Intercomp®

PT300
Users Manual

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Manual #: 700028-E

Table of Contents

Introduction

This manual contains specifications and operating instructions for the PT300 system.

Specifications

Controls

General:	On, Off, Print, lb/kg, Test/Zero, Local/Total, Hold/Rel, Lamp
Display:	0.5” 6 digit, LCD

Electrical

Voltage:	12 VAC,VDC
Batteries:	6 “AA” size alkaline or rechargeable ni-cad batteries
Fuse:	Type #1AG1A (little)

Performance

Accuracy:	±1.0% of applied load or ±1 display graduation, whichever is greater.
Divisions:	20,000 lb / 9350 kg: Graduation = 50 lb / 25 kg
Speed:	≈1 sec to typical reading (static)

Environmental

Temperature:	Operating: -20°F to 150°F / -28°C to 65° C Storage: -40°F to 170°F / -40°C to 75° C
Humidity:	10 – 95% non-condensing

Physical

Dimensions (PT300):	Overall: 3 x 16 x 20 in. / 76 x 406 x 508 mm Pad: 12 x 12 in. / 305 x 305 mm
Weight (PT300):	37 lb / 16.8 kg
Dimensions (PT300DW):	Overall: 3 x 26 x 20 in. / 76 x 660 x 508 mm Pad: 22 x 14 in. / 559 x 356 mm
Weight (PT300DW):	49 lb / 22 kg

Weights and Measures

The PT300 meets or exceeds class IIII standards for 400 division accuracy from 0 lb to 20,000 lb. The certification was completed by the National Type Evaluation Program (NTEP); in accordance with the National Institute of Standards and Technology (NIST) Handbook 44. A NTEP Certificate of Conformance Number 90-106P was issued under the National Conference of Weights and Measures.

Optional Equipment

120V Charger and Cable (100480)
120V plug in transformer with cable and PT connection.

220V Charger and Cable (100481)
220V plug in transformer with cable and PT connection.

120V Charging transformer (100545)
Plug in transformer providing DC output to charge scale.

220V Charging transformer (100546)
Plug in transformer providing DC output to charge scale.

1200 Baud Current Loop Output (100084)
Necessary if interconnecting scales, a scale to printer or a scale to remote display.

2 scale carrying case (100047)

4 scale carrying case (100048)

6 scale carrying case (100049)

15 ft. cable to printer or display (100537)

15 ft. cable to single scale (100538)

15 ft. interconnecting cable for 2 scales (100488)

Interconnecting cable for 4 scales (100489)
15, 25, 15 ft. spacing.

15 ft. interconnecting cable for 6 scales (100490)
15, 25, 15, 25, 15 ft. spacing.

Interconnecting cable for 2 scales and splitter box (100533)

Additional cable length for scale, printer, or display (100526)
Custom cable lengths if more than standard length is necessary.

PT300 Dummy pad (100088)
Cast aluminum replica.

PT300DW Ramp (100072)

Battery Operated Tape Printer (100090)
Prints weights only.

Battery Operated Portable Computer/Tape Printer (100091)
Prints Axle, Axle Group, Total weight, Time and Date, etc.

2 Channel Splitter Box (100092)
Necessary for printing axle weights with 4 scales. Part #100533 is also needed for every set of 2 scales to be interconnnected.

3 Channel Splitter Box (100089)
Necessary for printing axle weights with 6 scales. Part #100533 is also needed for every set of 2 scales to be interconnnected.

Interconnecting/Charging Cable:

	120V	**220V**
2 scale	100496	100497
4 scale	100498	100499
6 scale	100500	100501

2 Channel Indicator w/ Charger and Cables (100085)

4 Channel Indicator w/ Charger and Cables (100086)

6 Channel Indicator w/ Charger and Cables (100087)

Operations

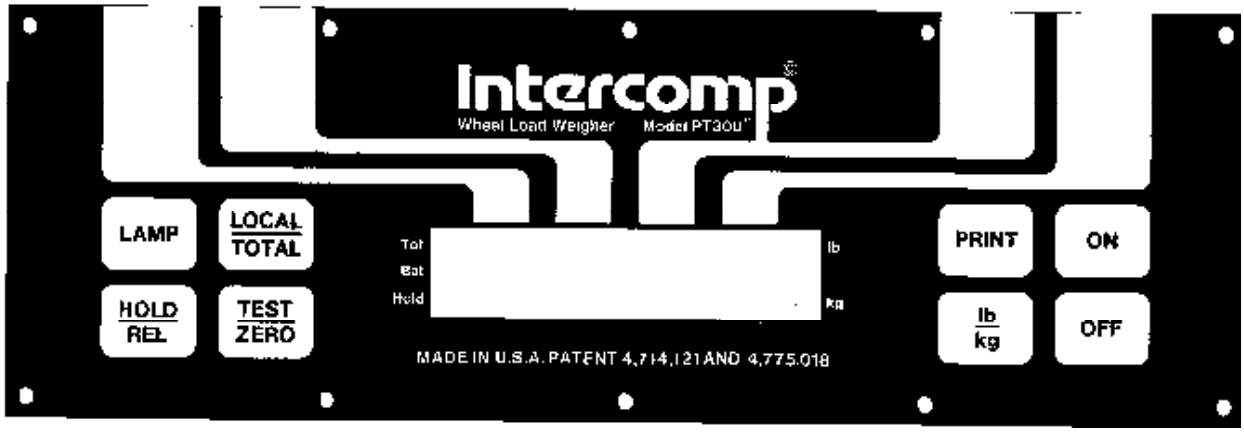


Diagram 1: PT 300 Keypad and Display

ON

Turns the scale on. The scale will test itself by activating all of the segments on the display and then zero itself. Occasionally the display will show EEEE0, this means that the scale is seeking zero. The display stays on EEEE0 while the scale is either in motion or has an unacceptable deadload**.**

OFF

Turns the scale off.

PRINT

If cabled for a demand output, this button transmits data via a cable to another scale, printer, display, etc..

lb/kg

Converts the weight on the scale from pounds to kilograms or vice versa. The indicating bars on the right side of the display indicate which mode the scale is in.

LOCAL/TOTAL

If more than one scale is cabled together, the scales can display the actual weight they are seeing (local), or the sum total weight of two or more scales (total). The indicating bar on the upper left side of the display is off when in the local mode, and on when in the total mode.

TEST/ZERO

This switch will "test" the display by activating all of its segments. It then zeros the scale. *See the explanation for the **ON** button.*

LAMP

This switch will back light the display for night use. The lamps only stay on while the button is being pushed.

HOLD/RELEASE

When in the hold mode, the scale will constantly display the highest weight applied to it. When in the release mode, the scale shows the actual weight upon it. The indicating bar on the lower left side of the display is on when in the hold mode, and off when in the release mode.

The indicating bar next to Bat comes on when the batteries are getting low. The scale will continue to operate correctly for approximately two hours before shutting itself off.

Batteries / Charging

This scale can be used while it is charging.

Batteries: 6 - 1.2 volt nicads.
Battery Life: Approximately 5 years. (1000 charge/discharge cycles).
Battery duration between charges: Approximately 8 hours of continuous use before the low battery indicator comes on, and approximately 2 hours after that before the scale shuts itself off. Low Batt. indicator comes on when the battery voltage gets down to approximately 7.3 volts.
Automatic Shutoff: The scale turns itself off when the battery voltage gets down to approximately 6.3 volts.
Charging Voltage: 11.5 volts - 14.5 volts DC. Protection is provided for accidental reversal of the charging connections.
Charging Current: Starts at approximately 300mA and drops down to 50mA after 8 hours.
Charging Time: 8 hours if the batteries are discharged to the point of turning off the scale.

WARNING: Do not plug the charger in while there are standard alkaline cells inside. This could result in damage to the batteries and your scale.

Charging the batteries

The batteries can be charged using 120v AC or 11.5V - 14.5V DC. For AC charging use the plug in transformer provided. Connect the black lead from the charging cable to the (-) terminal and the red lead to the (+) terminal.
For DC charging, connect the red lead to positive voltage and the black lead to ground.

Totalizing and/or Printing

Before you attempt to do either of these, a few terms and definitions must be understood. These terms **only** apply to scales that are cabled together.

Master Scale: If more than one scale is being used, the first scale in line is referred to as the Master Scale. Normally these scales have continuous output, If you requested a demand output use the print button on this scale when printing or totalizing.

Slave Scale: If more than one scale is being used, any scale that is not the master scale is referred to as a Slave Scale.

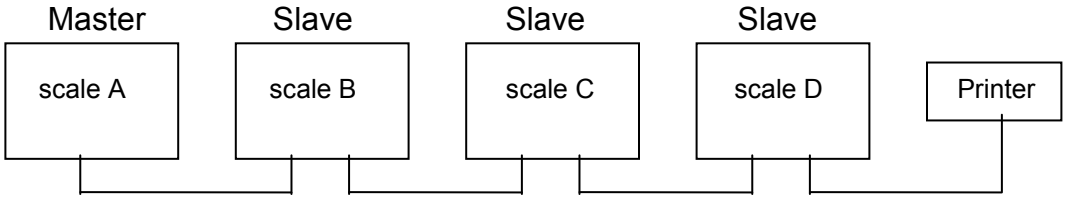


Diagram 2: Example of Master/Slave designations

The master and slave designations are determined by the cable and not the scale itself. The cable also determines if the scale transmits data on demand (when the print button is pushed) or continuously. If continuous, the print button doesn't have to be activated to totalize or print. *Please refer to the cabling diagrams*

Totalizing

When more than one scale is being used, the last one in line can be used to show the total weight of all the scales added together. To totalize, turn on the scales in sequential order starting with the master scale (“scale A") and make sure all of the slave scales are in the total mode. The indicating bar on the upper left side of the display is on when in the total mode. *This does not mean that the scale is receiving; only that it is capable of receiving.*

If transmitting on demand, press the print button on the master scale and the last scale in line (slave scale D in the diagram) will show the total weight of all the scales.

Example: Scale A will display the total of A only.
Scale B will display the total of A + B.
Scale C will display the total of A + B + C.
Scale D will display the total of A + B + C + D.

Printing

Use the print button on the **master** scale when printing. If more than one scale is being used, put the slave scale(s) in the total mode. This will allow the printer to print the total weight of all the scales. **The important thing to remember is that the printer will print whatever is displayed on the last scale in line before the printer.** In addition to the weight, the printer will print a letter that signifies the number of scales that it printed the weight from.
i.e. The letter A signifies the weight is from one scale. The letter B signifies the weight is from two scales etc..

Data Interface

Serial ASCII
20 mA current loop, active or passive. (The PT300 supplies the current for active current loop, and an external current is used for passive current loop. Passive is preferred for longer battery use between charges.)

1200 Baud
8 data bits
1 start bit
2 stop bits
no parity

Transmission Format: A_M/O/Z_-XXXXXX._Kg/Lb<CR><LF>

Format explanation:

A = Scale code (Signifies the scale, could be A for scale A, B for scale B etc..)
Space
M,O,Z = Error code (M = motion, O = over-capacity, Z = zero, space = no error)
Space
Minus sign if negative**, space** if positive.
8 data bits
Space
Pounds/Kilograms
Carriage return
Line feed

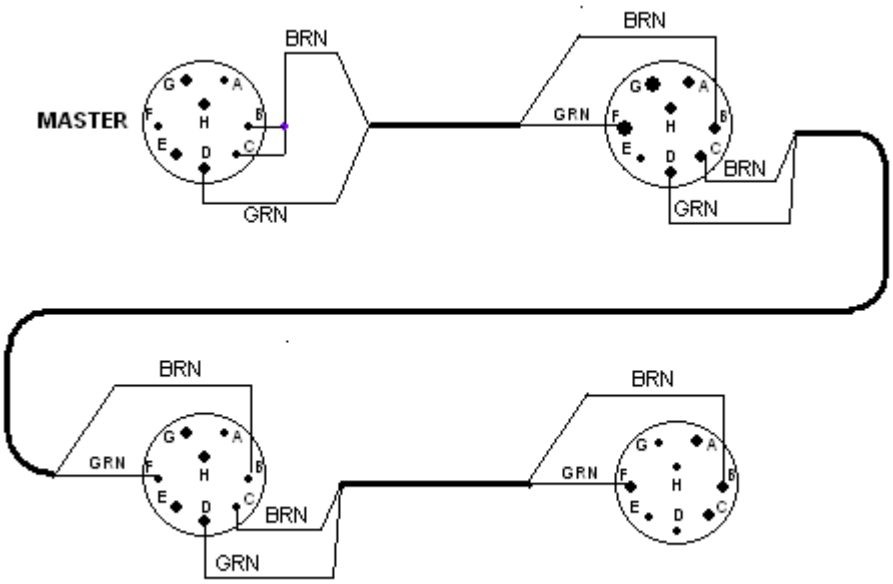
Error Messages

OL	Overload. Reduce load to scale.
OL-	Underload. Re-zero scale.
EEEE0	Seeking zero. Wait until reading is displayed. If this error message stays on, the EEPROM may be damaged. Scale will require calibration.

Cables

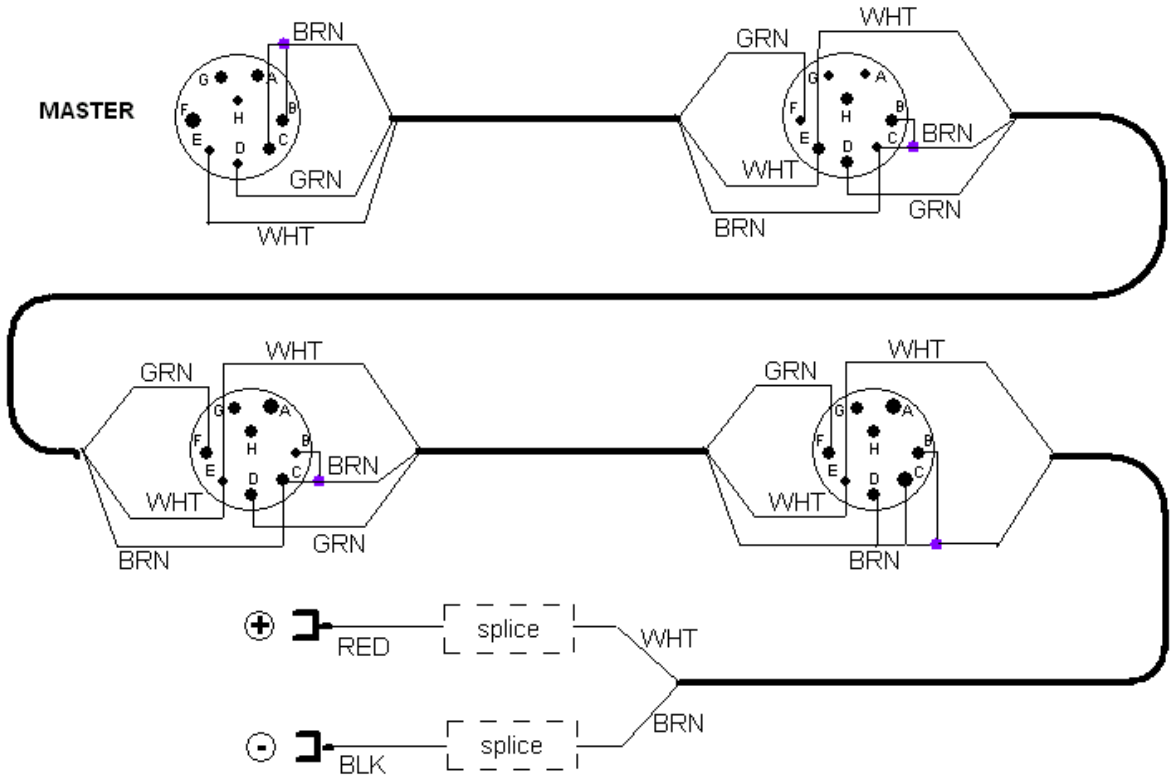
The following diagrams show the different types of cables that can be used with PT 300 scales. Cables can be ordered consisting of 2-6 connectors so you can match the number of scales your system has. The following diagrams illustrate a 4 scale system.

4 Scale Interconnect



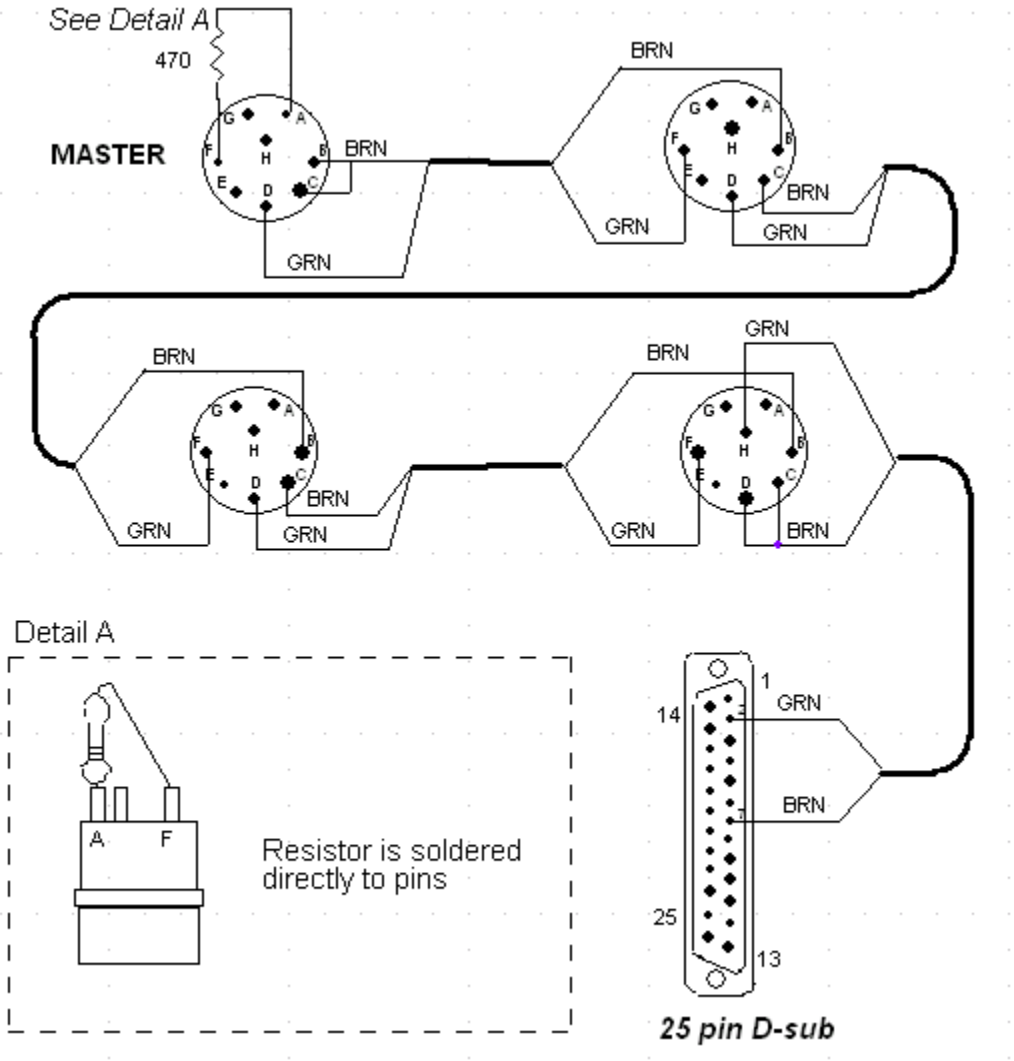
Cabling for 4 scales and a printer with the PT 300 supplying the 20 mA current.

4 Scale Charger-Totalizer Combo



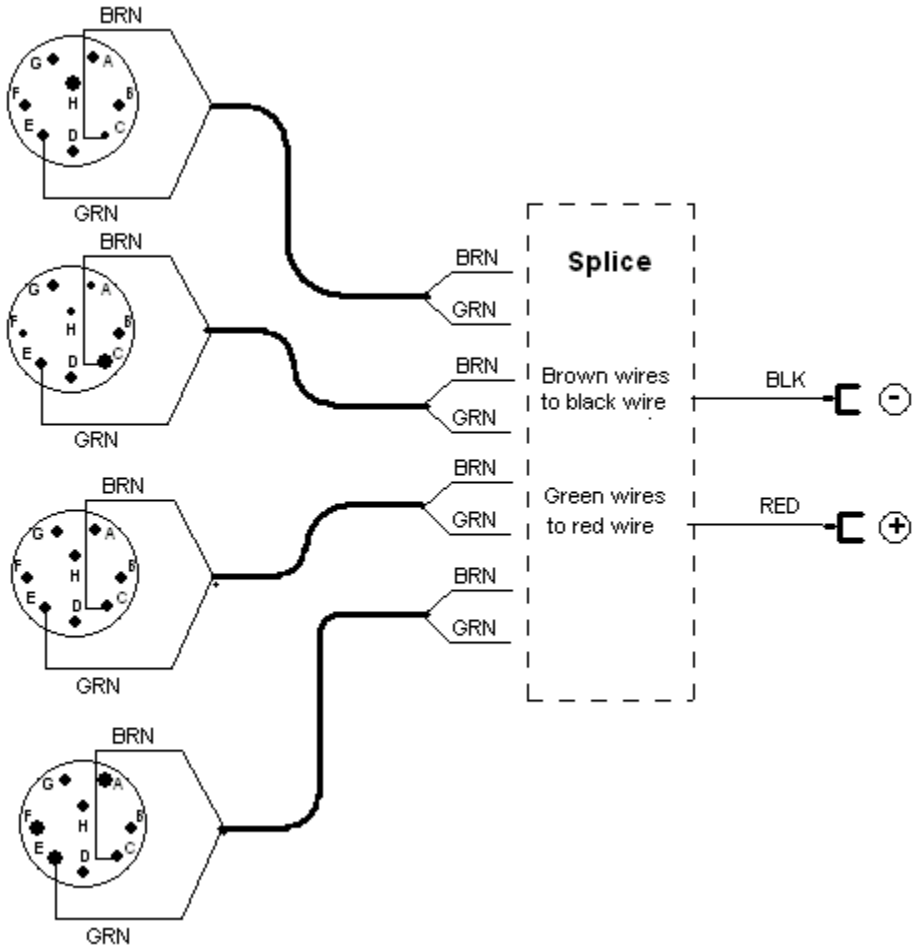
4 scale totalizer cable with battery charger connection.

4 Scale Totalizer to Printer on Demand



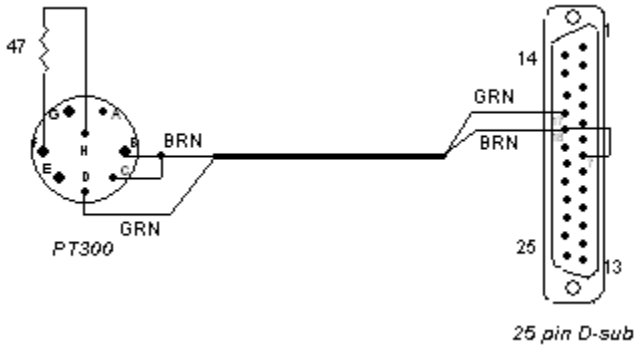
4 scale totalizing cable including 25 pin D-sub connector for a printer or computer

4 Scale PT Charger

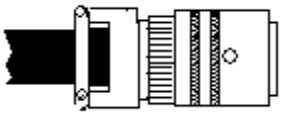


4 scale battery charging cable

Current Loop Output to an Intercomp S400 Display:

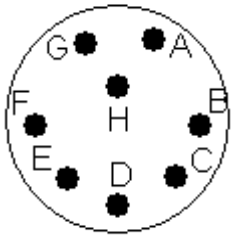


PT300 Connector Pin Designations:



PT Circular Connector

A: Reserved for future use.
B: - Input
C: Ground (- Charging Voltage)
D: - Output
E: +Charging Voltage
F: + Input
G: Reserved for future use.
H: + Output



View from back (solder)

Internal Connector Pin Designations

Plug:
1) +Ex (Summing board)
2) +Sig (Summing board)
3) -Sig (Summing board)
4) -Ex (Summing board)
5) GND (Case and pin C on the I/O connector)
6) +Batt (Battery Clip)
7) +Charging (Pin E of I/O Connector)
8) +Input (Pin F on external connector)
9) -Input (Pin B on external connector)
10) +Output (Pin H on external connector)
11) -Output (Pin D on external connector)
12) Unused

Receptacle:
1) +Ex (PT board)
2) +Sig (PT board)
3) -Sig (PT board)
4) -Ex (PT board)
5) -Batt (GND on PT board)
6) +Batt (PT board)
7) 12V (PT board)
8) +Input (PT board)
9) -Input (PT board)
10) +Output (PT board)
11) -Output (PT board)
12) Unused

WEIGHING PROCEDURES

The PT300 or LP600 can be used separately, in pairs, or in groups of 4, 6, or more. They can be used to measure a support load, wheel load, axle load, axle group load or the total weight of a 2 or 3 axle truck in one measuring procedure.

Ideally, all wheels of a vehicle should be measured at the same time in order to avoid measuring errors due to the suspension system.

If you are not able to weigh the wheels of a double and triple axles simultaneously, the difference in height must be compensated for by using dummy plates (grids, wood or rubber plates) of the same height. The wheel load scales are put in front of the wheels of a vehicle. The driver then drives on the scales/plates and stops within the active weighing area. To avoid improper weighing which might be caused by wheel or axle load displacements, the vehicle brakes should be released before reading the weight values.

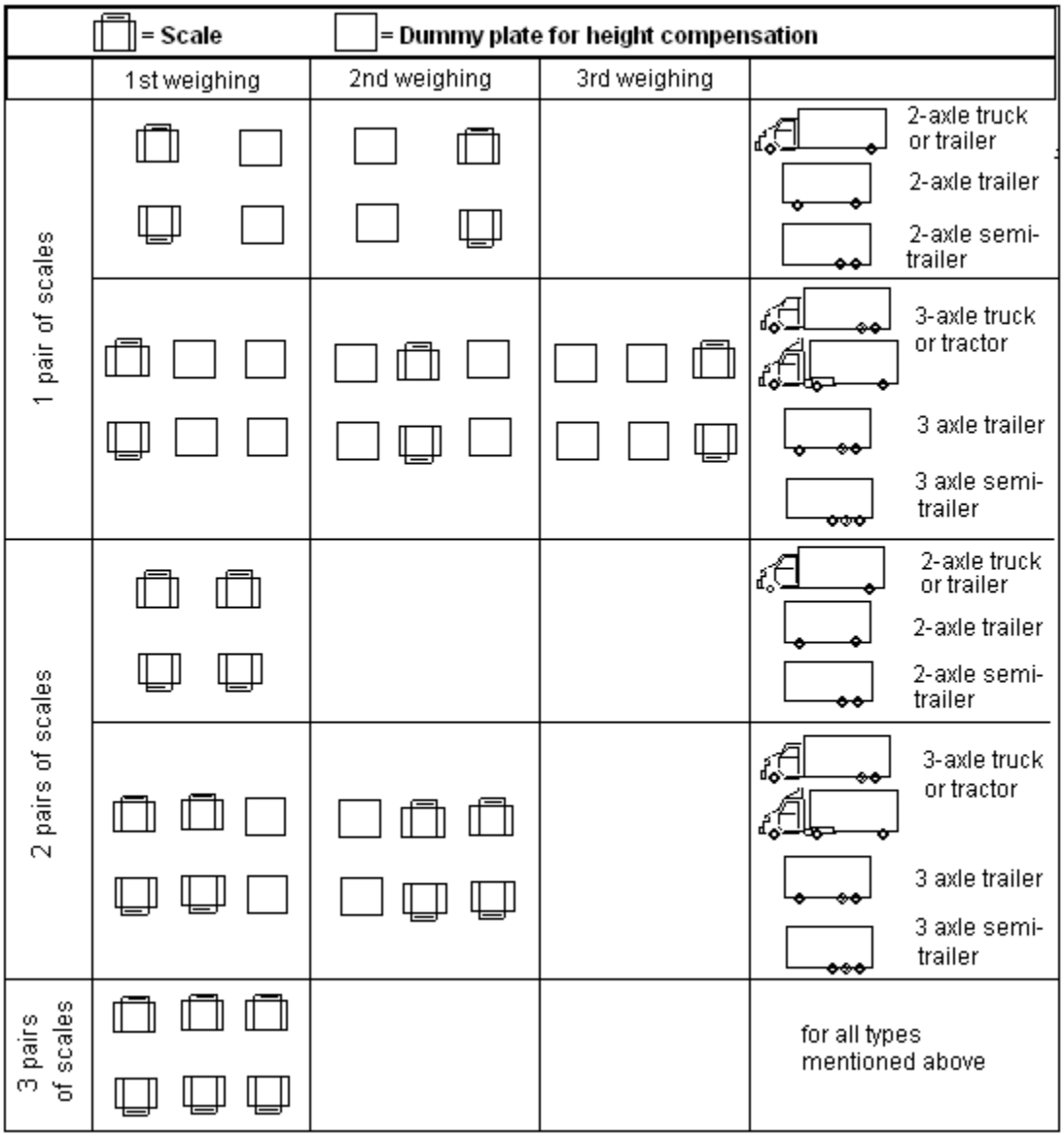
COMBINATIONS FOR CORRECT WEIGHING

1. It is recommended to weigh the wheels of one axle at the same time.

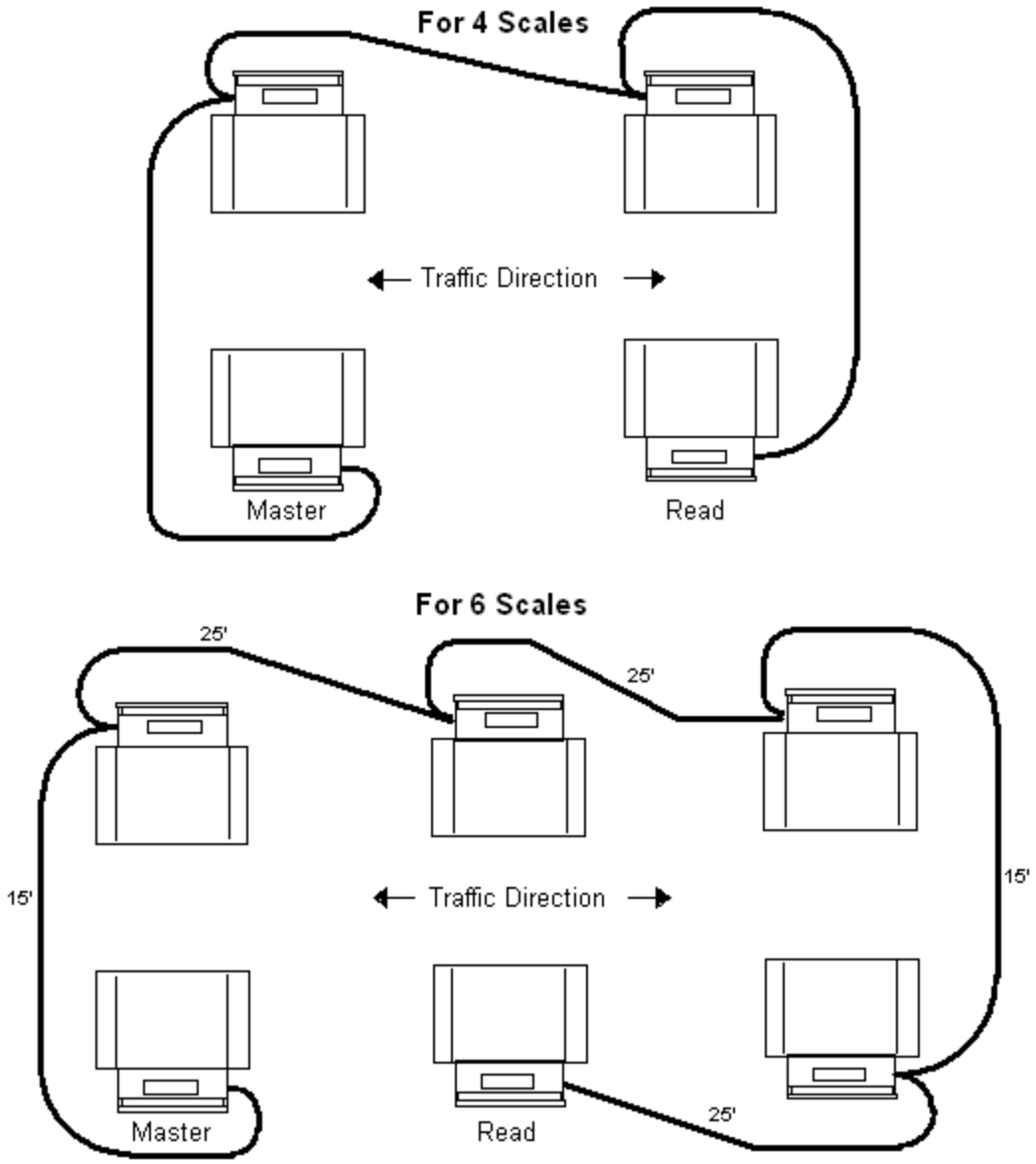
2.The dummy plates can be omitted if the scales are embedded in recesses in the road surface at the same levels as the road surface.

Please see Table 1 on the following page

Table 1: Weighing Combinations



Typical Scale Layouts



Notes: Zero key on MASTER scale will tare out all weigh pads that are interconnected.
Read total weight of all scales at READ scale.

How to reach Intercomp Service

Things to know:

Inform the Service Dept. that the product is a PT300 scale system.
When was the PT300 purchased?
Where was the PT300 purchased?

For Intercomp Service call or fax:

FAX # (763)-476-2613
(763)-476-2531
1-800-328-3336

or fill out Service Support Form at :

www.intercompcompany.com