

Elite-SX “Serial over IP” Protocol

Introduction

The ELITE SX has an on-board Ethernet port which is used for monitoring and accessing the internal programming web pages.

The Ethernet port can also be used as a two way communication between the ELITE SX control panel and other automation systems.

The ELITE SX “Serial over IP” uses TCP/IP data packets.

When the automation system is sending commands to the ELITE SX panel it addresses it to keypad # 32 so any commands that require special permissions would need to be set for keypad # 32.

The default DEVICE is 32, corresponding to keypad 32.

See the section labelled “DEVICE COMMAND” to find out how to change this keypad address.

The keypad address used for the ELITE SX “Serial over IP” is only used to enable options such as assigned areas, arming functions, output control, etc. It is acceptable to have a keypad connected to the ELITE SX panel with the same keypad ID number as the “Serial over IP” device number. The two devices would share common programming but there would be no adverse affects by the two devices sharing the same ID number.

To enable “Serial over IP” option 4 must be turned ON at address P201E4E. When an automation system is connecting to the panel it must direct the data to the panels IP address (can be found by holding down the 9 key on the keypad for 4 seconds) at the nominated port. The “Serial over IP” port is programmed at address P201E13E. The default port is 9000.

The “Serial over IP” TCP/IP connection can also require authentication if desired. Authentication is enabled by turning on option 3 at P25E18E. For authentication there is a user name (programmed at P25E19E) and a password (programmed at P25E20E). **The user name and password are case sensitive.** When a new connection is made the ELITE SX will ask for the “login:” which is the user name then it will ask for the “password:” which is the password. Once both have been entered correctly the ELITE SX panel will return “Welcome”.

There is also a connection timer that will close the connection if no data is received from the automation system during this time. The connection timer is programmed at address P25E21E. If the connection timer is set to a value of 30 seconds the ELITE SX will expect to see some data from the automation system within that time (to be safe the data should be sent every 20 seconds) and if no data is received after 30 seconds the connection will be closed and the ELITE SX will send “Bye.”.

Any signal can be sent to keep the connection alive, eg sending a CR (Carriage Return) is enough to keep the connection alive however a good signal to send is the “STATUS” command. If sent regularly it will stop the connection from closing plus provide the automation system with regular status updates which could be useful. If the connection is broken by some other means the automation system will have to establish a new connection.

The “Serial over IP” protocol messages and what they mean

The following list shows the signals sent out via the Ethernet port when “Serial over IP” is enabled and the event type that triggered the signal. To view the signals below use a terminal program such as PuTTY or HyperTerminal set to send and receive TCP/IP data with the program connecting to the panels IP address and “Serial over IP” port. The signals will appear on the screen as they occur.

ZONE INDICATIONS

<i>RS232 Message</i>	<i>Message Description</i>
Z0x	ZO = zone open, x = zone number
ZCx	ZC = zone closed, x = zone number
ZAx	ZA = zone alarm, x = zone number
ZRx	ZR = zone alarm restore, x = zone number
ZTx	ZT = zone tamper, x = zone number
ZTRx	ZTR = zone tamper restore, x = zone number
ZBYx	ZBY = zone bypassed, x = zone number
ZBYRx	ZBYR = zone bypass restore, x = zone number
ZBLx	ZBL = RF zone battery low, x = zone number
ZBRx	ZBR = RF zone battery OK, x = zone number
ZSAx	ZSA = RF zone supervise fail, x = zone number
ZSRx	ZSR = RF zone supervise OK, x = zone number
ZIAx	ZIA = zone sensor-watch (inactivity) alarm, x = zone number
ZIRx	ZIR = zone sensor-watch (inactivity) OK, x = zone number
ZEx	ZE = zone is in entry delay, x = zone number

Note: If multiple zones are activated simultaneously all zones will be shown singularly with a new line for each message.

ARM/DISARM INDICATION'S

<i>RS232 Message</i>	<i>Message Trigger</i>
Ax	A = Armed, x = area number
Sx	S = Stay Armed, x = area number
Dx	D = Disarmed, x = area number
EAx	EA = Exit delay active during Arming, x = area number
ESx	ES = Exit delay active during Stay Arming, x = area number

SYSTEM INDICATION'S

<i>RS232 Message</i>	<i>Message Trigger</i>
MF	MF = Mains fail on panel
MF ZXx	MF ZX = Mains fail on zone expander x
MF OXx	MF OX = Mains fail on output expander x
MF PXx	MF PX = Mains fail on prox expander x
MR	MR = Mains OK (restore) on panel
MR ZXx	MR ZX = Mains OK (restore) on zone expander x
MR OXx	MR OX = Mains OK (restore) on output expander x
MR PXx	MR PX = Mains OK (restore) on prox expander x

BF	BF = Battery fail on panel
BF ZXx	BF ZX = Battery fail on zone expander x
BF OXx	BF OX = Battery fail on output expander x
BF PXx	BF PX = Battery fail on prox expander x
BR	BR = Battery OK (restore) on panel
BR ZXx	BR ZX = Battery OK (restore) on zone expander x
BR OXx	BR OX = Battery OK (restore) on output expander x
BR PXx	BR PX = Battery OK (restore) on prox expander x
TA	TA = Panel Tamper Alarm
TA ZXx	TA ZX = Tamper Alarm on zone expander x
TA OXx	TA OX = Tamper Alarm on output expander x
TA PXx	TA PX = Tamper Alarm on prox expander x
TR	TR = Panel Tamper OK (restore)
TR ZXx	TR ZX = Tamper OK (restore) on zone expander x
TR OXx	TR OX = Tamper OK (restore) on output expander x
TR PXx	TR PX = Tamper OK (restore) on prox expander x
RO	RO = Ready On (all zones are sealed)
NR	NR = Not Ready (zones are unsealed)
LF	LF = Telephone Line Fail
LR	LR = Telephone Line OK (restore)
DF	DF = Dialler Fail
DR	DR = Dialler OK (restore)
FF	FF = Panel Fuse fail or Output fail
FF ZXx	FF ZX = Fuse fail on zone expander x
FF OXx	FF OX = Fuse fail on output expander x
FF PXx	FF PX = Fuse fail on prox expander x
FR	FR = Panel Fuse OK or Output OK (restore)
FR ZXx	FR ZX = Fuse OK on zone expander x
FR OXx	FR OX = Fuse OK on output expander x
FR PXx	FR PX = Fuse OK on prox expander x
PBFx	PBF = Pendant battery fail on pendant x
PBRx	PBR = Pendant battery OK (restore) on pendant x
RIF	RIF = Receiver fail
RIR	RIF = Receiver OK (restore)
CAL	CAL = Dialler is Active (making a call)
CLF	CLF = Dialler is Inactive (the call has finished)

OUTPUTS

<i>Serial Message</i>	<i>Message Trigger</i>
OOxx	OO = Output On, xx = Output number 1-32
ORxx	OR = Output Off (restore), xx = Output number 1-32

Note: If multiple outputs are activated simultaneously all outputs will be shown singularly with a new line for each message.

Commands sent to the ELITE-SX panel

The commands listed below can be sent to the control panel as TCP/IP messages from an automation system, or for local testing, via a terminal program. These commands enable external devices, such as automation systems, to initiate certain functions at the panel such as arm/disarm or turn outputs on or off.

The messages are generally not case sensitive except for the KEYS command.

When sending KEYS it must be capitals so it is probably good practise to always use capitals. Each command should be on a line of its' own, terminated by the <ENTER> key. The panel will reply with either OK or ERROR followed by its' interpretation of the command sent.

OK indicates that the command was valid, it doesn't guarantee that the command will succeed, eg, an arming command may receive an OK reply but due to a violated zone, the arming will not actually happen – it is required that the status messages be monitored to verify the command succeeded.

ERROR indicates that either the command was invalid, or could not be entered using the current settings. If this happens, check the program options associated with the DEVICE number assigned to the serial over IP port, eg the device may not be assigned an area that is attempting to be armed by a TCP/IP command or a user number doesn't have the correct privileges for the assigned area, etc.

Note: Certain commands, such as arming, will not be accepted (return ERROR) if the panel is in program mode.

MEM COMMAND

MEM x – NOTE: there must be a space between MEM and the x character. When this command is sent to the ELITE SX the panel sends the most recent x events, eg if the command “MEM 100” is sent to the panel it will return the most recent 100 events from its' memory. The panel will send the number of events specified by “x” up to a maximum of 10,000 events. After the last MEM event is shown, a line with “MEM END” will mark the end of the memory recall session. To cancel a long memory recall sequence, send the “CANCEL” command.

Example of a memory request

```
MEM Wed 15-JUL-15 12:54:02 Zone Bypassed Area 1 Zone 2
MEM Wed 15-JUL-15 12:31:04 Area Armed Area 1 User 4
MEM END
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MEM x y - NOTE: there must be a space between MEM and the x and the y characters. When this command is sent to the ELITE SX the panel sends x number of events starting at event y, eg if the command “MEM 100 200” is sent to the panel it will return the 100 events starting from event number 200 (eg it will show events 200 to 300). After the last MEM event is shown, a line with “MEM END” will mark the end of the memory recall session. To cancel a long memory recall sequence, send the “CANCEL” command.

VERSION COMMAND

VERSION ? = NOTE: there must be a space between VERSION and the ? character. Returns the serial command software revision eg, Version 0 "Elite-SX" (where 0 is the serial command processor revision level).

DEVICE COMMAND

DEVICE ? = NOTE: there must be a space between DEVICE and the ? character. Returns the current device ID (or keypad number) which is being used (the panel is set to Device 32 by default).

DEVICE x = NOTE: there must be a space between DEVICE and the x character. Changes the current device number to x, x = 1-32

BYPASS and UNBYPASS COMMANDS

BYPASS x = NOTE: there must be a space between BYPASS and the x character. Request to Bypass zone x, x = 1-64

UNBYPASS x = NOTE: there must be a space between UNBYPASS and the x character. Request to Unbypass zone x, x = 1-64

UNBYPASS = Request to Unbypass all currently bypassed zones (this will only unbypass zones linked to the areas assigned to the device number)

ARMING COMMANDS

ARMAWAY = This is the same as pressing the "Arm" key on the keypad

ARMAWAY x pin = NOTE: there must be a space between ARMAWAY, the x and the pin characters. Arm alarm using user x, x = user 1-2000 with pin number. Eg ARMAWAY 1 123 where 1=user 1 and 123 equals the user 1 pin code. If a user number is specified the PIN must be correct for the user number. If the user number is set to 0 the PIN can be any valid PIN code.

ARMSTAY = This is the same as pressing the "Stay" key on the keypad

DISARM x pin = NOTE: there must be a space between DISARM, the x and the pin characters. Disarm alarm using user x, x = user 1-2000 with pin number. Eg DISARM 1 123 where 1=user 1 and 123 equals the user 1 pin code. If a user number is specified the PIN must be correct for the user number. If the user number is set to 0 the PIN can be any valid PIN code.

OUTPUT CONTROL COMMANDS

OUTPUTON x = NOTE: there must be a space between OUTPUTON and the x character. Request to turn on output x, x = 1-32. For this function to work the device number (keypad address) must have the output enabled at program options P82E & P83E.

OUTPUTOFF x = NOTE: there must be a space between OUTPUTOFF and the x character. Request to turn off output x, x = 1-32. For this function to work the device number (keypad address) must have the output enabled at program options P82E & P83E.

OUTPUT x = NOTE: there must be a space between OUTPUT and the x character. Return the current state, ie on or off, of output x, x = 1-32.

KEYS COMMAND

KEYS X = NOTE: there must be a space between KEYS and the data X. This command must be in capital letters.

The KEYS command allows entry of data into a virtual keypad. The DEVICE command should be used to set the virtual keypad to use. Note this command can affect the operation of a normal keypad if the keypad is set to the same address as the device address so it is best to ensure the device address is not the same as any keypad connected to the alarm.

Valid data characters are any of the following.

No spaces should be inserted between the data fields:

0,1,2,3,4,5,6,7,8,9	Numeric entry
A, B	Relating to the <u>A</u> & <u>B</u> buttons on an LCD keypad
C	Relating to the <u>C</u> ontrol button on an LCD keypad
E	Relating to the <u>E</u> nter button on an LCD keypad
H	Relating to the <u>C</u> Hime button on an LCD keypad
N	Relating to the Pa <u>N</u> ic button on an LCD keypad
P	Relating to the <u>P</u> rogram button on an LCD keypad
R	Relating to the <u>A</u> Rm button on an LCD keypad
S	Relating to the <u>S</u> tay button on an LCD keypad
X	Relating to the Bypass (<u>e</u> <u>X</u> clude) button on an LCD keypad

Example usage:

KEYS X0102E

The above example will bypass (exclude) zones 1 and 2. Note if the zone was already bypassed this action will unbypass the zone.

Example usage:

KEYS C10E

The above example will toggle output 10. Note if the output 10 was already on this action will turn it off and vice versa.

CANCEL COMMAND

CANCEL = Will cancel any ongoing RS232 activity such as MEM command output.

STATUS COMMAND

STATUS = Will send the current system status.