



BLD65
12R962

User/Technical Manual

Contents subject to change without notice

Version 1.1
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1. INTRODUCTION

General Information

- Read and understand all operating instructions before using this product. Keep this manual for future reference.
- Ensure that the data communication format, protocol, and interface selection are correctly set up before using.
- Do not use in areas of fluctuating voltage.
- Do not operate near high power electronic devices that can emit RF signals and cause unstable readings.

Specifications

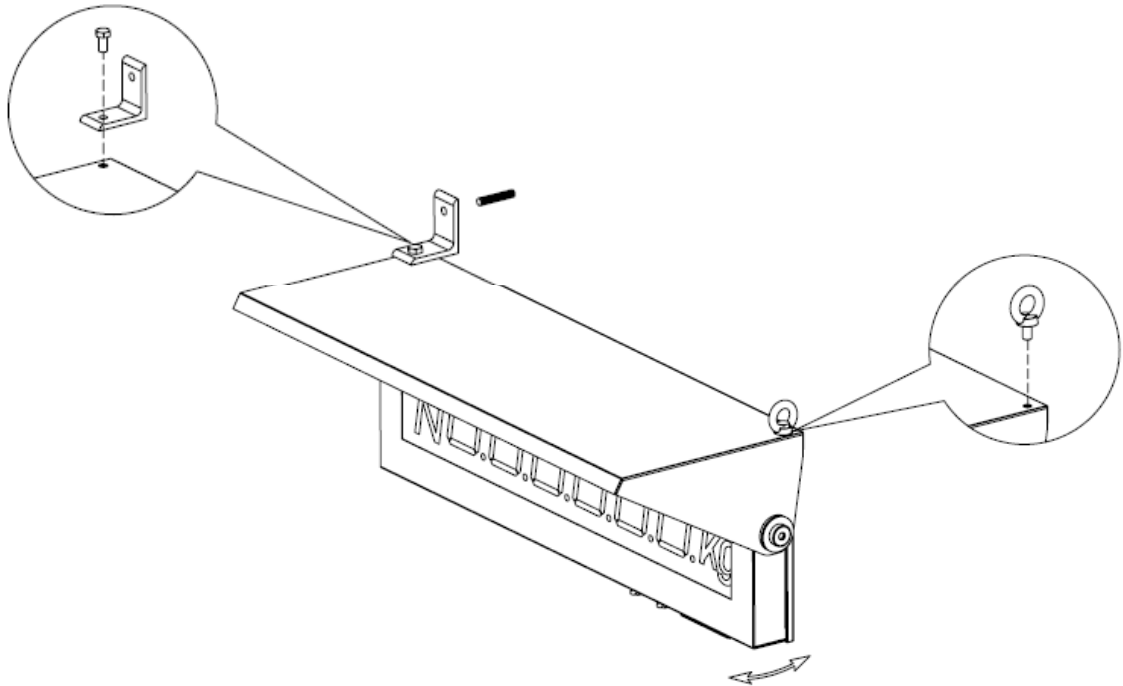
Model	BLD65
Communication Interface Types	RS232
	RS485
	20mA current loop (active, self-powered, no power needed from host)
	20mA current loop (passive, power supplied from host)
Data format	8N1, 7E1, 7O1 selectable
Baud rate	110bps~19200bps selectable
Protocols	16 Selectable fixed Protocols
Display Contents	Net/Gross, kg/lb indicators, weight data
Display Type	Ultra-bright LED display with six 5" high, 7-segment digits
Display Range	-99,999 to 999,999
Operating Temp.	-5° to 160°F (-20° to 70°C)
Power Supply	24V/2.0A, AC adaptor (working current≤1.5A)
Waterproof Grade	IP65

Contents

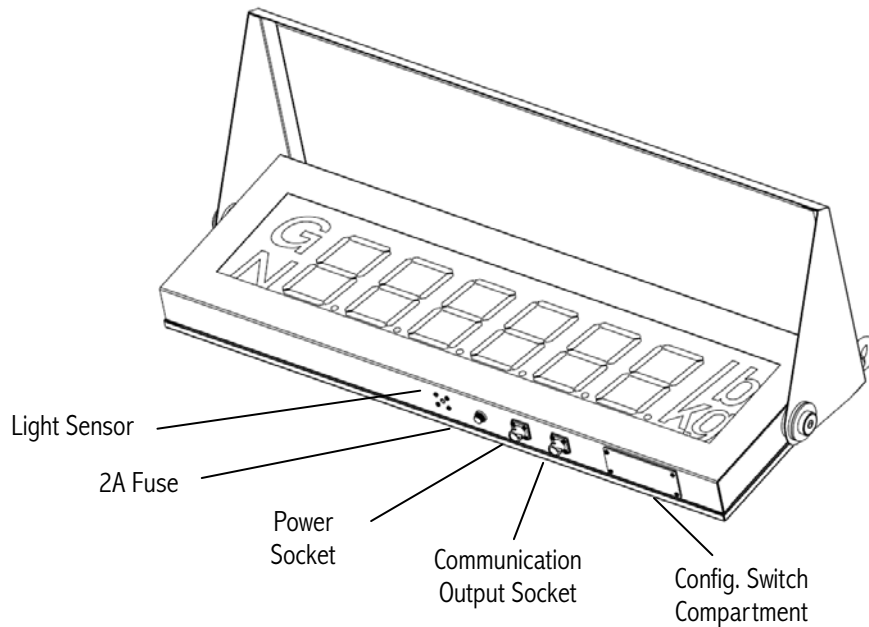
- BLD65 remote display
- RS232 10m communication cable
- AC110V/AC24V 2.0A UL waterproof adaptor
- 2A fuse
- Quick Guide & Technical Manual
- M12 hex wrench
- “L”-shaped wall bracket (x2)
- M10 hex bolt (x2)
- Eye bolt (x2)

2. Installation

1. Install L-brackets or eye bolts (included) in sun shade holes to accommodate wall mounting or hanging installation. L-bracket holes are 14mm. Ensure secure mounting before proceeding.



2. Use the M12 wrench to adjust the tilt angle.



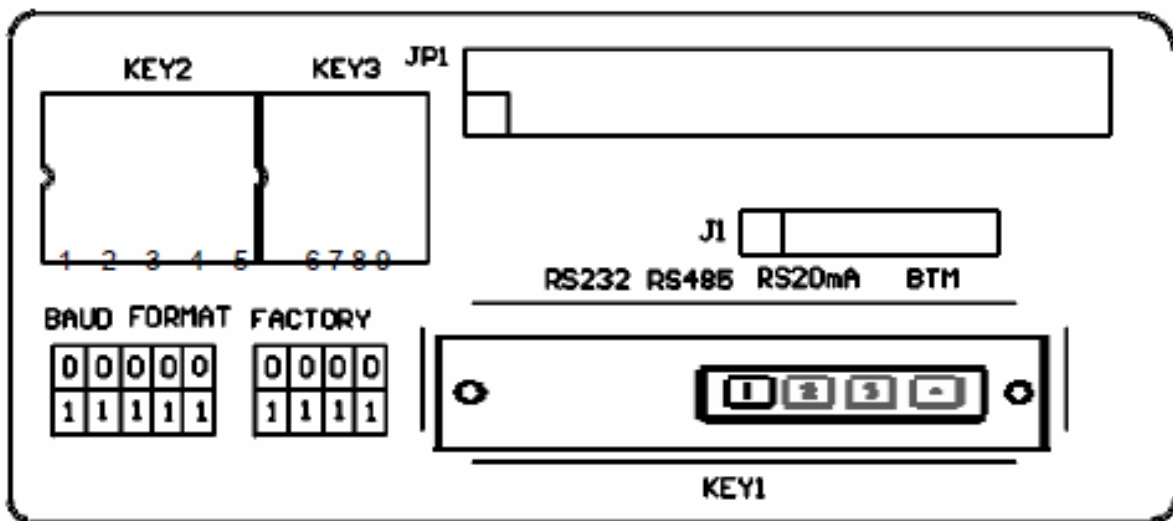
3. Attach power and communication cables. **DO NOT** power on until after completing step 4.



4. Open the cover of "Config Switch Compartment". See "**Display Setup** section" for configuration switch settings prior to use.



3. Display Setup



Note: All the configuration changes should be made with the power off !

KEY2 (5 dip switches)							KEY3 (4 dip switches)				KEY1 (4 position switch)				
Dip Setting			Baud rate (bps)	Dip Setting		Data Format	Dip Setting				Host (Indicator Print Format)	Communication Interface Type			
1	2	3		4	5		6	7	8	9		Position1	Position2		
0	0	0	110	0	0	8N1	0	0	0	0	Format: 3.1.1	Position1	RS232		
0	0	1	300	0	1	7O1	0	0	0	1	Format: 3.1.2	Position2	RS485		
0	1	0	600	1	0	7E1	0	0	1	0	Format: 3.1.3	Position3	20mA current loop		
0	1	1	1200	1	1	7E1	0	0	1	1	Format: 3.1.4				
1	0	0	2400				0	1	0	0	Format: 3.1.5				
1	0	1	4800				0	1	0	1	Format: 3.1.6				
1	1	0	9600				0	1	1	0	Format: 3.1.7				
1	1	1	19200				0	1	1	1	Format: 3.1.8				
							1	0	0	0	Format: 3.1.9	Position4	Bluetooth (if avail.)		
							1	0	0	1	Format: 3.1.10				
							1	0	1	0	Format: 3.1.11				
							1	0	1	1	Format: 3.1.12				
						1	1	0	0	Format: 3.1.13					
						1	1	0	1	Format: 3.1.14					
						1	1	1	0	Format: 3.1.15					
						1	1	1	1	Format: 3.1.16					

Default dip switch settings in Bold

3.1 Protocol Format Details

3.1.1. Data Format Example: 12345lb Gross, transmit data format of Common GSE Models:

```
<SP><SP><SP><1><2><3><4><5><SP><l><b><SP><SP><SP><SP><G><r><o><s><s><CR>
<LF>
```

Data Format Example: 12345kg Net

```
<SP><SP><SP><1><2><3><4><5><SP><k><g><SP><SP><SP><SP><N><e><t><SP><SP>
<CR><LF>
```

Notes for symbols used in commands and response:

<LF> Line Feed character

<CR> Carriage Return character

<SP> Space

<kg/lb> kg or lb

3.1.2. Data Format Example: 123456lb, transmit data format of Salter/Transcell series Indicators:

```
<STX><SP><SP><1><2><3><4><5><6><L><G><SP><CR><LF>
```

Notes for symbols used in commands and response:

<STX> Start of Text

<L/K> LB or KG

<G/N> G = Gross, N = Net

<SP> Space

<CR> Carriage Return character

<LF> Line Feed character

3.1.3. Data Format Example: 123456lb, transmit data format of Weigh-Tronix WI125 models:

```
<SP><G><SP><SP><1><2><3><4><5><6><SP><L><B><SP><CR><LF>
```

Notes for symbols used in commands and response:

<SP> Space

<G/N> G = Gross, N = Net

<LB/KG> LB or KG

<CR> Carriage Return character

<LF> Line Feed character

3.1.4. Data Format Example: 123456lb, transmit data format of Dillon ED Dynamometers:

"Print Format # 1"

```
<SP><1><2><3><4><5><6><SP><l><b><f><CR><LF>
```

Notes for symbols used in commands and response:

<SP> Space

<LBF/KGF> LB or KG

<CR> Carriage Return character

<LF> Line Feed character

Protocol Format Details (continued)

3.1.5. Data format example: 380.5lb, transmit data format of **SBI-140/100, SBI-521, FI-521 and EHI-E1** transmit continuously mode **(default setting)**

```
<SP><SP><SP><SP><3><8><0><.><5></><b><FF><ETX><LF>
<SP><SP><SP><3><8><0><.><5></><b><CR><LF>H1H2H3H4<CR><ETX><LF>
<SP><SP><SP><SP><SP><3><8><0><.><5></><b><CR><LF>H1H2H3<CR><ETX><LF>
<SP><SP><SP><SP><3><8><0><.><5></><b><CR><LF>H1H2H3H4<CR><ETX><LF>
```

Notes for symbols used in commands and response:

H1H2H3H4:three status bytes, definition refer to EASTHIGH or SBI-140/100 user's manual

```
<SP> Space (20hex)
<LB/KG> LB=lb, KG=kg
<FF> Form Feed (0chex)
<ETX> end of text. (03hex)
<LF> Line Feed character (0ahex)
```

3.1.6. Data format example: -9999lb, transmit data format: **4 Weight Characters", WI127** transmit data

```
<SP><G><-><9><9><9><9><SP></><b><CR><LF>
```

Notes for symbols used in commands and response:

```
<SP> Space (20hex)
<G/N> G = Gross, N = Net
<LB/KG> LB=lb, KG=kg
<CR> Carriage Return character (0dhex)
<LF> Line Feed character (0ahex)
```

3.1.7. Data format example: -100000lb ", transmit data format: **6 Weight Characters", WI127** transmit data

```
<SP><G><-><1><0><0><0><0><0><SP></><b><CR><LF>
```

Notes for symbols used in commands and response:

```
<SP> Space (20hex)
<G/N> G = Gross, N = Net
<LB/KG> LB=lb, KG=kg
<CR> Carriage Return character (0dhex)
<LF> Line Feed character (0ahex)
```

3.1.8. Data format example: 123123kg, transmit data format: **SMA** transmit data

```
<LF><SP><SP><G><SP><SP><-><1><2><3><1><2><3><kg><SP><CR>
```

Notes for symbols used in commands and response:

```
<LF> Line Feed character (0ahex)
<SP> Space (20hex)
<G/N> G = Gross, N = Net
<kg/lb> lb = lb, kg = kg
<CR> Carriage Return character (0dhex)
```


Protocol Format Details (continued)

3.1.9. Data format example: 123.233lb, transmit data format of **SB-400**:

`<SP><1><2><3><.,><2><3><3><lb><G><SP><SP><CR>`

Notes for symbols used in commands and response:

`<SP>` Space (20hex)

`<kg/lb>` lb = lb, kg = kg

`<G/N>` G = Gross, N = Net

`<CR>` Carriage Return character (0dhex)

3.1.10. Data format example: 233233lb, transmit data format of **SB-200**:

`<CR><SP><SP><2><3><3><2><3><3><SP><lb><G><ETX>`

Notes for symbols used in commands and response:

`<CR>` Carriage Return character (0dhex)

`<SP>` Space (20hex)

`<kg/lb>` lb = lb, kg = kg

`<G/N>` G = Gross, N = Net

`<ETX>` end of text. (03hex)

3.1.11. Data format example: 233233lb, transmit data format of **IQ355**:

`<STX><SP><SP><2><3><3><2><3><3><L><G><SP><CR><LF>`

Notes for symbols used in commands and response:

`<STX>` Start of Text (02hex)

`<SP>` Space (20hex)

`<L/K>` L = lb, K = kg

`<G/N>` G = Gross, N = Net

`<CR>` Carriage Return character (0dhex)

`<LF>` Line Feed character (0ahex)

3.1.12. Data format example: 233233lb, transmit data format of **205/210**:

BLD65 transmit commands : `<ENQ>` (05hex, Request weight from the indicator BI-Directional)

Indicator Response:

`<SP><SP><2><3><3><2><3><3><lb><G><SP><SP><CR>`

Notes for symbols used in commands and response:

`<SP>` Space (20hex)

`<kg/lb>` lb = lb, kg = kg

`<G/N>` G = Gross, N = Net

`<CR>` Carriage Return character (0dhex)

Protocol Format Details (continued)

3.1.13. Data format example: 323334lb, transmit data format:

<STX><y(4)><y(0)><SP><3><2><3><3><3><4><ETX>

Notes for symbols used in commands and response:

<STX> Start of Text (02hex)

<SP> Space (20hex)

<ETX> end of text (03hex)

yy=40 Gross weight (lb), yy=43 Gross weight (kg),

yy=41 net weight (lb), yy=44 net weight (kg),

yy=42 tare weight (lb), yy=45 tare weight (kg)

3.1.14. Data format example: 13233lb, transmit data format of **WI-110S/120S**

<SP><G><+><1><3><2><3><3><SP><lb><CR><LF>

Notes for symbols used in commands and response:

<SP> Space (20hex)

<G/N> G = Gross, N = Net

<lb/kg> lb = lb, kg = kg

<CR> Carriage Return character (0dhex)

<LF> Line Feed character (0ahex)

3.1.15. Data format example: 149946, transmit data format of **E1010**

<SP><0><0><0><1><4><9><9><4><6><CR>

Notes for symbols used in commands and response:

<SP> Space (20hex)

<CR> Carriage Return character (0dhex)

3.1.16. Data format example: -99999lb, transmit data format: **"5 Weight Characters", WI127** transmit data

<SP><G><-><9><9><9><9><9><SP><I><CR><LF>

Notes for symbols used in commands and response:

<SP> Space (20hex)

<G/N> G = Gross, N = Net

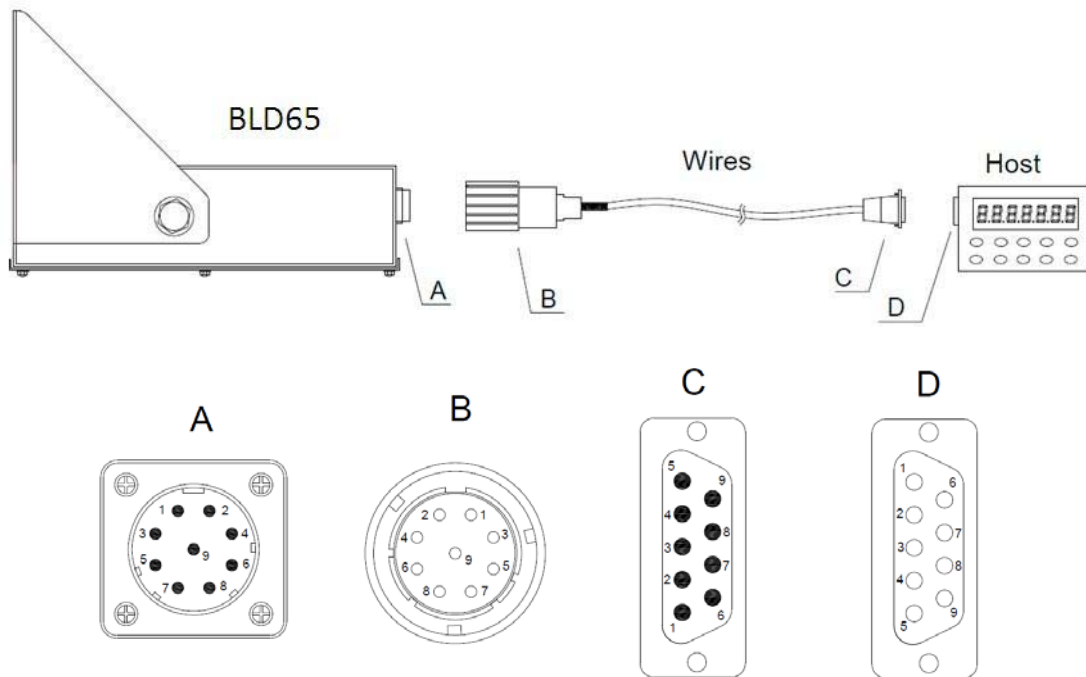
<LB/KG> LB=lb, KG=kg

<CR> Carriage Return character (0dhex)

<LF> Line Feed character (0ahex)

Note: Before communicating between the two devices, please make sure the parity setting, data bits, baud rates, and RS232 format port are correctly selected. In normal working mode the BLD65 will display the indicated weight from the host.

4. Connection and Wiring Details



Connector "A" Pin#	Wire Color	Connector "B" Pin#	Wire Color	Connector "C" Pin#
1 -----	Brown	1 -----	Red	-----1
2 -----	Red	2 -----	Black	-----2
3 -----	Orange	3 -----	Yellow	-----3
4 -----	Yellow	4 -----	Green	-----4
5 -----	Green	5 -----	Blue	-----5
6 -----	Blue	6 -----	White	-----6
7-9 -----	not used	7-9 -----	not used	-----7-9

RS232 Interface connection

Connector "C" Pin#	Function	Color
2 -----	RXD	Black
3 -----	TXD	Yellow
5 -----	RD_AGND	Blue

RS485 Interface connection

Connector "C" Pin#	Function	Color
1 -----	RS485 receive+	Red
2 -----	RS485 receive-	Black
3 -----	RS485 transmit+	Yellow
4 -----	RS485 transmit-	Green
5 -----	RD_AGND	Blue

20mA current loop interface connection

Connector "C" Pin#	Function	Color
1 -----	20mA Current Loop Transmit+	Red
2 -----	20mA Current Loop Transmit-	Black
3 -----	20mA Current Loop Receive+	Yellow
4 -----	20mA Current Loop Receive-	Green
5 -----	RD_AGND	Blue
6 -----	RD_Vout	White

5. Symbols Defined:

- *Err01*: no communication
- *Err02*: incorrect format data received
- ----- : over range
- ----- : below range

6. Troubleshooting

Symptom	Possible Causes	Solutions
Display does not light	<ul style="list-style-type: none"> ▪ Blown fuse ▪ Damaged adaptor 	<ul style="list-style-type: none"> ▪ Replace fuse ▪ Replace adaptor
Display is dark	<ul style="list-style-type: none"> ▪ Low voltage 	<ul style="list-style-type: none"> ▪ Check the input voltage
<i>Err01</i> (no communication)	<ul style="list-style-type: none"> ▪ Indicator data format differs from the host ▪ Communication cable is not connected correctly 	<ul style="list-style-type: none"> ▪ Check data format setup ▪ Check cable connection
<i>Err02</i> (incorrect format data received)	<ul style="list-style-type: none"> ▪ Format switch is not set correctly ▪ Host is not set correctly ▪ Unknown host or data format used on host device 	<ul style="list-style-type: none"> ▪ Check the BLD65 and Host protocols to make sure they match

7. Replacement Parts

Part Number	Description
MH12R96201G	AC110V/DC24V 2.0A Power adapter
MH12R96202G	10m RS232 communication cable

8. One Year Limited Warranty

MeasureTek products covered in this manual are guaranteed to be free from defects in material and workmanship for a period of one year after date of purchase. Misuse, accidental damage, overload, alteration, and improper installation are expressly excluded. Any product which is determined to be defective in material or workmanship within this time period may, as the exclusive remedy, be returned to an authorized MeasureTek distributor or service center, freight prepaid with prior return authorization, to be repaired or replaced at the manufacturer's option. MeasureTek's liability under this warranty is limited to the repair or replacement of the defective product and in no event shall MeasureTek be liable for consequential or indirect damages.