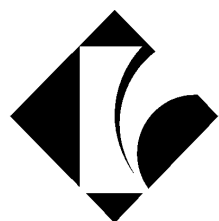


SMART WEIGHING SOLUTIONS



rinstrum

300 Series
(K367)
Reference Manual

Copyright

All Rights Reserved. No part of this document may be copied, reproduced, republished, uploaded, posted, transmitted, distributed, stored in or introduced into a retrieval system in any form, or by any means (electronic, mechanical, photocopying, recording or otherwise) whatsoever without prior written permission of Rinstrum Pty Ltd.

Disclaimer

Rinstrum Pty Ltd reserves the right to make changes to the products contained in this manual in order to improve design,
performance or reliability.

The information in this manual is believed to be accurate in all respects at the time of publication, but is subject to change without notice. Rinstrum Pty Ltd assumes no responsibility for any errors or omissions and disclaims responsibility for any consequences resulting from the use of the information provided herein.

SMART WEIGHING SOLUTIONS



Table of Contents

1.	INTRODUCTION	2
1.1.	Features	2
2.	INSTALLATION	3
2.1.	Introduction	3
2.2.	General Warnings	3
2.3.	Electrical Safety.....	3
2.4.	Cleaning	3
2.5.	Panel Mount Template	3
2.6.	Cable Connections	3
2.7.	DC Power (DC PWR +, DC PWR -).....	3
2.8.	Slave instrument Connections	4
2.9.	Outputs.....	5
3.	OPERATION	6
3.1.	Navigation between modes	6
3.2.	Mimic Mode.....	6
3.3.	Total Mode	8
4.	SETPOINTS	10
4.1.	Mimic mode*.....	10
4.2.	Total mode*	10
5.	SETUP.....	11
5.3.	Saving and Exiting setup	11
5.4.	Setup Menu	11
5.4.1.	SET.PTS (Set points)	11
5.4.2.	AUT.OFF (Auto Off).....	11
5.4.3.	TOT.OPT (Total option).....	11
5.4.4.	B.LIGHT (Backlight Operation)	12
6.	APPENDIX – DIMENSIONS	13
7.	ERROR MESSAGES.....	14

1. Introduction



Figure 1: Indicator

This instrument is used to mimic 300 series and T610/T620 indicator families. K367 firmware has two modes of operation:

- Mimic Mode
- Total Mode

A single indicator or multiple indicators can be connected in a ring network to the K367 mimic instrument. Either mimicking a single indicator or viewing total of the set can be done via the master instrument.

The mimic instrument may be operated from 4.8V, 7.2V, 9.6V, 12V or 24V batteries or a DC power source from 7V to 24V.

1.1. Features

- Allow for maximum of 31 slave units.
- Auto baud rate selection between 9600 and 38400.
- License code entry on start-up if not licensed.
- Auto address setting for T610/T620 weighing transmitters.
- Two isolated transistor outputs with status display on the front panel.

2. Installation

2.1. Introduction

The following steps are required to set up the indicator.

- Inspect indicator to ensure good condition & appropriate firmware.
- Use connection diagrams to wire up power and auxiliary cables as required.
- Use the panel mount template provided for hole locations.
- Connect Power to indicator and press **<POWER>** key to turn the instrument on.

2.2. General Warnings

- Indicator not to be subject to shock, excessive vibration, or extremes of temperature (before or after installation).
- The instrument should be installed away from any sources of excessive electrical noise.
- For full EMC or for RFI immunity, termination of cable shields and correct earthing of the instrument is essential.

2.3. Electrical Safety

- For your protection all mains electrical hardware must be rated for environmental conditions of use.
- Pluggable equipment must be installed near an easily accessible power socket outlet.
- To avoid the possibility of electric shock or damage to the instrument, always switch off or isolate the instrument from the power supply before maintenance is carried out.

2.4. Cleaning

To maintain the instrument, never use harsh abrasive cleaners or solvents. Wipe the instrument with a soft cloth **slightly** dampened with warm soapy water.

2.5. Panel Mount Template

Use the panel mount template for drill hole locations. The template indicates positions for the two 4mm mounting screws through the panel. Also displayed on the template is the position of the rectangular hole that should be cut to allow for the connection of cables. The template supplied with the indicator allows for front or rear machining of the panel.

2.6. Cable Connections

All cable connections are made to the rear of the instrument using screwless terminals. Wires must be stripped of insulation by at least 10mm. To install, depress the orange lever beside the terminal required and push wire into the hole. Release the lever and pull gently on the wire to ensure it is securely trapped in the terminal. It is not necessary to tin the ends of the wire with solder or to add crimp ferrules to the wires, however, these techniques are also compatible with the terminals and may ultimately make for a neater job.

2.7. DC Power (DC PWR +, DC PWR –)

The DC supply need not be regulated, provided that it is free of excessive electrical noise and sudden transients. The instrument can be operated from a high-quality plug-pack as long as there is sufficient capacity to drive the instrument.

If an optional battery pack is fitted, then the supplied charging system must be used.

2.8. Slave instrument Connections

Instruments can be configured in a Ring Network.

When operating in a Ring Network, the slave Instruments must have:

- same serial port options, i.e., baud, parity, data bits, stop bits;
- Unique addresses on each indicator
- K342 is not compatible with K367 mimic

The T610\T620 weighing transmitters will be configured with unique addresses automatically by the master instrument.

All R320s\X320s in ring network should be manually configured for different addresses.

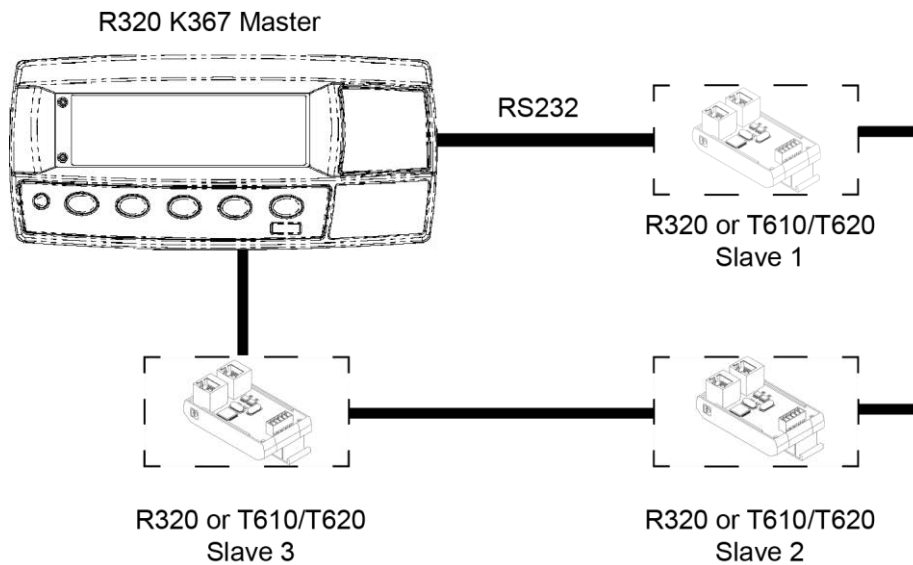
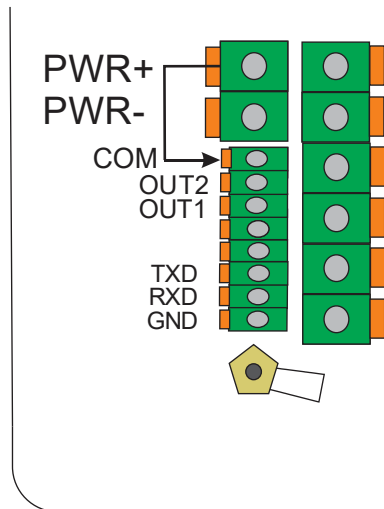


Figure 2: Slave units in a Ring Network

2.9. Outputs

To drive external loads (e.g. wireless accessory), connect a short jumper from PWR+ to COM. This will provide source power to OUT1 or OUT2 for accessory power. This works well for low power cut the cable Bluetooth options.

Figure 3: Instrument Outputs

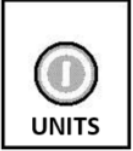


3. Operation

There are 2 modes of operation, Mimic and Total mode. Following sections describes how to navigate between each mode and operate in each mode.

Note: Apart from the 2 operation modes the instrument automatically detects if there is only one slave or multiple slaves are connected.

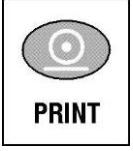
If only one slave is connected the operation mode automatically switch to Mimic mode. Refer [Mimic Mode](#) section for operation details.

	<p>The <POWER> key is used to turn the instrument on and off. To initially turn the instrument on, press and hold the <POWER> key.</p> <ul style="list-style-type: none"> • Display segments will light and then clear. • Software Version (e.g. V4.0). <p>To turn the instrument off, press and hold the <POWER> key for three seconds. The instrument will display OFF followed by the 3s countdown.</p>
---	--

3.1. Navigation between modes

The navigation between 2 modes are done using **<PRINT>** key.

PRINT Key


	<p>Press <PRINT> key to see what scale is selected. The instrument will display the current selection and after 0.5 second time out returns to show the selected slave's weight.</p> <ul style="list-style-type: none"> • 'SCL 1' – 'SCL31' will be display for mimic mode • 'total' will display for total mode <p>Press <PRINT> key multiple times to change selection. If you press <PRINT> key before time out of 0.5 seconds the next scale will be selected. Wait for 0.5 seconds once the desired slave unit is selected to access that scale mimic/ total mode.</p> <p>Long press will go to total mode automatically if there is more than one scale.</p> <p>'total' option can be omitted when press <PRINT> key multiple times by changing the 'Total option' settings. Refer TOT.OPT (Total option) for details.</p>
---	--

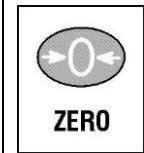
3.2. Mimic Mode

Mimic mode consists all the LCD information about a connected slave unit. One slave unit can be mimicked at a time. Use **<PRINT>** key to change selected slave unit. Refer [Navigation between modes](#) section for more details on switching between slaves.

- Zero, Tare and select keys can be pressed remotely.
- Slave's setpoints are mimicked in Master indicator.

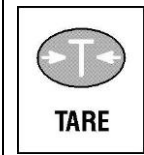
POWER Key

	<p>A remote <POWER> key press will be sent to the slave unit.</p>
---	--

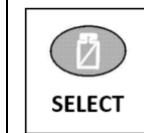
ZERO Key

A remote <ZERO> key press will be sent to the slave unit.

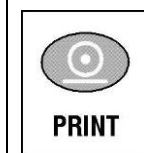
Long press: A remote <ZERO> key long press will be sent to slave unit.

TARE Key

A remote <TARE> key press will be sent to the slave unit.

SELECT Key

A remote <SELECT> key press will be sent to the slave unit.

PRINT Key

When only one slave is connected:

A remote <PRINT> key press will be sent to the slave unit.

If there are more than one slave:

When in setup menu of the slave, the primary function of the <PRINT> key will work. Refer the slave unit reference manual for more information.

In other instances, <PRINT> key operates as the key to navigation between Mimic and Total modes. (Refer [Navigation between modes](#) section).

FUNCTION Key

If F.KEY is set to ON;

A remote <FUNCTION> key short and long press will be sent to all slave units.

If F.KEY is set to OFF;

When any output is turned on in the Master instrument <FUNCTION> key press will turn off the Master outputs.

Refer [SETUP F.KEY](#) for more details

Note: Only the Master instrument output will be turned off. No change will happen to Slave outputs.

Refer [Setpoints](#) section for details.

In setup menu of the slave, the primary function of <FUNCTION> key will work.

Long press: A remote <FUNCTION> key long press will be sent to slave unit.


3.3. Total Mode

Total mode shows summation of the weight of all slave units in ring network.

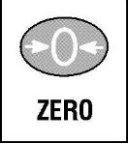
Following settings\modes of all the slave units must be same.

- Decimal points
- Gross\Net mode
- Units


POWER Key

	<p>A remote <POWER> key press will be sent to all the slave units.</p>
---	--

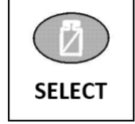
ZERO Key

	<p>A remote <ZERO> key press will be sent to all the slave units.</p>
---	---


TARE Key

	<p>A remote <TARE> key press will be sent to all the slave units.</p>
---	---


SELECT Key

	<p>A remote <SELECT> key press will be sent to all the slave units.</p>
---	---

PRINT Key

	<p>Refer Navigation between modes section to view functions of the <PRINT> key.</p>
---	---

FUNCTION Key

	<p>If F.KEY is set to ON; A remote <FUNCTION> key short and long press will be sent to all slave units. If F.KEY is set to OFF; When any output is turned on in the Master instrument <FUNCTION> key press will turn off the Master outputs. Refer SETUP F.KEY for more details</p>
---	---

	<p>Note: Only the Master instrument output will be turned off. No change will happen to Slave outputs.</p> <p>Refer Setpoints section for details.</p>
--	--

4. Setpoints

The instrument is capable of working with two internal setpoints. The status of these setpoints are displayed on the LCD. Each setpoint is associated with a physical output driver but it may also be simply used as an indicator.

Setpoints operates differently for the 2 operations modes.

4.1. Mimic mode*

The setpoint of Master instrument clones the state of the slave unit.

The Master setpoint status can be cleared by pressing **<FUNCTION>** key. This will only turn off the setpoints of the master indicator and will not affect the slave unit.

Refer reference manual of slave unit for information on setpoints.

4.2. Total mode*

Setpoints in Total mode only work with T610\T620 weighing transmitters.

- Outputs are off if all slave outputs are off.
- If any of slave's output turns on then master output will turn on.
- The Master setpoint status can be cleared by pressing **<FUNCTION>** key. This will only turn off the setpoints of the master indicator and will not affect the slave unit. Output won't turn on again unless the slave output is removed and reapplied.

NOTE: Each setpoints can be permanently turn-on by setting setpoint mode to ON. Refer [SET.PTS \(Set points\)](#) section.

NOTE: in setup menu F.KEY should be set to OFF to use function key for control setpoints. Refer [F.KEY \(Function key mimic\)](#)

*NOTE: If multiple units are connected then the decimal position, units annunciator & Gross/Net status must be the same otherwise a SYNC error will occur.

5. Setup

The instrument digital setup facilities provide the means to configure the instrument.

5.1. Accessing Setup

Setup menu can be access via short press of rear setup button.

5.2. Setup Display Prompts

When accessing Setup, the instrument will beep thrice and then display the following:

- SETUP
- The title of the first Group (i.e. SET.PTS) will then be displayed.

5.3. Saving and Exiting setup

To save settings, exit setup and return to the normal mode use following method:

Press the <GRP> key repeatedly. When - **End** - displays press <OK>.

5.4. Setup Menu

5.4.1. SET.PTS (Set points)

SETPT.1 (Setpoint 1)	Set point 1 operating mode setting. See Setpoints section in page 10 for more details. Options: AUTO, ON Default: AUTO
SETPT.2 (Setpoint 2)	Set point 2 operating mode setting. See Setpoints section in page 10 for more details. Options: AUTO, ON Default: AUTO

5.4.2. AUT.OFF (Auto Off)

The instrument can be set up to automatically power down after a period of no activity only when operating on batteries. Weight motion or any press of the keyboard is enough to keep the instrument powered on.

Options:

NEVER: Never power off automatically, 1, 5, 10, 30 (time in minutes)

Default: Never

5.4.3. TOT.OPT (Total option)

This is to enable 'total' option to be displayed in <PRINT> key multiple time press.

Options:

ON: multiple press of <PRINT> key can be used to navigation between mimic and total mode

OFF: multiple press of <PRINT> key can **only** be used to navigation between slave units. Total mode can be access via long press on <PRINT>.

Default: ON

5.4.4. B.LIGHT (Backlight Operation)

Sets the operation of the backlight. When operating the backlight with batteries the brightness is lowered automatically to conserve power and the backlight will automatically turn off after 10 seconds of inactivity. To turn on again, press the <POWER> key.

Options:

OFF: Backlight is off.

ON: When operating with batteries backlight is on when weight motion, network communications or any keypress is detected. Otherwise backlight will permanently ON

FORCED: Backlight is permanently on in any mode of operation.

Default: ON

5.4.5. F.KEY (Function key mimic)

This allows to control mimic operation of function key short press.

Options:

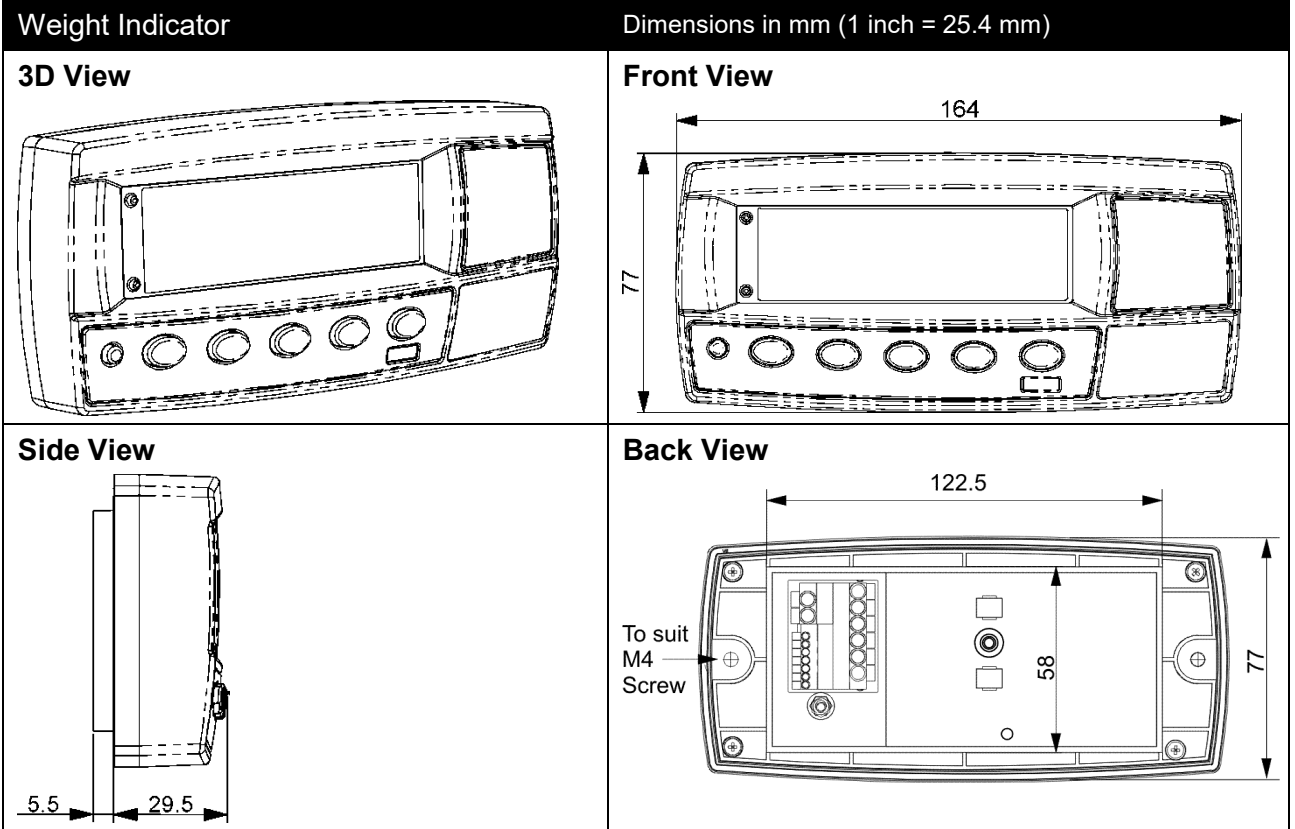
OFF: Remote key press disabled and function key works as master setpoint controller. Refer [Setpoints](#) section for more details.

ON: A remote <FUNCTION> key press will be sent to the slave unit when short press of <FUNCTION> key.

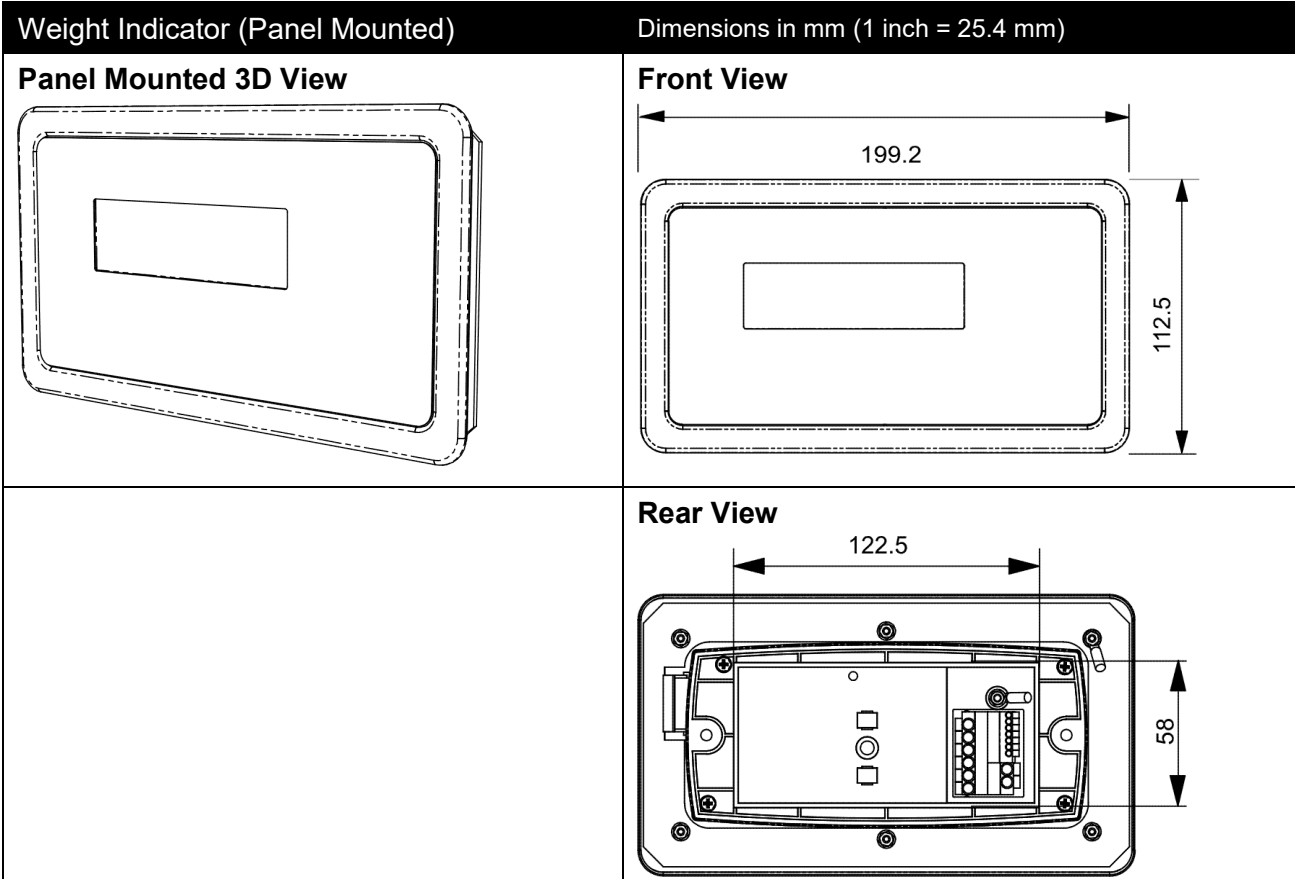
Default: OFF

6. Appendix – Dimensions

R320



R323



7. Error Messages

A number of error messages may be displayed to note interruptions to operation. These messages are described below.

When in Mimic mode extra diagnostic errors will be shown depending on the slave unit. Refer slave unit reference manual for details.

Error	Description
"-Err-"	Data absent. Data not available up to 5 seconds. Ring network error.
"Add.Err"	Address error. If more than one slave has same address.
"Exxxx"	Error in one of slave units. This is not an error in master. Refer reference manual of the slave unit.
"SYN.Err"	All slaves are not in same gross or net state.
"UNT.Err"	All slaves do not have the same unit of measure.
" dp.Err"	All slaves do not have the same number of decimal points.
"O-----"	Overload one of the slave units in the network.
"U-----"	Underload one of the slave units in the network.