

# Intelligent Actuator Robocylinder/E-Con

## Information Sheet for Crimson v2.0

### Compatible Devices

- Intelligent Actuator Robocylinder/E-Con (RCP or RCS)

### Verified Device

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Axis Selection – A drop-down list allows the programmer to select a desired axis (Drop) in the properties for each device.

### Accessible Data

PREFIX	ROBOCYLINDER FUNCTION	Explanation
MEM	Read/Write Memory (R4, RM, WM)	Note 9
S	Status Inquiry (n)	Read Status as one value
STS	Status	Note 1
ALM	Alarms	Note 1
INP	Input Status	Note 1
OUT	Output Status	Note 1
A	Absolute Move (a)	Move to position 'data'
C	Absolute Move mm (c)	Move to 'data' mm, Note 7
D	Stop Motion (d)	Stop/Cancel Motion
E	Increment Move mm (m)	Move 'data' units, Note 7
FVE	Velocity Data mm	Note 2, Note 7
FAC	Acceleration Data mm	Note 2, Note 7
F	Send FVE/FAC mm (f)	Send Vel./Acc. mm, Note 7
I	Position Band Change (i)	Band Width = 'data'
K	Decelerate And Stop (k)	Ramp Stop, Note 7
M	Increment Move (m)	Move 'data' units
O	Home (o)	Note 8
Q	Servo On/Off (q)	Odd 'data' = On, Even = Off
Q3	Position Move (Q3)	'data' = 0 - F

R	Alarm Reset (r)	Send Alarm Reset Command
VVE	Velocity Data	Note 2
VAC	Acceleration Data	Note 2
V	Send VVE/VAC (v)	Send VVE/VAC
Q1	Set A->B Point (Q1)	Send 'data' for NV->Edit Pos.
T	Send Address Allocation (T4)	Set ADDRESS to 'data'
T4R	Address Allocation Response	ADDRESS
W	Send Data (W4)	'data' to ADDRESS
W4R	Data Write Response	(ADDRESS+1)
V5	Set B->A Point (V5)	Send 'data' for Edit->NV Pos.
V5R	B->A Response	Note 5
XQ1	A->B Position Number	Note 3
XT4	Address Allocation	Set ADDR to 'data', Note 4
XW4	Data Write	Data for ADDR, Note 4
XV5	B->A Position Number	Note 3, Note 5
X	EXECUTE Point Write (Q1-T4-W4-V5)	Note 6
XOK	Point Write Status	Note 6

## General Information

When first connecting to a device, the driver determines whether an RCP or an RCS device is assigned on the designated axis. It uses that to reject RCS specific commands from being sent to an RCP. See notes 7 and 9.

Actual command letter is shown in ( )'s.

'data' indicates that a meaningful value is to be written.

For commands D, F, K, R, V, and X, the data written is irrelevant. These selections will return hex FFFFFFFF (decimal -1) when read. Additionally, commands that are write only, such as Absolute Move, which transmit data but do not read data, will return -1 also. It is recommended that these be set for Write Only for more efficient data transfer.

Any write to T4R, W4R, V5R, or XOK, will set its value to 0.

## NOTES

1 – These items are extracted from the Status that is returned by numerous commands.

2 – 'data' written to the FVE, FAC, VVE, or VAC command is maintained internally until a new value is written. When the F or V command is executed, the saved numbers are the values that will be used.

3 – 'data' contains the desired position data to be transferred from the non-volatile memory to the edit area. This is sent when the X instruction is written.

4 – 'data' (XT4=Address)/(XW4=Data) is saved, and will be sent when a write is done on the X instruction. The value of the response is stored in T4R/(W4R).

5 – 'data' (XV5) is the target position in non-volatile memory that the XT4/XW4 data will be written when a write is done on the X instruction. The Accumulated Number of Writes that is returned is stored in V5R.

6 – The X command automatically executes the device's instructions Q1, T4, W4, V5, in that order. It uses the data stored in XQ1, XT4, XW4, and XV5. If the sequence cannot complete, the step number of the sequence will be found in XOK. I.e. if XOK remains on 4, the Q1 command did not get a response. If XOK is 3, then the W4 command did not get a response.

7 – THESE INSTRUCTIONS ARE NOT SUPPORTED IN RCP. On these items, the driver is designed to return 0 if a Read is requested, and, when a write is attempted, return without sending anything to the device or with any indication to the operator.

8 – The programmer must send the proper data for the Home Direction, which depends on the type of device. The driver does not test the value of 'data'.

9 – Use the MEM command to read and write specified memory locations. The programmer selects the target address when configuring this item. For example, 7400 is the value to read the current position. When an RCP device is the destination for a read, the driver always selects R4. Otherwise, the driver selects RM for a read, and WM for a write. The driver DOES NOT VALIDATE the address selected. The programmer is responsible for ensuring that writes are performed only on permissible addresses.

Cable Information  
RS232 Connection

G3 RS232 Port	IAI Robocylinder
5 (Tx)	2 (Rx)
2 (Rx)	3 (Tx)
3/4 (Comm.)	5 (Comm.)