SBLM-2-1x## Message Sign

SBLM-2-2x## Message Sign

User's Manual

version 2.0

Read this Manual before installing
and operating this equipment.

Save this manual for future reference

Table of Contents

Wiring and Mounting

Wiring

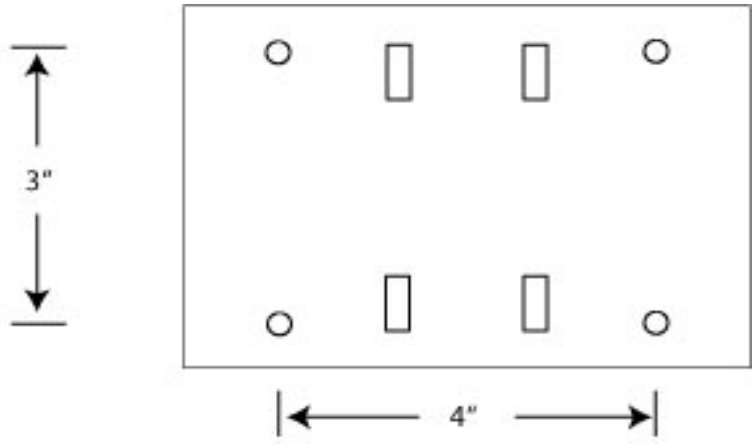
	Indicator	Pin	Display
Indicators with Active 20 mA Output	+20mA	6	CL (+)
	–20mA	5	CL (–)
Indicators with Passive 20 mA Output	+20mA	1	VCC
		2	GND
		5	CL(–) JUMP
	–20mA	6	CL(+)
Indicators with RS232 Output	TXD	3	232 RXD
	GND	2	GND
Indicators with RS422 Output	TX 422A (+)	7	RX 422A
	TX 422B (–)	8	RX 422B

Connector Pin Out

1	VCC
2	GND
3	232 RXD
4	232 TXD
5	CL(-)
6	CL(+)
7	RX 422A
8	RX 422B
9	TX CL(-)
10	TX CL(+)
11	TX 422A
12	TX 422B
13	13 GREEN
14	14 RED

Mounting

The remote display can be mounted using four 1/4” bolts or two 1/2” Wide hose clamps



Options:

To enter the options, hold the LEFT button during countdown. While in Options, LEFT increments the Option Number and Right toggles the option value.

Option 0: Factory Default

Resets the unit to Factory defaults of all options OFF. This option has the same effect as holding both LEFT and RIGHT during countdown.

Option 1: Version

Displays the firmware version.

Option 2: BAUD

Selects the BAUD rate at which the remote display will communicate. Selectable options are 300-19200. 1200 baud is the default.

Option 3: Timeout

This option will set the amount of time in seconds that the remote display can go without receiving data before it considers communication lost. After communication is lost the remote display will do one of several things based on option 4.

Option 4: No Data Display

This option will control how the remote display operates after data communication is determined to be lost based on Option 3. Possible operations include:

0 → Holding the last value
1 → Displaying "No Data"
2 → Blanking the remote

This option is useful to determine how the remote will operate in ON-Demand applications.

Option 5: Addressable

The addressable option is used when multiple data streams are transmitted along the same data line and each stream is used by different pieces of equipment. Set a specified address character that will be the first character in the data stream. When left blank the software will take any data stream. Consult the ASCII Table (page 10) to find the corresponding decimal value for the desired character. The most common value is decimal 2 for <STX>.

Option 6: No Count Down

This option ON will disable the remote from counting from all 9's to all 0's on power up.

Option 7: End Character

Set a specified end character that will be the last character in the data stream. When left blank the software will default to a <CR> which is the same as setting the unit to decimal 13. Consult the ASCII Table (page 10) to find the corresponding decimal value for the desired character. Some common values are decimal 3 for <ETX>, decimal 10 for <LF> and decimal 13 for <CR>.

Option 8: Multi Line Character

Set a specified character that will be the last character in first line of the data stream and will start the second line in multi line messages. When left blank the software will default to a <LF> which is the same as setting the unit to decimal 10. Consult the ASCII Table (page 10) to find the corresponding decimal value for the desired character.

Stream Format (1 Line Display)
<Address><Line 1 Data><LF><CR>

Stream Format (2 Line Display)
<Address><Line 1 Data><LF><Line 2 Data><CR>

<Address>	Address character -default is a start of text (dec 2)
<Line 1 Data>	text for upper line
<LF>	Line Feed (dec 10)
<Line 2 Data>	text for lower line including large characters
<CR>	Carriage Return (dec 13)

Large Character Format (2 Line Displays Only)
Larger (4" high) characters can be displayed by transmitting 2 bytes. The first byte is an Enquiry (dec 5) and the second character is the desired display character. All large characters are transmitted with Line 2 Data

Example Streams

Display	Stream
A B C D E F G H 1 2 3 4 5 6 7 8	<STX>ABCDEFGH<LF>12345678<CR>
A 2 B C D E F 1 3 4 5 6 7	<STX>ABCDEF<LF>1<ENQ>234567<CR>
A 2 B 4 C D 1 3 5 6	<STX>ABCD<LF>1<ENQ>23<ENQ>456<CR>
1 2 3 4	<STX><LF><ENQ>1<ENQ>2<ENQ>3<ENQ>4<CR>

Building Tip:

Sketch out what you want the message sign to read and start by constructing the bottom line including large characters first, then go back and fill in the first line with the appropriate characters

Building Example

Step 1: Determine stream for Line 2

B	A	Y	1					O	v	e	r	C	a	p

<Line 2 Data>
<ENQ>B<ENQ>A<ENQ>Y<ENQ>1Over Cap

This leaves 8 characters to fill in to line 1, starting above the O

Step 2: Determine stream for Line 1

B	A	Y	1			7	2	,	1	6	0		
				O	v	e	r		C	a	p		

<Line 1 Data>
<SP><SP>72,160

Step 3: Assemble full stream

<STX><Line 1 Data><LF><Line 2 Data><CR>
The full stream would look like
<STX><SP><SP>72,160<LF><ENQ>B<ENQ>A<ENQ>Y<ENQ>1Over Cap<CR>

Message Signs

Part Number	Description
SBLM-2-1x8	8 full alpha numeric characters with 1.75-inch height
SBLM-2-1x16	16 full alpha numeric characters with 1.75-inch height
SBLM-2-1x24	24 full alpha numeric characters with 1.75-inch height
SBLM-2-1x32	32 full alpha numeric characters with 1.75-inch height
SBLM-2-2x8	Two lines of 8 full alpha numeric characters with 1.75-inch height also up to 4 characters with 4 inch height
SBLM-2-2x16	Two lines of 16 full alpha numeric characters with 1.75-inch height also up to 8 characters with 4 inch height
SBLM-2-2x24	Two lines of 24 full alpha numeric characters with 1.75-inch height also up to 12 characters with 4 inch height
SBLM-2-2x32	Two lines of 32 full alpha numeric characters with 1.75-inch height also up to 16 characters with 4 inch height

Replacement Parts

Part #	**Description**
MSMB2-1x	Motherboard for SBLM-2-1x## remote
MSMB2-2x	Motherboard for SBLM-2-2x## remote
MSLED2-1x	LED board for SBLM-2-1x## remote (1 line of 8 digits)
MSLED2-1x	LED board for SBLM-2-2x## remote (2 lines of 8 digits)
PWR	110-220 switching power supply-PD65A

ASCII Table

Dec	Hx	Oct	Char	Dec	Hx	Oct	Html	Chr	Dec	Hx	Oct	Html	Chr	Dec	Hx	Oct	Html	Chr
0	0	000	NUL (null)	32	20	040		Space	64	40	100	@	@	96	60	140	`	`
1	1	001	SOH (start of heading)	33	21	041	!	!	65	41	101	A	A	97	61	141	a	a
2	2	002	STX (start of text)	34	22	042	"	"	66	42	102	B	B	98	62	142	b	b
3	3	003	ETX (end of text)	35	23	043	#	#	67	43	103	C	C	99	63	143	c	c
4	4	004	EOT (end of transmission)	36	24	044	$	$	68	44	104	D	D	100	64	144	d	d
5	5	005	ENQ (enquiry)	37	25	045	%	%	69	45	105	E	E	101	65	145	e	e
6	6	006	ACK (acknowledge)	38	26	046	&	&	70	46	106	F	F	102	66	146	f	f
7	7	007	BEL (bell)	39	27	047	'	'	71	47	107	G	G	103	67	147	g	g
8	8	010	BS (backspace)	40	28	050	(	(	72	48	110	H	H	104	68	150	h	h
9	9	011	TAB (horizontal tab)	41	29	051	)	)	73	49	111	I	I	105	69	151	i	i
10	A	012	LF (NL line feed, new line)	42	2A	052	*	*	74	4A	112	J	J	106	6A	152	j	j
11	B	013	VT (vertical tab)	43	2B	053	+	+	75	4B	113	K	K	107	6B	153	k	k
12	C	014	FF (NP form feed, new page)	44	2C	054	,	,	76	4C	114	L	L	108	6C	154	l	l
13	D	015	CR (carriage return)	45	2D	055	-	-	77	4D	115	M	M	109	6D	155	m	m
14	E	016	SO (shift out)	46	2E	056	.	.	78	4E	116	N	N	110	6E	156	n	n
15	F	017	SI (shift in)	47	2F	057	/	/	79	4F	117	O	O	111	6F	157	o	o
16	10	020	DLE (data link escape)	48	30	060	0	0	80	50	120	P	P	112	70	160	p	p
17	11	021	DC1 (device control 1)	49	31	061	1	1	81	51	121	Q	Q	113	71	161	q	q
18	12	022	DC2 (device control 2)	50	32	062	2	2	82	52	122	R	R	114	72	162	r	r
19	13	023	DC3 (device control 3)	51	33	063	3	3	83	53	123	S	S	115	73	163	s	s
20	14	024	DC4 (device control 4)	52	34	064	4	4	84	54	124	T	T	116	74	164	t	t
21	15	025	NAK (negative acknowledge)	53	35	065	5	5	85	55	125	U	U	117	75	165	u	u
22	16	026	SYN (synchronous idle)	54	36	066	6	6	86	56	126	V	V	118	76	166	v	v
23	17	027	ETB (end of trans. block)	55	37	067	7	7	87	57	127	W	W	119	77	167	w	w
24	18	030	CAN (cancel)	56	38	070	8	8	88	58	130	X	X	120	78	170	x	x
25	19	031	EM (end of medium)	57	39	071	9	9	89	59	131	Y	Y	121	79	171	y	y
26	1A	032	SUB (substitute)	58	3A	072	:	:	90	5A	132	Z	Z	122	7A	172	z	z
27	1B	033	ESC (escape)	59	3B	073	;	;	91	5B	133	[	[	123	7B	173	{	{
28	1C	034	FS (file separator)	60	3C	074	<	<	92	5C	134	\	\	124	7C	174			|
29	1D	035	GS (group separator)	61	3D	075	=	=	93	5D	135	]	]	125	7D	175	}	}
30	1E	036	RS (record separator)	62	3E	076	>	>	94	5E	136	^	^	126	7E	176	~	~
31	1F	037	US (unit separator)	63	3F	077	?	?	95	5F	137	_	_	127	7F	177	&#127;	DEL

Revision History

Date	Revision	Description
02-22-2010	v2.0	Added warning labels, ASCII table, wiring and mounting drawings and options 7 and 8. No longer requires a space before the addressable character.
11-28-2007	v1.0	Initial Manual Release