

# IRCON Modline System

## Information Sheet for Crimson v2.0

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### Compatible Devices

- Modline 5
- Modline 3

### Verified Device

- Modline 5

### Revision information for Version 1.10

- 1) SNB through SNF have been added to return characters 5 through 24 from the unit serial number.
- 2) The response to a TSS has been corrected to detect a negative value.
- 3) Leading zeros have been eliminated from the data sent to the device.
- 4) The timeout for the MT command has been increased to 1.5 seconds. The MT command now returns the value last received in response to a previous MT command. If no previous MT, the read value is undefined. The MT is now only issued to the device for a write operation.
- 5) The new TO command is implemented by using TT – the final C or F of the response to TT is always ignored.

### Revision information for Version 1.11

TIM instruction added to permit operator adjustment of comms timeout to accommodate a large number of attached sensors.

### Accessible Data

In the Description field below:

A (5) or (3) indicates a command is used differently between the Modline 5 and the Modline 3

(3) indicates the description applies to the Modline 3

(5) indicates the description applies to the Modline 5

The programmer is responsible for knowing which commands are valid for the type of Modline being implemented.

All commands not marked READ ONLY for Access, can be written.

All commands have 32 bit (Long) data types.

A non-digit encountered in a response that starts with a digit 0-9 is dropped from the data returned. For example, a temperature response of 999F will be displayed as 999. Similarly, the VR (version number) command will return the decimal value VVRR without an intervening decimal point. The version can be displayed by using VarVR/100, the revision by VarVR%100.

If the first character of a response is not a digit 0-9, the only the last 4 characters will be returned.

For example, if MT returns ERR, the returned 32 bits will be 00455252 in hex, or 4543058 in decimal. The programmer must be aware of what commands might return string characters, and program accordingly.

## Operation Codes

Prefix	Description	Access	Notes
TT	Temperature Request (R) (same as TO)	READ ONLY	
EM	Emissivity		
CE	Response to Latest EM Write (R)	READ ONLY	1
ES	E-Slope		
CS	Response to Latest ES Write (R)	READ ONLY	1
AH	Analog output high temperature		
AL	Analog output low temperature		
AO	Analog output mode		
AA	Analog Alarm Output		
AZ	Analog Zero Scale		
AF	Analog Full Scale		
RT	Response Time		
DR	Peak Picker Decay Rate		
PR	Peak picker reset		
PS	Peak Picker Modes/Reset		
PK	Peak Picker Reset Below		
PD	Peak Delay		
SG	Input signal mode		
ST	System Alarm Status (R)	READ ONLY	
SW	Switch input status (R)	READ ONLY	
RC	Instrument temperature (R)	READ ONLY	
BT	Isoblock temperature (R)	READ ONLY	
RP	Relay polarity		
RR	Relay response		
SP	PID Set Point		
AM	PID Auto/Manual		
CP	PID Controller Output		
KP	Proportional Band		
KI	Reset Rate (Integral)		
KD	Rate Time (Derivative)		
BP	Bumpless Transfer		
OA	Hi Alarm-On/Off SP1		
OB	Lo Alarm-On/Off SP2		
MT	Match function		
CM	Response to Latest MT Write (R)	READ ONLY	1
UN	Units select		
UF	Unit full scale (R)	READ ONLY	
UZ	Unit zero scale (R)	READ ONLY	
FT	Features Matrix (R)	READ ONLY	
VR	Version Number (R)	READ ONLY	
MD	Model - Bytes 1-4 (R)	READ ONLY	2
ME	Model - Bytes 5-8 (R)	READ ONLY	2
MF	Model - Bytes 9-12 (R)	READ ONLY	2
MG	Model - Bytes 13-16 (R)	READ ONLY	2
MH	Model - Bytes 17-20 (R)	READ ONLY	2
MI	Model - Bytes 21-23 (R)	READ ONLY	2
SN	Unit serial number – Bytes 1-4 (R)	READ ONLY	
SNB	Unit serial number – Bytes 5-8 (R)	READ ONLY	
SNC	Unit serial number – Bytes 9-12 (R)	READ ONLY	

SND	Unit serial number – Bytes 13-16 (R)	READ ONLY	
SNE	Unit serial number – Bytes 17-20 (R)	READ ONLY	
SNF	Unit serial number – Bytes 21-24 (R)	READ ONLY	
TP	Controller Type (R)	READ ONLY	
CL	1 or 2 color mode (R-series only)		
DT	Dirty window threshold (DWD only)		
LS	Laser control		
AT	Auto Tune		
AC	Auto cal time period (in hours)		
KL	(5)-Keyboard Lock, (3)-Load Demand		
TSS	TS (5)-Temp+Status - Status (R)	READ ONLY	3
TST	TS (5)-Temp+Status - Temperature (R)	READ ONLY	3
TIM	Timeout for this device		4

Note 1: The EM, ES, and MT, commands return a value after a write. In some cases these values cannot otherwise be read directly. CE, CS, and CM will hold the value of the most recent response to a write of those commands.

Note 2: The Model (MD-MI) and Serial Number (SN, SNB-SNF) characters are packed, four ASCII characters in 32 bits. Bytes 1, 5, 9, 13, 17, and 20, are in the most significant position. For example, if Az12 are the first four characters in the response, the value returned is 417A3132 (hexadecimal).

Note 3: In the Modline 5, the TS command returns both a temperature word and a status word. TSS and TST will hold the respective data from that command. TS3 accesses the TS command in a Modline 3, which accesses Track and Hold. These commands have been moved to the bottom of the list in version 1.10. The identical function of TST and TSS is obtained by using TT and ST.

Note 4: If multiple units are connected, it may be necessary to program this selection, and set a timeout value. The lowest value is 800 ms (default) and the highest is 3000 ms. The Match Function waits an additional 1 sec. beyond that.

### Cable Information

G3 RS485 Port	IRCON cable wire #	IRCON wire color
Tx-, Rx- ( 1 & 4 )	3	Yellow
Tx+, Rx+ ( 2 & 3 )	4	Yellow/White