



RD65
User/Technical
Manual

Contents subject to change without notice

Version 1.3
05/2016



TABLE OF CONTENTS

| | |
|---|----|
| 1. INTRODUCTION | 1 |
| General Information | 1 |
| Specifications | 1 |
| Contents | 1 |
| 2. Installation | 2 |
| Display Setup | 4 |
| 3.1 Protocol Format Details | 5 |
| 1. Connection and Wiring Details | 9 |
| RS232 Interface connection | 9 |
| RS485 Interface connection | 9 |
| 2. Symbols Defined: | 9 |
| 3. Troubleshooting | 10 |



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 | RD65 |
|--------------------------------------|---|
| Communication Interface Types | RS232 |
| | RS485 |
| Data format | 8N1, 7E1,7O1 selectable |
| Baud rate | 1200bps~115200bps selectable |
| Protocols | 14 Selectable fixed Protocols |
| Display Contents | Net/Gross, kg/lb indicators, weight data |
| Display Type | Ultra-bright LED display with 6 digits, 5" high, 7-segment digits |
| Display Range | -99,999 to 999,999 |
| Operating Temp. | -5° to 160°F (-20° to 70°C) |
| Power Supply | 11V-32V DC adaptor |
| Waterproof Grade | IP65 |

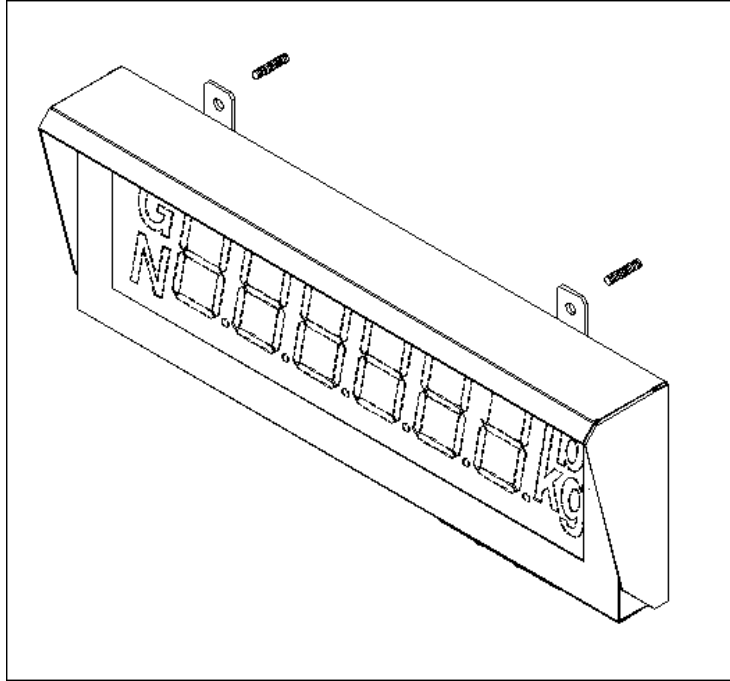
Contents

- RD65 remote display
- DC24V 2.5A UL adaptor
- Quick Guide & Technical Manual
- RS232 10m communication cable
- 2A fuse

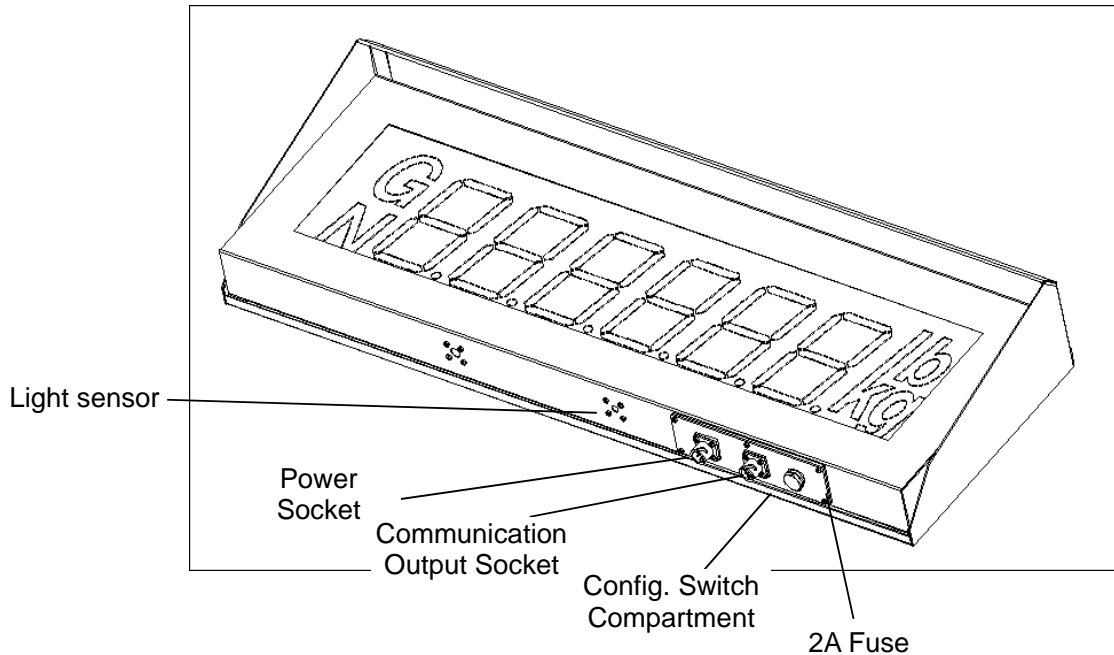
Brecknell

2. Installation

1. Install the remote display through the hanging holes on wall with two M12 or 1/2" screws. (Hanging hole's diameter is 13mm). Ensure secure mounting before proceeding.



2. Interface



Brecknell

3. Open the cover of “Config Switch Compartment” for configuration switch settings prior to use if necessary. See “**Display Setup** section”. (defaulted setting: **Baud rate 9600, data form 8N1, Protocol format 3.1.5, Communication port RS232**)

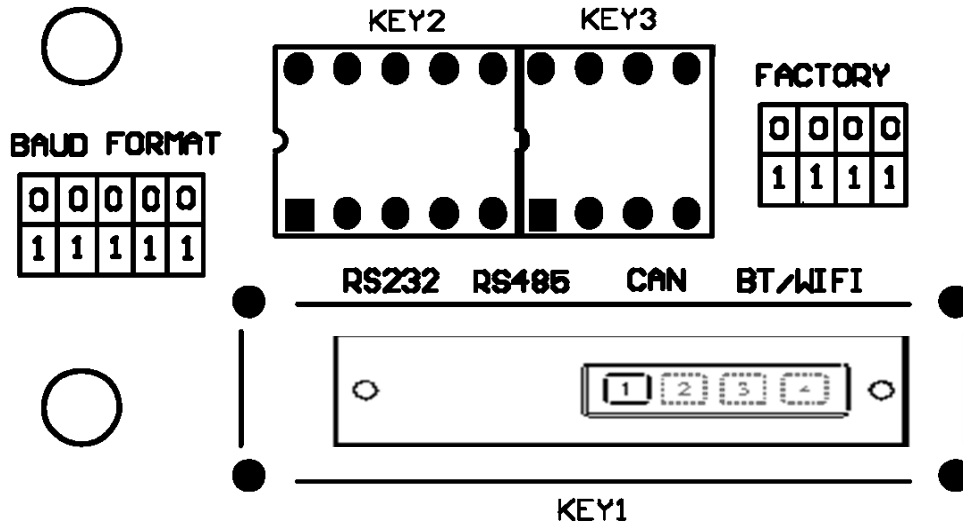


4. Attach power and communication cables. **DO NOT** power on until after completing step 4.



Brecknell

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 | 1200 | 0 | 0 | 8N1 | 0 | 0 | 0 | 0 | Format: 3.1.1 | Position1 | RS232 |
| 0 | 0 | 1 | 2400 | 0 | 1 | 7O1 | 0 | 0 | 0 | 1 | Format: 3.1.2 | Position2 | RS485 |
| 0 | 1 | 0 | 4800 | 1 | 0 | 7E1 | 0 | 0 | 1 | 0 | Format: 3.1.3 | Position3 | CAN (if avail.) |
| 0 | 1 | 1 | 9600 | 1 | 1 | 7E1 | 0 | 0 | 1 | 1 | Format: 3.1.4 | | |
| 1 | 0 | 0 | 19200 | | | | 0 | 1 | 0 | 0 | Format: 3.1.5 | Position4 | Bluetooth (if avail.) |
| 1 | 0 | 1 | 38400 | | | | 0 | 1 | 0 | 1 | Format: 3.1.6 | | |
| 1 | 1 | 0 | 57600 | | | | 0 | 1 | 1 | 0 | Format: 3.1.7 | | |
| 1 | 1 | 1 | 115200 | | | | 0 | 1 | 1 | 1 | Format: 3.1.8 | | |
| | | | | | | | 1 | 0 | 0 | 0 | Format: 3.1.9 | | |
| | | | | | | | 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 | | |

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></><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><S
P> <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><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



Protocol Format Details (continued)

3.1.4. Data Format Example: 123456lb, transmit data format of **Dillon ED Dynamometers and FBI521**:

"Print Format # 1"

<SP><1><2><3><4><5><6><SP></><f><CR><LF>

<SP><1><2><3><4><SP></><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

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

<SP><SP><SP><SP><3><8><0><.><5></><FF><ETX><LF>

<SP><SP><SP><3><8><0><.><5></><CR><LF>H1H2H3H4<CR><ETX><LF>

<SP><SP><SP><SP><SP><3><8><0><.><5></><CR><LF>H1H2H3<CR><ETX><LF>

<SP><SP><SP><SP><3><8><0><.><5></><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: **WI127** transmit data

<SP><G><SP><1><0><0><0><0><0><SP><lb><CR><LF>

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

<SP><G><-><9><9><9><9><SP><|><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)





Protocol Format Details (continued)

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

<LF><SP><SP><G><SP><SP><SP><-><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)

3.1.8. 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)

3.1.9. 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)

3.1.10. 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)





Protocol Format Details (continued)

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

RD65 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)

3.1.12. 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)

3.1.13. 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)

3.1.14. 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)

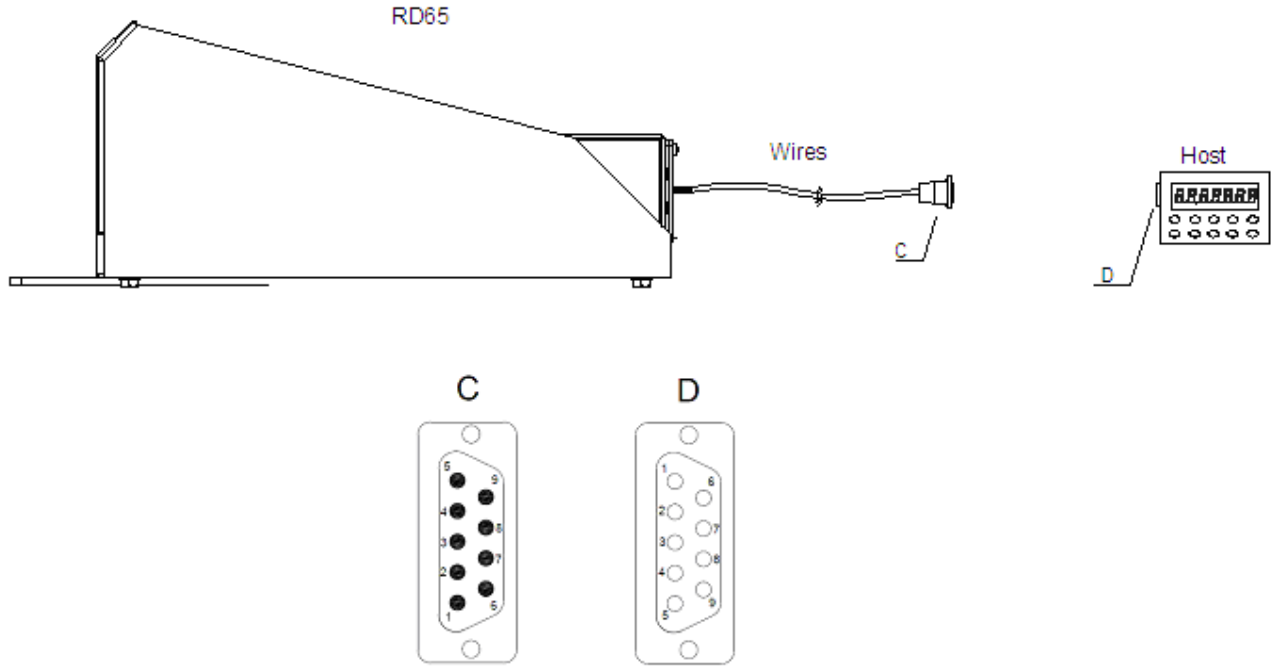
<CR> Carriage Return character (0dhex)

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 RD65 will display the indicated weight from the host.





1. Connection and Wiring Details



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 |

2. Symbols Defined:

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



3. 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 |
| Err01 (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 |
| Err02 (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 RD65 and Host protocols to make sure they match |