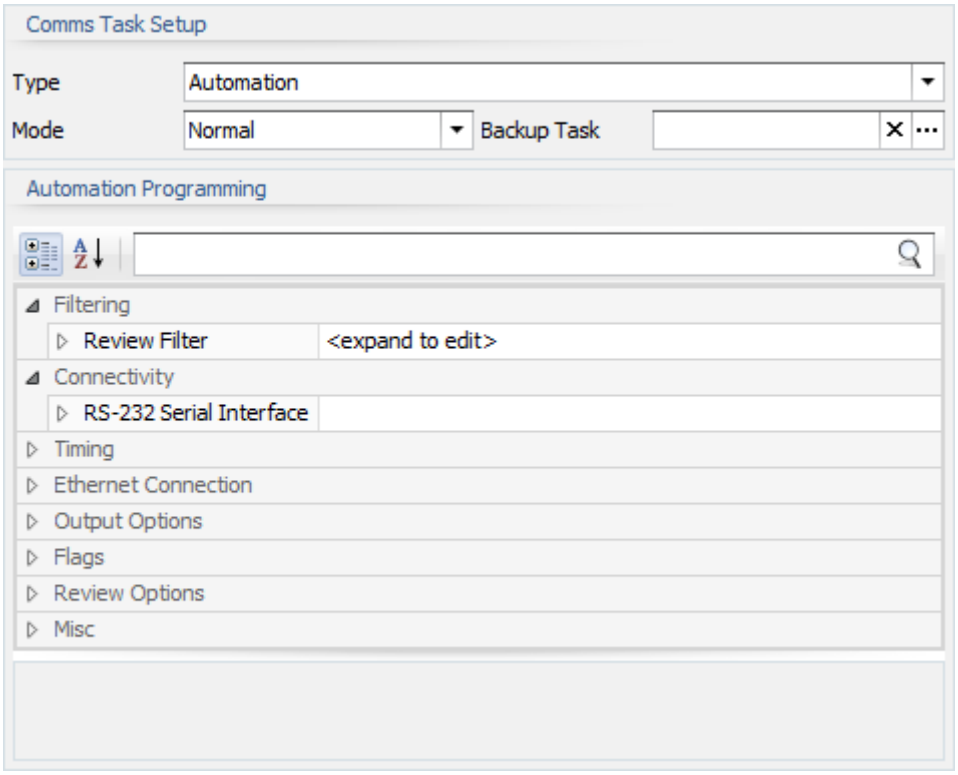


Figure 1

Review Filtering

The review filter is filtered using AND logic between Comms Task Groups, Level and Entity.
For example, if Aux is not selected in Comms Task groups, then selecting an auxiliary in any one of the available entity filter fields would have no effect.

Comms Task Groups allows the user to filter review based on the review category.
If this is not configured, all review is enabled.

Use Level to filter review what review messages are passed through. If left blank, the level is equivalent to 'Everyone', which is the most restrictive review level.

Entity fields 1-5 allow the user to filter based on one or many entities. Review not relevant to the entities specified will be filtered out.
Multiple entities can be supplied. For example if only show Door entries from a particular user is needed.
If all of the Entity fields are left blank, all review will be used for this communication task.

TX/RX Checksum

These options enable checksums on Automation packets. Packets received will be ignored if RX checksum is enabled and the checksum calculation fails.

The checksum is a simple modulo 256 addition of the characters in the packet between the left curly brace and the tilde. The checksum is appended to message with tilde, represented as 2 digit hex.

Examples:
{AX[C01:X01]=F~**6B**}
{AX[C01:X01]=N~**73**}

Review Stream

If this option enabled, the communications task will send review.

Note: Automation commands can also change this parameter during runtime

Ack Review

If this option is enabled, review messages must be acknowledged before the communications task will send the next event.

Note: Automation commands can also change this parameter during runtime.

All Review

This option starts the communications task with the review pointer at the oldest event, allowing the user to print all review.

Note: The Integriti controller is capable of storing between 10,000 and 100,000 events.

Online input

This option specifies the input that is put into alarm when the poll time expires, the TCP connection is lost or when the UniBus UART module is disconnected. The selected input must be configured to ignore physical.

Poll time

If an automation command has not been received in this time the online input is put into alarm. This timer is started after the first `{STart}` command.

The online input must also be configured to ignore physical its programming options

Pacing time

Review stream is not sent faster than the pacing time. This is useful to prevent sending messages faster than a device can handle.

The minimum value for this option is 10 milliseconds.

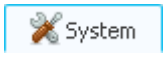
Repeat time

If review acknowledge is enabled, this specifies the interval at which the last unacknowledged review message is resent.

The minimum value for this option is 2 seconds.

Configuring the communications task:

To create the Automation communications task, follow the procedure below.

1. Click on the 

tab followed by 

.
2. Click 

to create a new communications task.
3. In the window that appears, enter a name for the communications task and enter any necessary notes in the notes field.
4. Under Comms Task Setup drop down the type list box and select Automation.
5. Configure the communications path
   - UART
     a. Expand out Connectivity, RS232 Serial Interface
     b. Drop down the Serial Channel list box and select the desired port.
     c. Select the baud rate, data bits, parity and stop bits for the interfacing hardware.
   - Ethernet
     a. Expand out Ethernet Connection
     b. Enter the server IP address in the Server IP Address field or enter its host name in the Server host name field.
        The host name takes priority over the IP address field. If a host name is specified, the IP address field is ignored.
     c. Change the TCP port number to a value between 1024 and 65535.
     d. Change the TCP Mode to Slave or Master.

None – Use the serial UART.
Slave mode – The 3rd party connects to the controller.
Master mode – The controller connects to the 3rd party.

e. Change the number of retries the controller should attempt to connect with the 3rd party.
f. If the connection timeout is greater than 0, the connection to the 3rd party must be established before this time expires.
g. If the connection attempt is greater than 0, the connection attempt to the 3rd party must be established before this time expires.

6. The output options affect the review data sent by the communications task.
   a. The Header Format field defines the first part of the review message.
   b. The Body Format field defines how the review message text will be presented.
   - If the body and header are both set to none, the output defaults to 'Full Text'.
7. Tick the various Flags options as required.
   a. Ticking Transfer Checksum will cause messages sent from the controller to have the 1 byte checksum appended to them. e.g. ~36
   b. If Receive Checksum is ticked, messages sent to the controller must have a valid checksum appended to the end of the message.
   c. If Send Review is ticked, review messages are automatically sent by the controller as they occur.
   d. If Acknowledge review is ticked, each review message must be acknowledged by the 3rd party.
   e. If All Review is ticked, the controller will send all review messages stored in memory when the connection is first established.
8. Tick the various Review Options as required.
   a. Ticking No DOS-Style Line Breaks removes the return (0x0D) and line feed (0x0A) from the end of each line sent from the controller.
   b. No Headers Or Braces in Review will remove the curly braces, header and checksum (if any).
9. The Online Input option allows you to specify an input that will represent the state of the communication task. The input will go in to alarm if no messages are received within the specified poll time.
   a. Review acknowledgements or sending the {STart} command will reset the poll time out timer.
10. Save the communications task by clicking the  button.
11. Start the communications task by clicking the 

button.

Review output options

Header Format

Tstamp
000C1893 16BAEE721E:5C
000C1894 16BAEE78F1:5C
DateTime
000C1898 Feb 4 2013 09:12:06.579 UTC+11:00
000C1899 Feb 4 2013 09:12:07.679 UTC+11:00
Sequence
000C189D 000792733
000C189E 000792734
LCD Sequence
000C18A2 0000792738
000C18A3 0000792739
LCD DateTime
000C18A7 Feb04 09:13:53.4
000C18A8 Feb04 09:13:53.8
Sequence Date Time
000C18AC 0000792748 Feb 4 2013 09:26:41.030 UTC+11:00
000C18AD 0000792749 Feb 4 2013 09:26:41.488 UTC+11:00

Body Format

Raw
Raw 76180C0000000000 16BADBAC7F5C0000 0400000090000106 0100000103010100 0301010006000000
Raw 77180C0000000000 16BADBB2015C0000 0400000090000106 0100000103010100 0301010008000000
Full Text
Installer Pin Logon at C3K-LcdTerm: 01
Installer Logoff at C3K-LcdTerm: 01
LCD Full Text
Installer Pin LoC3K-LcdTerm: 01
Installer LogoffC3K-LcdTerm: 01
LCD AbbrevText
Installer Pin Logon at C3K-LcdTerm: 01
Installer Logoff at C3K-LcdTerm: 01

Commands

All commands are ignored until {STart} packet is received.
All commands are case sensitive.

General Automation CT commands

If the review option is enabled in the communication task, the controller will send review. Automation commands can change this behaviour after the automation task has started {STart}.

Command	Description
{STart}	Starts automation
{RS=A}	Enable review stream acknowledgement
{RS=L}	Disable review stream acknowledgement
{RS=F}	Stop review stream
{RP=E}	Move the review pointer to the end
{RP=S}	Move the review pointer to the start

Heartbeats

To test and maintain connectivity heartbeats may be used. There are two heartbeat commands:

Command	Description
{HB=012}	Sets the poll time to 12 seconds.
{HB}	Send heartbeat

In response to the **{HB}** command, the controller will reply with the current poll time setting in seconds.
e.g.

{HB=123}

Set state

The following commands will be echoed back if successful.

For inputs, the input must be configured to ignore physical for automation commands to function.

Auxiliary & Door timers are specified in seconds and range from 0 to 65535.

Command	Description
{AX[C01:X10]=F}	Aux off
{AX[C01:X01]=N}	Aux on
{AX[C01:X01]=F005}	Aux timed off (seconds)
{AX[C01:X01]=N010}	Aux timed on (seconds)
{IN[C01:Z01]=AA}	Assert alarm
{IN[C01:Z01]=DT}	Deassert tamper
{IN[C01:Z01]=AIK}	Assert isolate
{IN[C01:Z01]=DI}	Deassert isolate + sticky
{DR[001]=L}	Lock door
{DR[001]=U}	Unlock door
{DR[001]=U32}	Timed unlock door (seconds)
{NA[001]=R}	Run named action
{AR[001]=N}	Area on
{AR[001]=F}	Area off
{AR[001]=NT}	Area 24hr on
{AR[001]=FT}	Area 24hr off
{AR[001]=N123}	Area on + pin code
{AR[001]=FT123}	Area 24h off + pin code

Get state

Command	Description
{AX[C01:X01]?}	Get aux state
{IN[C01:Z14]?}	Get input state
{AR[001]?}	Get area state
{DR[003]?}	Get door state
{GV[001]?}	Get gvar value

Example Replies:

{AX[C01:X01]=F}	Aux state reply (off)
{IN[C01:Z02]=A.....}	Input state reply (Alarm)
{DR[001]=L}	Door state reply (unlocked)
{DR[001]=LT}	Door state reply (timed unlock)
{AR[001]=N}	Area state reply (on)
{AR[001]=NT}	Area state reply (24hr on)

Get name

Command	Description
{AX[C01:X01]&}	Get aux name
{IN[C01:Z01]&}	Get zone name
{AR[001]&}	Get area name
{DR[001]&}	Get door name
{GV[001]&}	Get gvar name
{NA[001]&}	Get paction name

Example Reply:

{AX[C01:X01]&Aux 1}	Aux name reply ‘Aux 1’

Review Stream

Prefixed with review id, 8 digits hexadecimal

```
{RV=0004000A Aux 1 Off by Door 1 (Door Logic)}
{RV=0004000B Door 1 Unlocked by Printer CT 02 (System)}
{RV=0004000C Aux 1 On by Door 1 (Door Logic)}
{RV=0004000D Area 1 On by Printer CT 02 (System)}
{RV=0004000E A001 Exit Timer started for 0 hr 01 min 00 s}
{RV=0004000F Area 1 Off by Printer CT 02 (System)}
```

If review acknowledge is specified, each event must be acknowledged before the CT moves onto the next review item.

Example Ack:

```
{RA=0004000A}
```

Error codes

Error code	Description
{!01}	Error performing action
{!02}	Error with syntax
{!03}	Illegal entity
{!04}	Permission denied
{!05}	Checksum error
{!06}	Review acknowledge error
{!07}	Not licensed
{!08}	No analog calibration
{!FF}	Command not implemented

Input States

Use this table to look up the various input states.

Error code	Name
.....	All states sealed
A.....	Alarm
.**M**.....	Sensor Mask
..**O**.....	Sensor Orientation
...**F**.....	Sensor Fault
....**R**.....	Sensor Range
.....**L**.....	Tamper Low (e.g. short circuit)
......**H**.....	Tamper High (e.g. open circuit)
.......**T**.....	General Tamper (e.g. Cabinet tamper)
........**Z**.....	Zone self test fail
.........**B**.....	Low battery
..........**C**.....	Encryption fail on encrypted link
...........**P**....	Poll fail
.....	Input is in "soaking test"
..........**k**..	Input has failed a soak test
..........**K**.	Input is isolated
..........**I**	All states sealed

Example…

If the command '`{IN[C01:Z14]?}`' was sent to the controller.
The response might look something like this:
`{IN[C01:Z14]=.....HT.....I}`

C01:Z14 is in Tamper **H**igh, General **T**amper and is **I**solated.