Maguire MLAN Driver – Serial/TCP

Information Sheet for Crimson v2.0

Compatible Devices

- Maguire Blenders and Weighers using MLAN Protocol

Verified Devices

- Line Master Interface – Model XCC

Device Options – Select the desired drop number. 0 can be used only for 1 to 1 communication, usually to obtain the address of an attached unit.

NOTE: It is assumed that the programmer is familiar with the Maguire system. For example, data units, such as pounds or kilograms, may vary based upon controller settings.

Accessible Data:

Prefix	Description	R/W	Notes
ACR	Abort Cycle (1) or Retry (2)	W	1
ADD	Get Address	R	2
ALM	Silence Alarm	W	3
BI	Get Batch Info	R	4
BW	Send BWW + BWF	W	5
BWW	Batch Weight	RW*	5
BWF	Batch Flag Parameter	RW*	5
CLT	Clear Totals	W	3
CTI	Clear Totals Immediately	W	3
CWW	Get Cycle Weight(Word), Time	R	6
CWL	Get Cycle Weight(Long), Time	R	6
ECM	Get Extrusion Control Mode	R	2
LST	Get Linespeed Target, Time, Counts	R	7
MMS	Mixer Motor State	W	8
PCC	Pause Current Cycle	W	8
PARn	Parameter-First character=hex digit	RW	9
PARa	Parameter-First character=alpha	RW	9

RATE	Downstream Rate, Counts Per Length	RW*	10
RK	Set Remote Keypad	W	8, 12
S	Settings (S0=0->Read,=1->Fill,=2->Send)	RW*	11
SKEY	Send Keystroke	W	12
SSR	Steady State Rate	RW	13
SSS	Start/Stop/Status	W	14
SS0	Start/Stop/Status-SubCmd 0 Response	R	14
STAR	* Function 82, * Function 52	RW	15
STAT	Status	R	16
TAG	Set Tag - Recipe, Work Order, Operator	W	17
TAR	Target Throughput, Extrusion Control	RW*	10
TOTR	Totals, then Reset (Set TOTR0 = 1)	RW*	20
TOTS	Totals, No Reset	R	20
TYP	Get Load Cell and Software Type	R	18
WTU	Weight Units	RW	19
VER	Version String	R	21
VOLT	Set Voltage	W	22
YST	Get Yield Status/Steady State Rate	R	23
YSET	Set Yield	W	24
NAK	NAK Received	RW*	25

* - See Notes — Special conditions apply

NOTES

1) Enter 1 (Abort Cycle) or 2 (Abort Retry) to execute. Returns 0 when read.

2) Returns the data read from the controller. If the item is ADD and is assigned to a Comms Device configured with address 0, it can be used to determine the actual address of a connected device.

3) Write a 1 to these items to execute the function. They return 0 when read.

4) BI1 = Batch Weight
BI2 = Current Portion
BI3 = Accumulative Total
BI4 = Batch Count

5) Enter the desired values for BWW and BWF which are stored internally.
Write 1 to BW to set the Batch Weight information to BWW and BWF.

6) CWW1 contains a 2 byte cycle weight.
CWL1 contains a 4 byte cycle weight.
CWW2 and CWL2 contain the 4 byte cycle time.
The programmer selects the correct pair for the application.

7) LST1 contains the Line Speed Target.
LST2 contains the Accumulated Time.
LST3 contains the Accumulated Counts.

8) Enter a 0 or 1 to disable/enable the desired function.
NOTE: When read, the value returned is 409600000, a number that appears as 0 in both a 4 digit hexadecimal value display, and a 5 digit decimal value display. This is required in order to be able to select 0 as an entry. Therefore, these items cannot be used as Flags, as it is not possible to set them to 0 as Flags.

9) PARn takes a hexadecimal digit 1-C as its first character, and A-Z for the other two. PARa takes either two, or three, alpha characters. The third character of PARa also may be a 1 or a 2.
The programmer is responsible for limiting the selection of characters to those parameters actually accessible in the controller.

10) RATE1 is the downstream equipment rate.
RATE2 is the counts per length.
TAR1 is the Target Throughput.
TAR2 is the Extrusion Control Status.
RATE1 and TAR1 can be written to a new value.
RATE2 and TAR2 are read-only.

11) S reads and writes the system settings.
S1, S3, S5, … S21, S23 contain the Hopper Type.
S2, S4, S6, … S22, S24 contain the Hopper Setting.
For a 4-component controller, only the first 4 are valid.
S25 contains the recipe number.
S26 contains the operator number.
S27 contains the work order number.

To change settings:
Read the current settings by ensuring S0 is 0.
Set S0 to 1 to stop reading the current values. Change the desired items.
Set S0 to 2 to write the settings. Or, set S0 to 0 to cancel.
S0 will return to 0 (Read mode) when the write has been completed.

See TAG if only the recipe, operator, or work order, values are to be changed.

12) SKEY sends the entered ASCII value to the controller. Enable SKEY by setting RK to 1. After the value(s) are sent, set RK to 0, or the controller's keypad will remain locked out.
Ex. Use a Program to send "*89" – Set Display to show the Weight Units.
TagRK   = 1; // Enable Remote Keypad (Disable Controller's Keypad)
TagSKey = '*'; // Send *
TagSKey = '8'; // Send 8
TagSKey = '9'; // Send 9
TagRK   = 0; // Disable Remote Keypad (Enable Controller's Keypad)
The controller's display will now show the configured Weight Units.

Note: The programmer is responsible for ensuring that valid sequences are sent. The driver will permit only values 0x20 – 0x7A (ASCII <Space> to 'z').

13) SSR – Steady State Rate is both read and write. The controller, however, will calculate the actual rate, so what is written will not necessarily be what is read.

14) SSS and SSO – Start/Stop/Status
Setting SSS to 0 will set SSO to:
        0 – Hard Stop
        1 – Soft Stop
        2 – Automatic Mode / Running Mode

Setting SSS to 1 executes a Soft Stop.
Setting SSS to 2 executes a Soft Start.
SSO remains unchanged.

15) STAR1 reads or writes the value of *82.
STAR2 reads or writes the value of *52.

16) STAT1 is the Output Status.
STAT2 is the Alarm Status.
STAT3 is the Sensor Status.

17) TAG1 is the Recipe Number to change.
TAG2 is the Work Order Number to change.
TAG3 is the Operator Number to change.

18) TYP1 contains the Load Cell Type.
TYP2 contains the Software Type.

19) WTU – This value is coded. The programmer refers to the manual to select what values correspond to particular weight units.
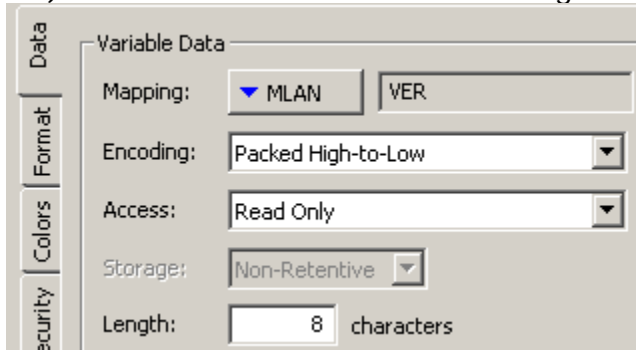
20) TOTR and TOTS — Read Totals and Reset, Read Totals with no Reset.
TOTR1 and TOTS1 — System Type
TOTR2 and TOTS2 — Software Type
TOTR3 and TOTS3 — Sequence Number
TOTR4 and TOTS4 — Cycles
TOTR5 and TOTS5 — Clear / Turnovers Flags
TOTR6-17 and TOTS6-17 — Hopper Totals (6-9 valid for 4 component).

TOTR0 is set to 1 in order to read the totals. Subsequently, the controller resets them. The data read from that command is stored in TOTR1-TOTR17 and will not change until the next TOTR0 is executed, allowing that data to be logged while the controller continues its processes.

TOTS items are read from the controller, as encountered.

Note: If the controller reports "No Totals", only the TOTS data will be set to 0.

21) VER — Version Information. Configure a String Tag as shown:

22) VOLT — Set the Voltage for the downstream equipment. Ensure the value represents the correct resolution, e.g. 1000 may be needed for 10.00 volts.

23) YST1 is the extrusion control status.
YST2 is the rate.

24) YSET — Sets the target yield for extrusion control.

25) NAK — Internal value which may indicate the failure of a write operation.
If a write receives a NAK, NAK shows the failing command number in the least significant byte, shifting previous values into higher bytes. Consecutive, repeated failures are logged only once.
If the write does not receive a response, NAK shows FFnn, where nn is the failing command number, in its lower 2 bytes.

Any write to NAK sets it to 0.

Cable Information

Serial – RS232

G3	MLAN
2	2
5	3
3 or 4	5

IMPORTANT: Do not connect any other MLAN terminal pins to the G3.
The other terminals are used to interconnect additional controllers.

Ethernet: Use a straight-through cable.
The default IP address is 192.168.0.1.