

Technical Bulletin # 970521

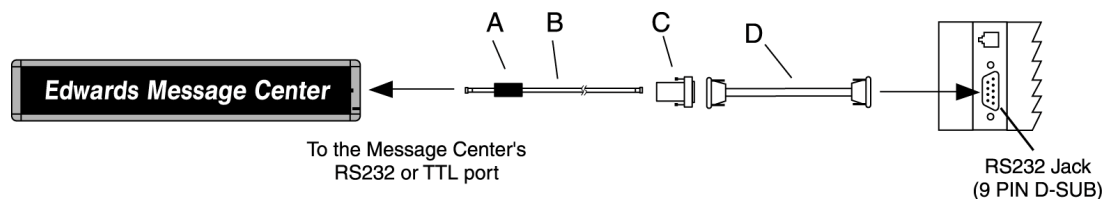
Date: July 19, 1999
Product: Message Centers
Product Category: PLC Activation

Subject: Activating Preloaded Messages using a PLC

All Edwards Message Centers are capable of displaying messages using an ASCII Text string. This technical bulletin will demonstrate how to activate messages previously loaded into your Edwards Message Center. The PLC needs to be capable of sending an ASCII Text String to either an RS232 or RS485 output. The text string must be in the proper format; otherwise the message will not be displayed. Any Experienced Ladder Logic Programmer will understand these basic instructions and will be able to integrate these commands into more complex Ladder Logic Functions.

SECTION I: Hardware Connections

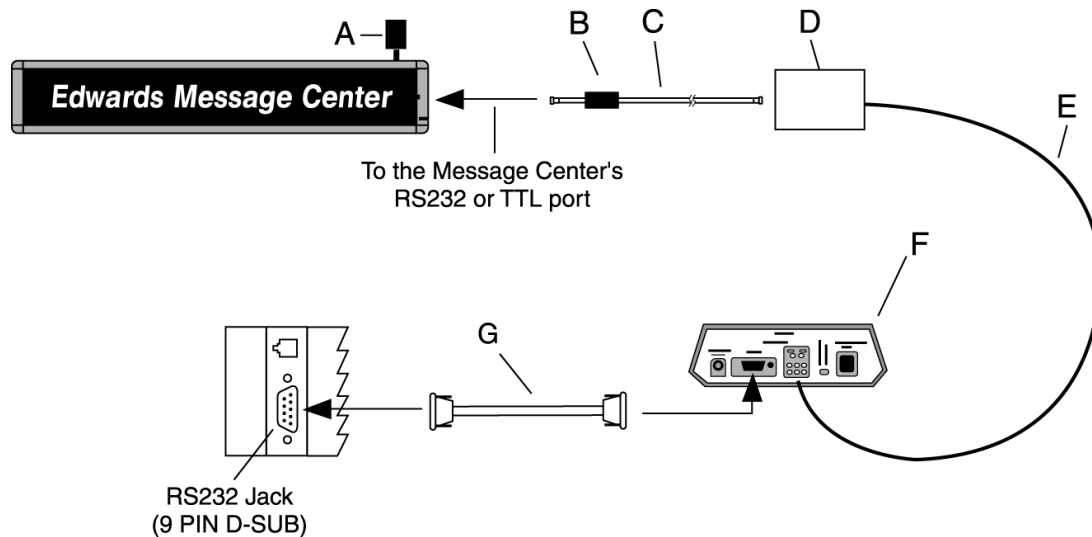
The PLC Software must be capable of sending an ASCII Text String to an RS232 Serial Port. For single Message Center operation use an adapter and straight through RS-232 cable as shown in diagram 1. For multiple Message Center or RS485 operation follow the wiring employed in diagram 2.



Item	Cat. No.	Description
A	—	Ferrite (ferrite end towards Message Center)
B	MCN232-RJ11-25	25 foot, 6-conductor RS-232 cable
	MCN232-RJ11-50	50 foot, 6-conductor RS-232 cable
C	MCN2329FRJ11	9 Pin D-Sub/to 6 pos RJ11 adapter
D	MCN485CB232A9	10 foot 9 pin-to-9pin type A9 RS232 cable

NOTE: Set internal message center jumper to RS232

Diagram 1



Item	Cat. No.	Description
A	MCN485EOLTCB	EOL Termination
B	—	Ferrite (ferrite end towards Message Center)
C	MCN232-RJ11-8	8 foot, 4-conductor RS-485 cable
	MCN485-RJ11-1	1 foot, 4-conductor RS-485 cable
D	MCNMNARJ11485	Modular network adapter
E	MCN485-1000	1000 foot spool of RS485 cable
F	MCN485CB2EOLT	Converter box w/2 EOL terminators
G	MCN485CB232A9	10 foot 9 pin-to-9 pin type A9 RS232 cable

NOTE: Set internal message center jumper to RS485

Diagram 2

SECTION II: Software Configuration

To configure any software for communications with the Message Center, the following parameters need to be established by the user:

Mode: ASCII
 Baud: 9600
 Parity: None
 Stop Bits: 1
 Start Bits: 8

SECTION III: Message Center Setup

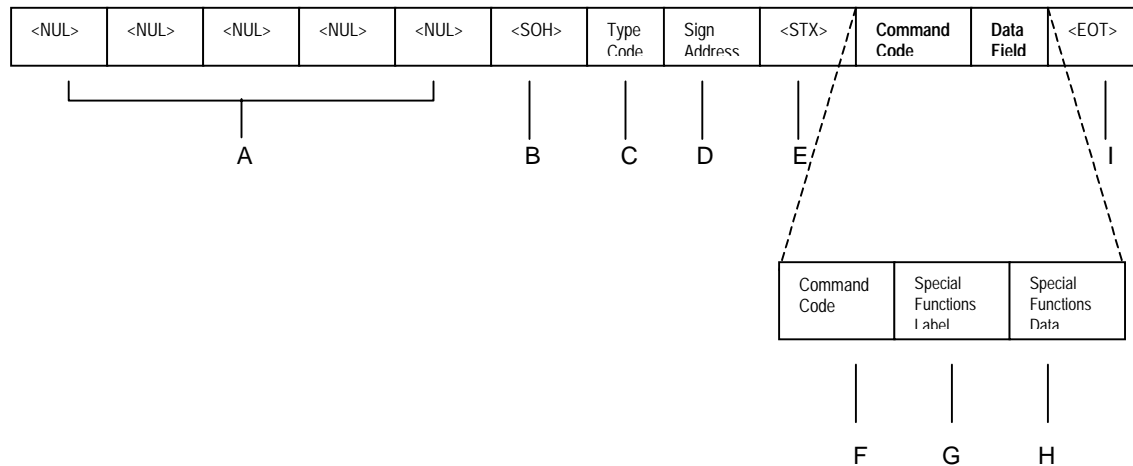
Messages must be loaded using any of the 81 valid File labels. Refer to your Remote Control Programming Instructions or Technical Bulletin 970520 for information on loading messages into the Message Center.

SECTION IV: Text String Format

Sending an ASCII text string to a Message Center can easily activate a message. Listed below is a sample string that tells an Edward's Message Center to display a preloaded message: The Message Center's serial address in this example is 01.

Note - Each message string should begin with five NUL (00h) characters for auto-baud detect of serial data sent to the Message Center. Messages should follow the Special Function Text Format outlined below:

Message example 1:



<NUL><NUL><NUL><NUL><NUL><SOH>Z01<STX>E.SUA<EOT>

Where:

Item	Name	ASCII	HEX Value	Description	
A	<NUL>	^@	00h	Five consecutive <NUL> for sync & auto-baud detect of the message.	
B	<SOH>	^A	01h	<SOH> "Start of Header" character	
C	Type Code	Z	5Ah	ASCII Type Code for All Signs in network	
D	Sign Address	01	30h 31h	2 Byte ASCII-Hex Sign Address (see note 1)	
E	<STX>	^B	02h	<STX> "Start of Text" character	
F	Command Code	E	45h	Command code E, Write Special Functions to the sign	
G	Special Functions Label	.	2Eh	Set Run Sequence	
H	Special Functions Data	Run Sequence Order	T or S	54h or 53h	"T" 54h = All subsequent Text File Labels in the run sequence will run according to their associated times. "S" 53h = All subsequent Text File Labels in the Run Sequence will run <i>in order</i> regardless of each file's run time.
		Keyboard Protection Status	U or L	55h or 4Ch	"U" 55h = Unlocked. This allows the Run Sequence to be changed from the Handheld Remote. "L" 4Ch = Locked. The Run Sequence is inaccessible from the Handheld Remote.
		Text File Label	A, B, etc.	41h, 42h, etc.	Text Files to be activated. More than one file can be specified. This also determines the run order.
I	<EOT>	^D	04h	The <EOT> end of transmission character. Must follow the end of every message string.	

Note: The serial address of the Message Center is represented by two ASCII digits as a number between "00" to "FF" (0 to 255). If 00 is the desired serial address, the two byte ASCII representation would be 30h for the first digit and 30h for the second digit. It is important to

remember to treat the serial address as a two-digit code. (All Message Center on the network will respond to the string when the serial address is 00.)

SECTION V: Sample Strings

Message Action	String Required
Activate Text File A	<NUL><NUL><NUL><NUL><NUL><SOH>Z01<STX>E.SUA<EOT>
Activate Text File B	<NUL><NUL><NUL><NUL><NUL><SOH>Z01<STX>E.SUB<EOT>
Activate Text File C	<NUL><NUL><NUL><NUL><NUL><SOH>Z01<STX>E.SUC<EOT>
Activate Text Files A, B & C	<NUL><NUL><NUL><NUL><NUL><SOH>Z01<STX>E.SUABC<EOT>

Note: The Run Sequence Order is determined by the order of the File Labels as entered into the text string.

SECTION VI: Additional Support

For questions please call our Technical Support @ 203-699-3300 or visit our website www.edwards-signals.com. Additional codes are available for controlling message center text strings in our Communications Protocol available from your local Edwards Signaling representative.