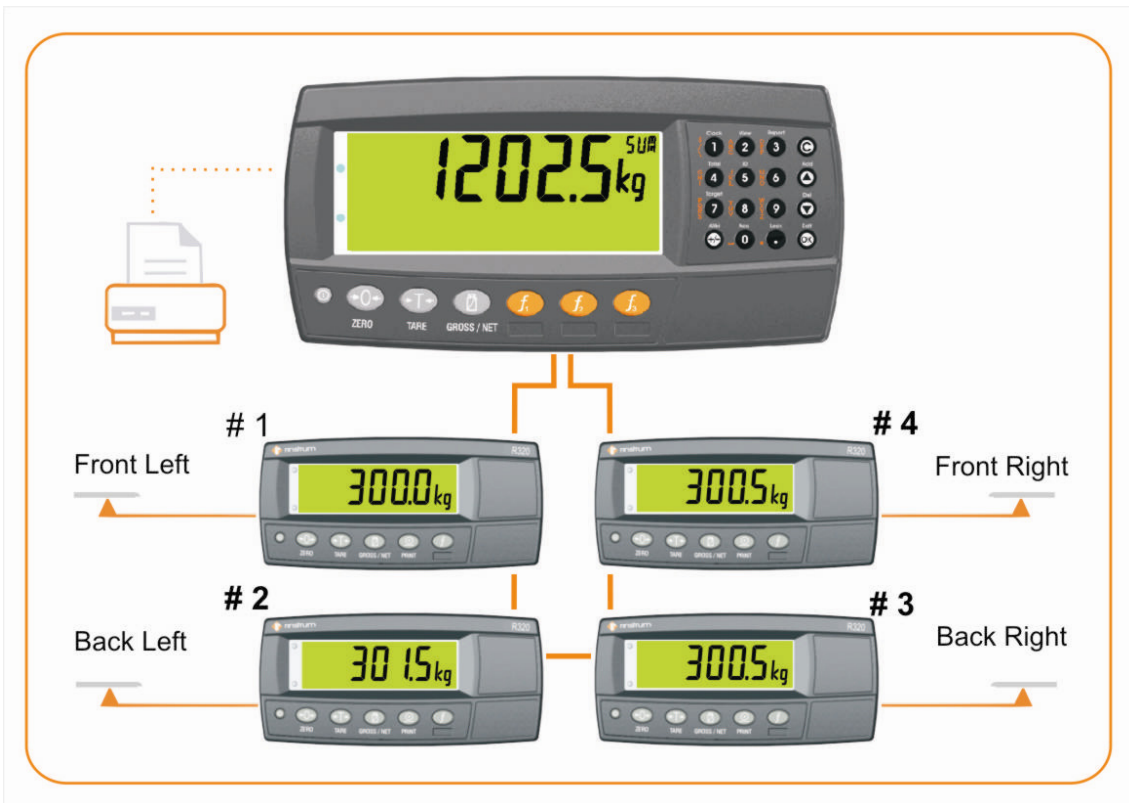# Application Note: R420-K481 Summing R320s – Car Balancing

Application:

- An R320-K302 is used on each of the four platforms each one weighing an individual wheel.
- The R420-K481 provides the summing and sub-total information.
- The R320s are networked using an RS232 ring network.
- The RS232 ring can work back to either the built-in RS232 serial port or an RS232 port on a module on the R420-K481. In this example the built-in RS232 has been used.
- R420-K481 summing unit function key is set to step through individual weights and subtotal weight.
  - o Individual - Front Right/Front Left/Back Right/Back Left
  - o Subtotals – Front Axle/Back Axle/Left Side/Right Side
- An RS232 serial module on the R420-K481 could be used to support a printer

Typical Applications:
- Car balancing systems
- Aircraft weighing
- Medical bed weighing applications
- Ship yard centre of gravity ballast determination

Components:

R420-K481-A or
R42x Summing

M4201
**RS232/RS232 Module
Only if printer connection
is also required**

R320-K302-A
**R32x General Purpose
Indicator**

*Note either R420s ABS housing or R423s flush stainless steel housing could be used, similarly R320s or R323s could be used.
** Note R320-K304 V3.82+ or higher software is required.

Operation:

View Individual weight – scroll through using F1 key

| Front Left | Back Left | Back Right | Front Right |

View Subtotals – scroll through using F1 key
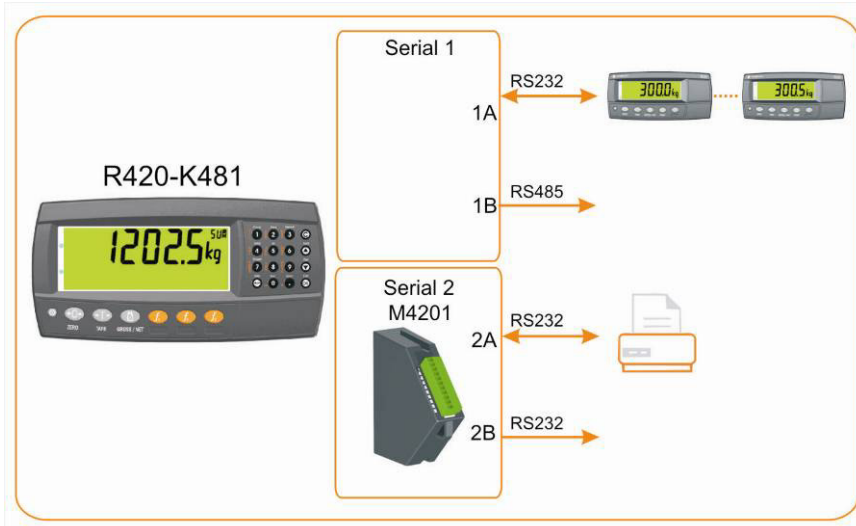

| Front Axle | Back Axle | Left Side | Right Side |

Note the main display always shows the legal summed weight.

Configuration:

K481 Configuration

To enter the setup mode, hold down the **Power** and **F3** key for a few seconds.

FUNC:NUM	2 or as required
FUNC:SF1	TYPE set to SLAVE KEY set to F1 or as required
FUNC:SF2	TYPE set to PRINT KEY set to F2 or as required
H.WARE:SER1.HW	BAUD set to the same baud rate as all the slaves PARITY to NONE DATA to 8 STOP to 1 DTR to OFF
SER.SUM:SERIAL	SER1A ** or to the serial port the slave will communicate with the master on
SER.SUM:PROTO	RING (sum R320s in RS232 ring)
SER.SUM:SLAVES	4 (to the number of slaves to be summed)
SER.SUM:SLAV.n	NAME set name on each as required Front Left Front Right

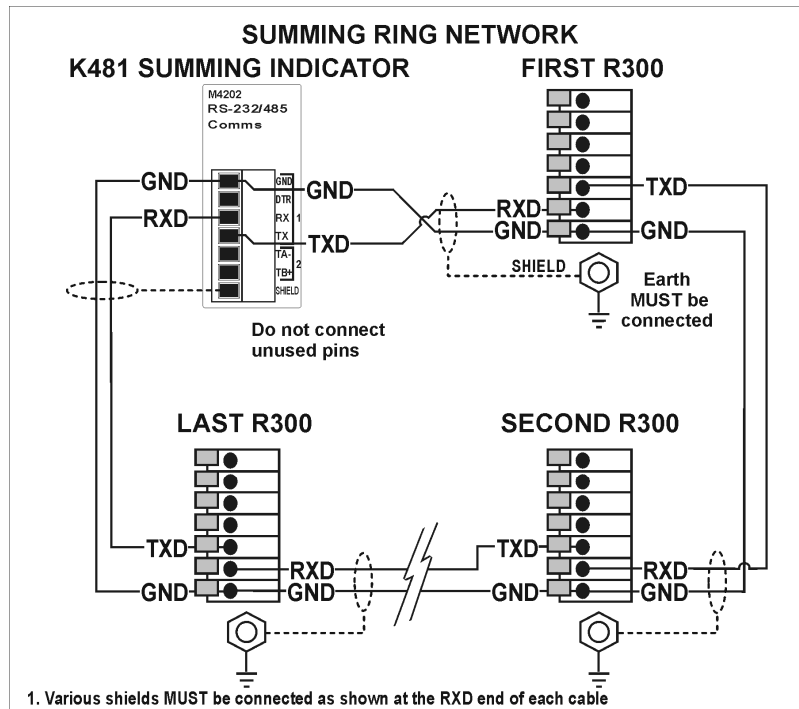|	
	Back Right
	Back Left
SER.SUM:S.TOT.n	NAME set subtotal names as required
	Front Axle/Back Axle/Left Side/Right Side
	SLV.ADD slaves added to subtotal
	Front Axle = 14
	Back Axle = 23
	Left Side = 12
	Right Side = 34
PRINT:PRINT1:SERIAL	**Connection to Printer** (other print settings to be set as required)
	SER2A

** Note that the SER.NET setting must be set to SER2A in this case. To verify hardware set up check the hardware HW allocation menu for CLASH?

R320 Configuration

To enter the setup mode, hold down the **Power** and F key for a few seconds.

SERIAL:TYPE	NET
SERIAL:BAUD	Set to the same baud rate as the summing indicator
SERIAL:BITS	N81-
SERIAL:ADDRESS	Set to a unique address between 1 and the number of slaves configured in the summing indicator – 1,2,3,4

RS232 Ring Network

Example communications on the RS232 ring network

Sent from R420-K481	Message after Unit 1 (Unit 1 weight 300.0kg)	Message after Unit 2 (Unit 1 weight 300.0kg & Unit 2 weight 301.5kg)	…
<DC2>20050148:<CR><LF> <DC4>	<DC2>20050148:<CR><LF> **81050148: 300.0G - kg<CR><LF>** <DC4>	<DC2>20050148:<CR><LF> 81050148: 300.0G - kg<CR><LF> **82050148: 300.5G - kg<CR><LF>** <DC4>	…

For further information refer to the Reference Manual for this product