RANGER INSTRUMENTS

6500

Quick Start Manual

For use with software versions 1.5+

6500-601 Rev 1.1

Introduction

The **6500** is a member of the latest generation of Ranger remote displays.

Features

- Six digit electromechanical alpha-numeric display
- Annunciators for Net/Motion/Center of Zero
- Two independent serial ports supporting RS232, RS422 and 20mA Current Loop (active and passive)
- Auto baud / auto select data source
- User programmable serial data formats
- Support for Ranger Networking/Summing and Modbus ASCII

Manuals

The Quick-Start Manual (this document) is intended for use by installers familiar with the Ranger **6500**. The other manuals covering the **6500** are:

- **6500** Reference Manual (6500-600);
- **6500** Operators Manual (6500-602);
- **6500** Mounting Options Manual (6500-603).

These manuals are available for download from the Ranger Instruments web site:
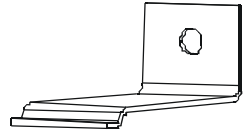
www.rangerinstruments.com.

Warning ⚠ DISCONNECT POWER BEFORE OPENING

The **6500** contains high voltages. Disconnect the AC power supply before opening the unit.
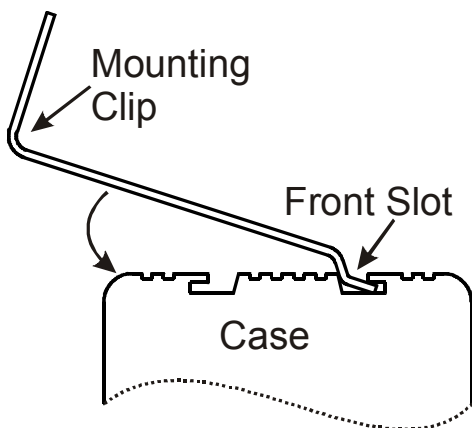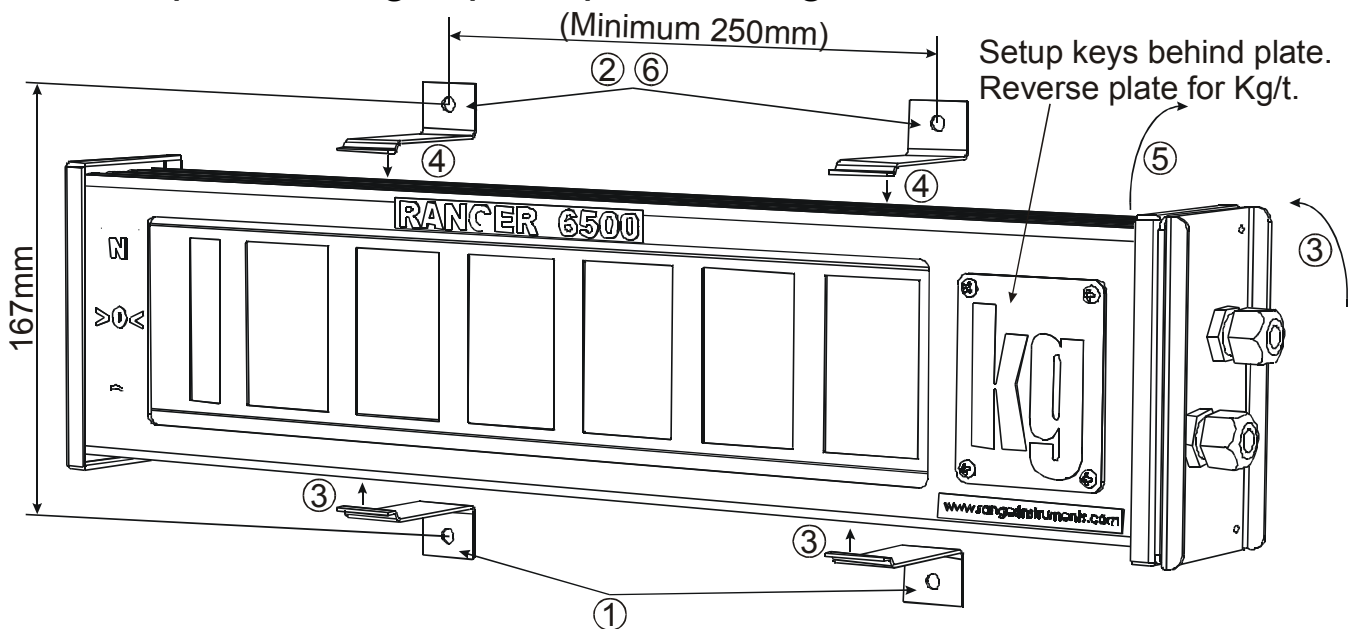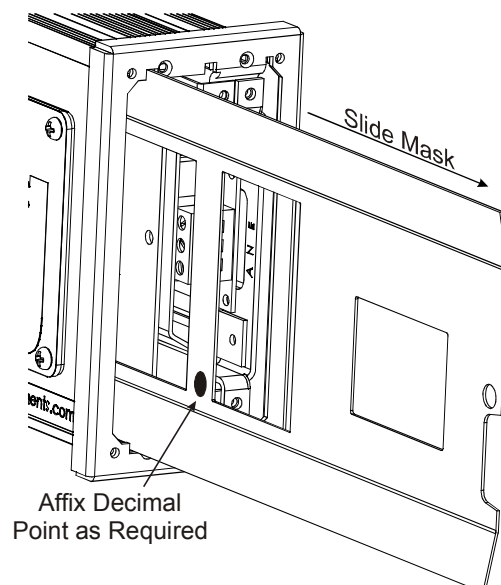
Installation

Wall Mounting

Using the four mounting clips shipped with the unit, follow the instructions below:

1. Attach lower mounting clips to wall using 6mm or 1/4" bolts
2. Predrill top holes, but do not attach mounting clips
3. Angle top out and insert lower mounting clips into front track
4. Insert two top mounting clips into front track
5. Rotate top toward wall, until top mounting clips touch the wall
6. Fix top mounting clips in place using 6mm or 1/4" bolts

(Minimum 250mm)

② ⑥

④

④

Setup keys behind plate.
Reverse plate for Kg/t.

⑤

③

167mm

RANGER 6500

kg

www.rangalinstruments.com

③

③

③

①

Mounting Clip

Front Slot

Case

Fitting a Fixed Decimal Point

Slide Mask

Affix Decimal Point as Required

Power Connection

The **6500** operates from an AC power source between 110 VAC and 240 VAC. The power connection must be performed under the requirements and regulations of your state laws.
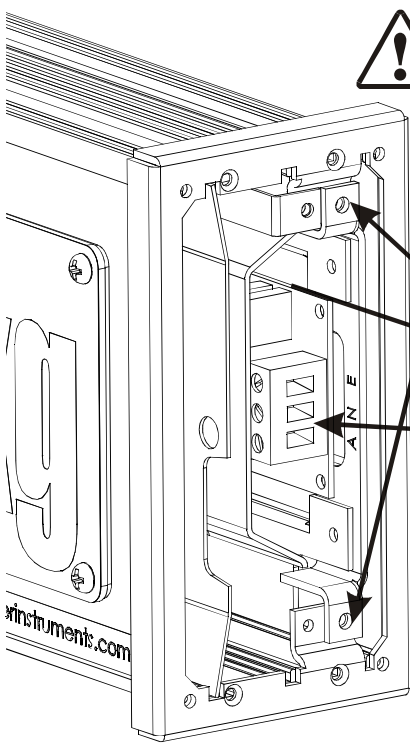
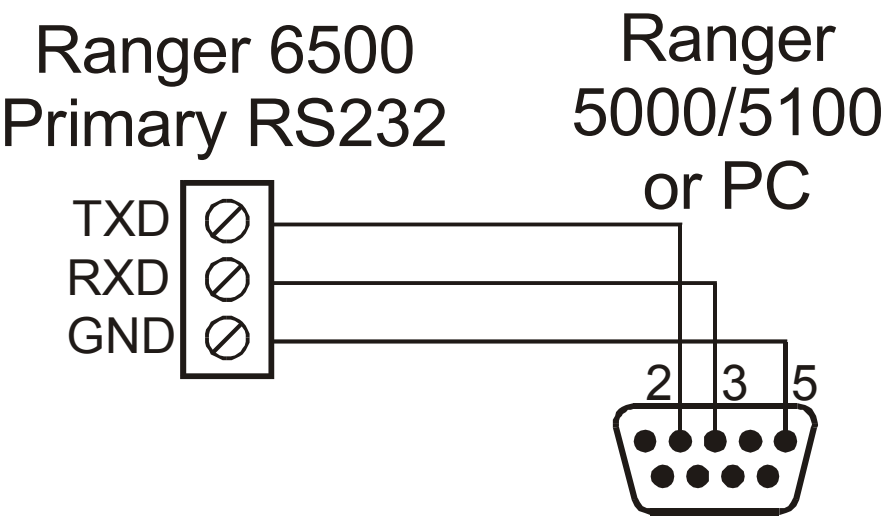Warning: The 6500 contains hazardous voltages. Disconnect power before opening.

1. Remove 2 Screws
2. Slide Power Supply Out
3. Connect AC Supply
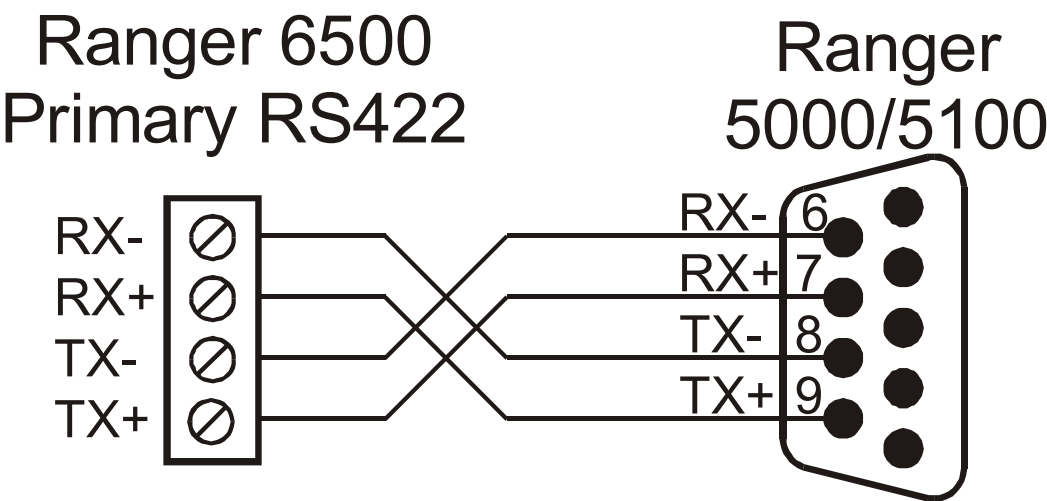4. Slide Power Supply In
5. Replace Screws

Serial Connections

Display PCB		
Primary Current Loop	EX+ L+ Shield L - EX-	
Primary RS232	TXD RXD GND	
Secondary RS422	RX- RX+ TX- TX+	
Primary RS422	RX- RX+ TX- TX+	

Current Loop (Primary)

EX+	+24v Supply
L+	Loop Data +
Shield	Case Connection
L-	Loop Data -
EX-	Supply Ground

RS232 (Primary / Secondary)

TXD	RS232 Transmit
RXD	RS232 Receive
GND	RS232 Ground

RS422 (Primary / Secondary)

RX-	RS422 Receive -
RX+	RS422 Receive +
TX-	RS422 Transmit -
TX+	RS422 Transmit +

Note the Secondary RS232 connector is located behind the units plate.

Secondary RS232

RXD
TXD
GND

2 3 5

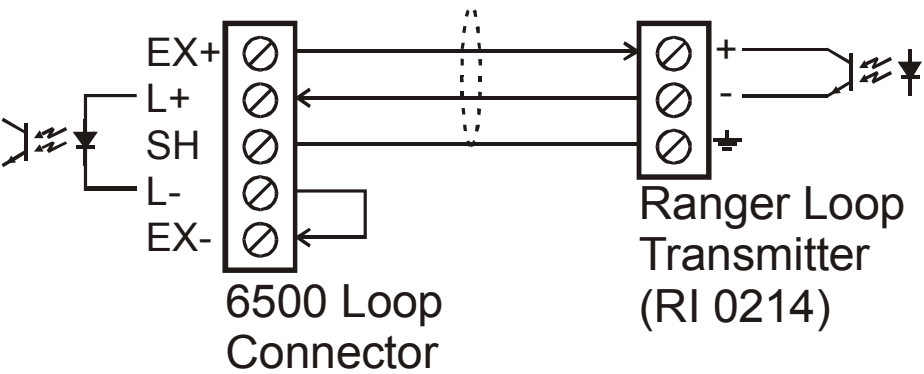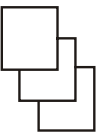# Remote Display Serial Wiring Diagrams

RS232

Ranger 6500
Primary RS232

Ranger
5000/5100
or PC

TXD
RXD
GND

2 3 5

RS422/RS485

Ranger 6500
Primary RS422

Ranger
5000/5100

RX-
RX+
TX-
TX+

RX- 6
RX+ 7
TX- 8
TX+ 9

20mA Current Loop

Connections
to a Passive
Loop Transmitter

EX+
L+
SH
L-
EX-

+
-

6500 Loop
Connector

Ranger Loop
Transmitter
(RI 0214)

Ranger and Supported Indicators

Press and hold the Group key ([GROUP]) until "Remote Setup 6500" appears.

GROUP	ITEM ▼	EDIT ►	To Enter
BRAnD	Configure remote display to operate from indicator type.	RngerA (Ranger A) * RngerC (Ranger C) * RngerD (Ranger D) * RngerE (Ranger E) * AVL130 (Avery L130) GDG C2 (Gedge C2) GDG C3 (Gedge C3) AD 4328 (A&D AD4328) AD EP (A&D EP) AD4531 (A&D AD4531) AD HV (A&D HV) TOLEDO (Toledo) AVERY (Avery L105/L200) BARLO (Barlo) PHLPS (Phillips 1577, 1627) LODEC (Lodec) UMC600 PCMODE	Default setting: [ ] ITEM ▼

Notes on Ranger Indicators

*Ranger Auto Output Strings

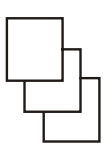| RngerA	STX Sign Weight(7) Status ETX
RngerC	STX Sign Weight(7) S1 S2 S3 S4 Units(3) ETX
RngerD	STX Sign Weight(7) ETX
RngerE	STX Sign Weight(7) S5 Units(3) Mode(4) ETX

Operation with Ranger Indicators
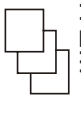
The **6500** is designed to operate with Ranger Auto Output Format A (Rnger A), regardless of other user configured indicators.
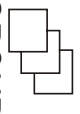

Non-Supported Indicators
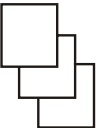
If the indicator is not provided in the list on page 5, then a custom format string must be constructed using parsing tokens. The format string is then entered in one of the four programmable blocks (BLOCK:BLK1 - BLOCK: BLK4). The process of constructing format strings is beyond the scope of this manual, and is covered in the Reference Manual.

Non-Supported Indicators

Press and hold the Group key (🔲GROUP) until "Remote Setup 6500" appears.

GROUP	ITEM ▼	EDIT ▶ To Enter	Default setting: [ ]
SERIAL	**SRC** Data source	[**SCAn**], RS232, RS422, Loop	▼ ITEM
	BAUD Baud rate	[**AUTO**], 300, 600, 1200, 2400, 4800, 9600, 19200	▼ ITEM
	BITS Serial format configuration	[**n81-**]	▼ ITEM
		n 8 1 -	
	ITEM to change position, EDIT to change digit.	Parity Databits Stopbits Network none 8bits 1stop -none Odd 7bits 2stop Term Even	
	ADDR Set the address of the serial port for use with PC Mode	[**00**] - 99	🔲GROUP
OPTIOn	**TimE.O** Data time out to show error	[**5**], 10, 20, noTMO (no time out)	▼ ITEM
	ShoWDp Show decimal point	[**YES**], NO	▼ 🔲GROUP

Non-Supported Indicators (continued)

GROUP ▢	ITEM ▼	EDIT ► Default setting: [ ]	To Enter
BLOCK	**BLK 1-BLK 4** — Configurable data blocks	**Refer to token list**	Hold ▢ GROUP
	EnABLE — Enable/disable data blocks	[R, 1, 2, 3, 4] ITEM to change position, EDIT to enable/disable	GROUP ▼
	PRESET — Preset brand to different blocks	Select format to preset: [1], 2,3,4	ITEM ▼
	RESET — Reset blocks to defaults	Select indicator (Refer to Ranger and Supported) [ConT n] / ConT Y	ITEM ▼
-End-	**SAVING SAVED** Exit setup **NoSAVE** (If data not changed)		ITEM ▼

6500 Configuration Using Viewer

Configuration of the **6500** can be performed using the Ranger 6500 Viewer software for Microsoft Windows. The **6500** must be connected to the PC using the secondary RS232 port located behind the units plate. Wiring requirements for the cable are given below. The secondary serial port must be configured as a Network Slave, however this is the default operation of this port.

The Viewer software provides a simulation of the display and allows remote operation of the keys from the PC. Configuration settings of the **6500** can be written to and read from the display. In addition, settings can be altered as necessary and may also be written to file.

Viewer Cable

Ranger 6500
Secondary RS232   PC

2 3 5   2 3 5
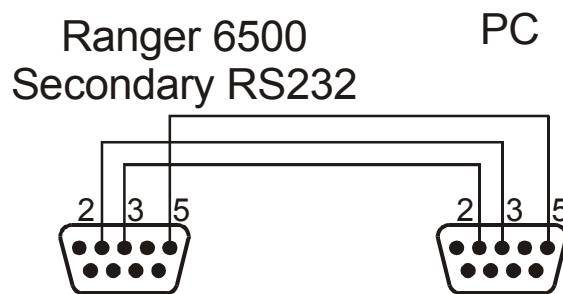
Other Operating Modes

The configuration of these modes is beyond the scope of this manual. Please refer to the Reference Manual for a full description. These modes are available from the Serial Setup menu, accessed by holding the ▶ key, and selecting the required mode.

Summing Network Master

The **6500** queries and sums the weight of a number of slave **5000** / **5100** units connected together on a multi-drop RS422/RS485 bus. The resulting total weight is displayed on the **6500**.

Ranger 1200 Remote Display

This mode converts the raw counts output from the Ranger **1200** and display a weight reading.

Secondary Port Functions

These options are available from the General menu (GENRL SETUP), accessed by holding the ▲ key.

Network Slave

This mode allows a PC/PLC to operate the display using the Ranger Networking commands. The Windows Viewer software requires this mode.

Modbus Slave

The 6500 can be configured to operate as a Modbus ASCII slave, allowing a PLC to operate the display.

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Error Messages

Configuration Errors

Error	Description
ER.DAT	There is no data being received by the unit.
ER.RX	The baud rate/parity or stop bits are incorrect.
ER.ETX	No ETX character was found in the data stream.
ER.FLD	The data stream does not match any format.
ER.LEN	The field to be displayed is longer than 6 digits.

Weighing Errors

(U-----)	The weight is below the minimum allowable weight reading.
(O-----)	The weight is above the maximum allowable weight reading.
(------)	The weight being transmitted is invalid (as per remote indicator).

Operating Errors

Code	Error Description
E 0001	The power supply voltage is too low
E 0002	The power supply voltage is too high
E 0100	The digital setup information has been lost
E 0300	All setup information has been lost
E 0400	The factory information has been lost
E 0800	The EEPROM memory chip has failed
E 8000	The EPROM memory chip has failed

The "E" type error messages are in hexadecimal and are additive (eg 0900 = 0800 + 0100).

CE

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This document contains a general guide only of the operation of the product and shall not form any contract. The specifications of the product may be altered without notice.

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