

PPC-200W

Technical Manual



Yamato

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SAFETY INSTRUCTIONS

Before using the scale, carefully read, understand and follow the "Safety Instructions" described in this manual. Observe the advice given in the "Operations" section to ensure proper operation. Keep this operation manual handy for reference.

- 1) This scale is **not** an explosion-proof model. Do not use the scale in an atmosphere containing flammable gases or explosive fumes. A fire or an explosion can result.
- 2) Do not operate the scale if there is smoke or a burned smell coming from the scale. Unplug the scale immediately. After making sure that there is no danger, consult your dealer. Never try to repair the scale by yourself.
- 3) Never step on or sit on the scale. Not only will the scale be damaged, but you may also be injured.
- 4) Place the item to be weighed in the center of the platform. Items placed on the edge of the platform may fall off and cause injury.
- 5) When weighing a heavy, large or unbalanced item, make sure the item is stable on the platform, otherwise, an accident may occur.
- 6) When carrying or moving the scale, be sure to hold it by the bottom of the base with both hands. If you hold it by the platform, the platform or the platform support may become detached causing the scale to fall. This will damage the scale. The platform is designed for easy removal and cleanup.
- 7) Do not insert your finger into the gaps or holes in the scale. You may be injured.

I Introduction

The PPC-200W is available in four capacities. It displays units of either kilograms and one of the following three: continuous pounds, continuous ounces, or pounds and ounces. The specifications for each capacity are in the following table.

Capacity		Increment		Accuracy		Maximum Tare	
4 lb	2 kg	0.002 lb	0.001 kg	0.002 lb	0.001 kg	3.990 lb	1.995 kg
10 lb	4 kg	0.005 lb	0.002 kg	0.005 lb	0.002 kg	9.975 lb	3.990 kg
20 lb	10 kg	0.01 lb	0.005 kg	0.01 lb	0.005 kg	19.95 lb	9.975 kg
40 lb	20 kg	0.02 lb	0.01 kg	0.02 lb	0.01 kg	39.90 lb	19.95 kg

Additional specifications are provided in the operator's manual. It is important to note that various factory parameter settings depend upon the mode (continuous pound, continuous ounce, or pound and ounce) option selected when the scale was purchased. See section IV.D for the standard settings for each mode.

The PPC-200W is not washdown with the optional AC adaptor or the analog meter.

Remove the batteries when operating the scale with the AC adaptor. Use only the AC adaptor supplied or an adaptor of the same output characteristics.

II Set-up Procedures

II.A User Mode

- Turn scale on. Press  and  to enter User Parameter Mode. The scale will indicate a keyword followed by its value.



- To select the desired keyword, use the keys as follows:



- increase keyword by one



+ - decrease keyword by one

Note: Use the User Parameter List in Section VII to locate the function to be changed and its standard value.



Keyword

Parameter Value

Example: To select lb/kg priority at power on press  nine times.

- To change a parameter value, use the keys as follows:



- increase value by one



+ - increase value by ten



- decrease value by one



I Set-Up Procedures

II.A User Mode (con't)

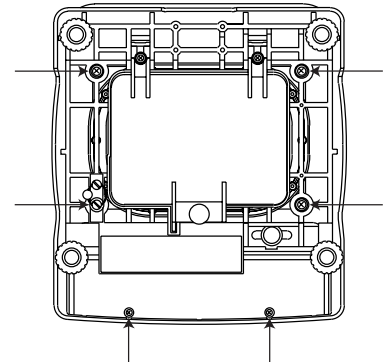
 +  - decrease value by ten

4. Press  to save changes and press  to exit User parameter.

II Set-up Procedures

II.B Test Mode

1. Remove the scale platform.
2. Remove the five screws and one lead wire seal screw from the undercarriage of the scale.
3. Gently lift and remove the scale cover and replace the scale platform.
4. Turn the scale on and short the two "TEST" jumpers on the left of the PCB above the LCD.



5. Once the scale is in Test Mode, the display can be rotated through the following functions by pressing :
 - Internal Count
 - Initial Count
 - Direct Raw Count
 - Average Raw Count
 - Battery Check, A/D Conversion
 - ROM Version
 - Display Segment Check



6. Exit Test Mode by pressing .

II Set-up Procedures

II.C System Parameter Mode

1. Enter Test Mode (see section II.A for details.)

2. Press  and  to enter System Parameter Mode. The scale will indicate a keyword followed by its value.



3. To select the desired keyword, use the keys as follows:

 - increase keyword by one
 +  - decrease keyword by one

Note: Use the System Parameter List in Section IV.B to locate the function to be changed and its standard value.

Example: To select zero tracking time press  eight times.


 Keyword Parameter Value

4. User parameters are also set in the System Parameter Mode.

Press  to cycle through system keywords 30 through 40. After system keyword 40, user keyword 01 is displayed. Pressing  will continue to cycle through user keywords 01 through 09 and then return to system keyword 30.

Note: Use the User Parameter List in Section IV.A to locate the function to be changed and its standard value.



5. To change a parameter value, use the keys as follows:

 - increase value by one
 +  - increase value by ten
 - decrease value by one
 +  - decrease value by ten



II Set-up Procedures

II.C System Parameter Mode

6. Press  to save a change and to progress to the next keyword.



7. Press  and  to return to test mode, or press  then  to return to normal operating mode.

II.D Calibration Mode

1. Enter Test Mode (see section II.A for details.)

2. Press  and  to enter Calibration Mode. The scale will indicate three-point or two-point span adjustment mode and the fraction (i.e. - 0/2, 1/2 or 2/2 for three-point) of full-scale, in kilograms, that should be placed on the platform.



3. If the scale is in two-point span adjustment mode, press  to enter three-point mode.



4. Clear the platform and press .



5. Place one-half of the full scale weight (in kilograms) on the platform.
- Example: If the scale capacity is 5 kg/10 lb, place 2500 g on the platform.

6. Press .



7. Add sufficient weight to the platform to bring the total to the full-scale weight in kilograms.

Example: If the scale capacity is 5 kg/10 lb, place another 2500 g on the platform for a total of 5 kg.

II Set-up Procedures

II.D Calibration Mode

8. Press  to save the new calibration points and return to Test Mode. Internal counts should read 20000 +/- 3.



9. Press  at any time in the span-adjustment to exit to Test Mode without saving any new calibration points.

10. Press  then  to return to normal operating mode.

II.E Factory Parameter Mode

1. Enter Test Mode (see section II.A for details.)
2. Enter Calibration Mode (see section II.C for details.)

3. Press  and  to enter Factory Parameter Mode. The steps are the same as in System Parameter Mode (see Section II.B) with the exception that the keywords progress from 51 through 99.

Note: Use the Factory Parameter List in Section IV.C to locate the function to be changed. Use the Standard Factory Parameter Settings List in Section IV.D to determine the appropriate parameter value to enter.



III Troubleshooting

Problem	Possible Cause	Solution
The scale will not power on.	Batteries dead or incorrectly installed. AC adapter loose or malfunctioning. CPU board malfunction.	Test batteries. Reinstall if needed. Reseat adapter. Replace if needed. Replace CPU board.
The display continues to flash all 8s after the scale is turned on.	Vibration or an unstable position or platform.	Remove source of vibration or place scale on stable platform.
"----H" appears upon power up.	Platform weight too high.	Clear platform and restart.
"----L" appears upon power up.	Platform weight too low.	Remove platform, clear away any debris and reinstall platform.
The displayed weight fluctuates excessively.	Material between the platform and the scale body. Weighing assembly in contact with wires or case. Load cell connector loose or damaged. Power board malfunction. CPU board malfunction.	Remove material. Reposition wires, case or platform. Reconnect or replace the load cell connector. Replace power board. Replace CPU board.

IV Parameter Lists

IV.A User Parameters

Key Word	Std Value	Function	Description
01	015	Auto-off timer	000 Disables auto-off. 001~240 Number of minutes unused to activate auto-off.
02	000	Display hold timer	000 No display hold for changes less than four divisions. 001~030 Display hold duration, in seconds, for changes less than four divisions. 031 No display hold.
03	001	Communication	000 No serial interface. 001 Specified commands acceptable. 002 Sends zero detection. 003 Sends motion detection. 004 Sends continuously.
04	000	Communication data	000 Net weight (1 batch) 001 Net weight, tare weight, gross weight (1 batch) 002 Net weight, tare weight, gross weight (3 batches) 003 Display content (1 batch) 004 Serial printer format (1 batch)
05	000	Communication speed	000 9600 bps 001 600 bps 002 1200 bps 003 2400 bps 004 4800 bps 005 9600 bps 006 19200 bps 007 38400 bps
06	000	Character length	000 8 bits 001 7 bits
07	002	Parity	000 Non 001 Odd 002 Even
08	001	Stop bit length	000 1 bit 001 2 bits
09	001	Default mode	000 kg 001 lb/oz

IV Parameter Lists

IV.B System Parameters

Key Word	Std Value	Function	Description
30	018	System ID	018 Do not change.
31	010	Gravity compensation	000 No compensation. 001~016 Compensation for a specified area (Japan only.) 017~150 Acceleration due to gravity formula, (mm/s ²)-9700.
32	000	Linearity compensation	000 No compensation. 001~127 Positive compensation. 128~255 Negative compensation.
33	004	Steady-state sampling count	000~255
34	012	Steady-state count	000~255
35	008	Polarity steady-state count	000~255
36	020	Steady-state collapse count	000~255
37	004	Steady-state average count	000~255
38	010	Zero tracking timing	000 Disable zero tracking 001~255 Zero tracking at specified counts
39	001	Neglectable change count	000~010 Number of counts
40	000	Simple test mode	000 User parameter valid 001 User parameter invalid 002 User parameter and simple test mode valid

IV.C Factory Parameters

Key Word	Function	Description
51	Scale mode	000 Fixed single increment. 001 Multi-increments. 002 Do not use. 003 Do not use. 004 Change-over / gram mode - decimal pound mode. 005 Change-over / gram mode - lb/oz mode. 006 lb/oz mode. 007 Change-over / gram mode - continuous ounce mode.
52	Multi-increments, complex increment mode	000 Fixed single increment. 001 Fixed accuracy, 3 increments. 002 Fixed accuracy, 2 increments. 003 Increment change at 50% full scale, 2 increments. 004 Increment change at 80% full scale, 2 increments. 005 Increment change at 64% full scale, 2 increments. 006 Increment change at 40% full scale, 2 increments.
53	Weighing capacity base value	000~099
54	Weighing capacity index value	001~004
55	Increment for lighter range	000 1 001 2 002 5 003 10 004 20 005 50 006 100 007 200

IV Parameter Lists

IV.C Factory Parameters

Key Word	Function	Description
56	Location of decimal point	000 0 (No decimal point.) 001 0.0 002 0.00 003 0.000 004 0.0000
57	Type of decimal point	000 Period (.) 001 Comma (,)
58	Weighing unit	000 No unit. 001 g 002 kg 003 lb. 004 oz.
59	Weighing unit display	000 No display. 001 Specified unit displayed.
60	Weighing capacity base value (pound mode)	000 Not used in pound mode. 001~099
61	Weighing capacity index value (pound mode)	000~004
62	Location of decimal point (lb , oz or lb/oz mode)	<Decimal pound and decimal ounce modes> 000 0 (No decimal point) 001 0.0 002 0.00 003 0.000 004 0.0000 <Pound/ounce mode> 000 0 : 0.00 001 0 : 0.0 002 0 : 0 003~004 Not used.
63	Pound increment	000~008
64	Pound conversion coefficient	000 Conversion coefficient = 1.00000 001 Conversion coefficient = 0.705479 002 Conversion coefficient = 0.881849 003 Conversion coefficient = 1.10231
65	Zero point range	000~100
66	Zero point range on plus side	000~100
67	Over scale	000~010
68	Display hold function	000 No hold 001 Hold for weight more than net + 10 divisions. 002 Hold for weight more than net + 10 divisions, hold key invalid. 003 Hold for weight more than net + 20 divisions. 004 Hold for weight more than net + 20 divisions, #10 invalid. 005 Hold for weight more than net + 20 divisions, hold key invalid, #10 invalid.
69	Hold release against increased weight	000 Hold against any increased weight. 001~005 Hold release against a specified increase.
70	Stable mark	000 Display the stable mark. 001 Stable mark not displayed.

IV Parameter Lists

IV.C Factory Parameters

Key Word	Function	Description
71	Tare function	000 No tare function. 001 One-time tare. 002 Consecutive tare.
72	Zero reset under tare operation	000 Zero reset enabled. 001 Zero reset disabled.
73	Power off with ON key	000 ON key disabled for power off. 001 Power off after pressing ON key for two seconds.
74	Special function for stability	000 No function. 001 Enforcement. 002 EU mode.
75	Over - under feature	000 Disabled. 001 Enabled.
80	Internal resolution	000 Do not use. 001~255
81	1 timer (ms)	000 Do not use. 001~255
82	3 timer (ms)	000 Do not use. 001~255
91	Mechanical zero 1	000~255 Automatically set at span adjustment.
92	Mechanical zero 2	000~255 Automatically set at span adjustment.
93	Span coefficient 1 (small)	000~255 Automatically set at span adjustment.
94	Span coefficient 2 (small)	000~255 Automatically set at span adjustment.
95	Span coefficient 1 (large)	000~255 Automatically set at span adjustment.
96	Span Coefficient 2 (large)	000~255 Automatically set at span adjustment.
97	Regional number and gravity for span adjustment	000~155 Automatically set at span adjustment.
99	Factory setting	000 Always displayed. * Do Not Change *

IV Parameter Lists

IV.D Standard Factory Parameter Settings

Key Word	Factory Parameter	Decimal Pound			
		2 kg	4 kg	10 kg	20 kg
51	Scale Mode	004	004	004	004
52	Multi-increments	000	000	000	000
53	Weighing capacity base value	002	004	010	020
54	Weighing capacity index value	003	003	003	002
55	Increment for lighter range	000	001	002	000
56	Location of decimal point	003	003	003	002
57	Type of decimal point	000	000	000	000
58	Weighing unit	002	002	002	002
59	Display of weighing unit	001	001	001	001
60	Weighing capacity base value (lb)	004	010	020	040
61	Weighing capacity index value (lb)	003	003	002	002
62	Location of decimal point	003	003	002	002
63	Pound increment	002	005	001	002
64	Pound conversion coefficient	003	002	003	003
65	Zero point range	019	019	019	019
66	Zero point range on plus side	012	012	012	012
67	Over scale	003	003	003	003
68	Display hold function	000	000	000	000
69	Hold release against increased wght.	000	000	000	000
70	Stable mark	000	000	000	000
71	Tare function	002	002	002	002
72	Zero reset under tare operation	001	001	001	001
73	Power off with ON key	000	000	000	000
74	Special function for stability	000	000	000	000
75	Over - under function	001	001	001	001
80	Internal resolution	010	010	010	010
81	1 timer (ms)	045	045	045	045
82	3 timer (ms)	045	045	045	045
91	Mechanical zero 1	auto	auto	auto	auto
92	Mechanical zero 2	auto	auto	auto	auto
93	Span coefficient 1 (small)	auto	auto	auto	auto
94	Span coefficient 2 (small)	auto	auto	auto	auto
95	Span coefficient 1 (large)	auto	auto	auto	auto
96	Span coefficient 2 (large)	auto	auto	auto	auto
97	Regional # and gravity for span adj.	auto	auto	auto	auto
99	Factory setting - Do not change	000	000	000	000

IV Parameter Lists

IV.D Standard Factory Parameter Settings

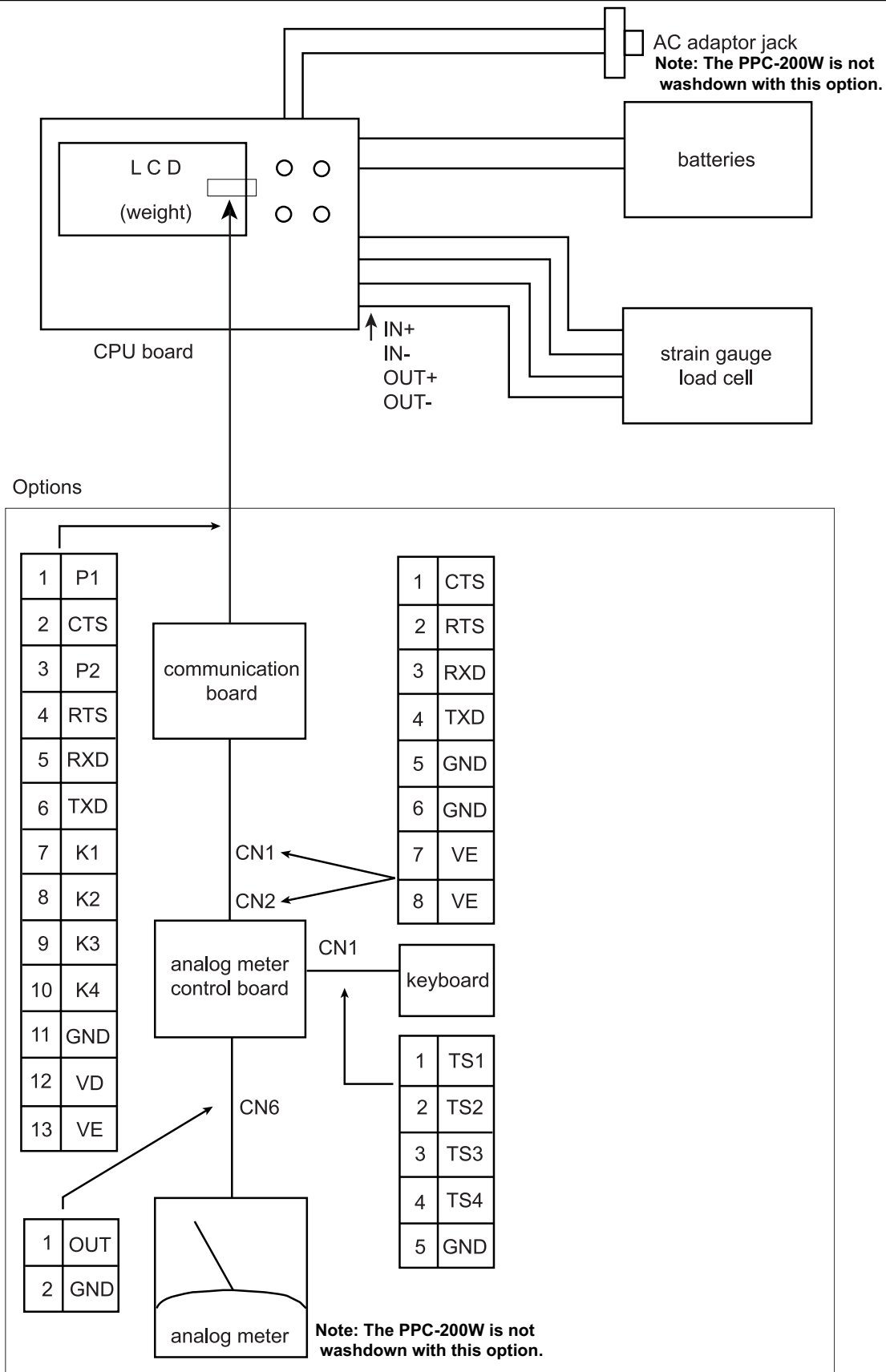
Key Word	Factory Parameter	Continuous Ounce			
		2 kg	4 kg	10 kg	20 kg
51	Scale Mode	007	007	007	007
52	Multi-increments	000	000	000	000
53	Weighing capacity base value	002	004	010	020
54	Weighing capacity index value	003	003	003	002
55	Increment for lighter range	000	001	002	000
56	Location of decimal point	003	003	003	002
57	Type of decimal point	000	000	000	000
58	Weighing unit	002	002	002	002
59	Display of weighing unit	001	001	001	001
60	Weighing capacity base value (lb)	050	010	020	050
61	Weighing capacity index value (lb)	000	000	000	000
62	Location of decimal point	002	001	001	001
63	Pound increment	005	001	002	005
64	Pound conversion coefficient	001	001	002	001
65	Zero point range	019	019	019	019
66	Zero point range on plus side	012	012	012	012
67	Over scale	003	003	003	003
68	Display hold function	000	000	000	000
69	Hold release against increased wght.	000	000	000	000
70	Stable mark	000	000	000	000
71	Tare function	002	002	002	002
72	Zero reset under tare operation	001	001	001	001
73	Power off with ON key	000	000	000	000
74	Special function for stability	000	000	000	000
75	Over - under function	001	001	001	001
80	Internal resolution	010	010	010	010
81	1 timer (ms)	045	045	045	045
82	3 timer (ms)	045	045	045	045
91	Mechanical zero 1	auto	auto	auto	auto
92	Mechanical zero 2	auto	auto	auto	auto
93	Span coefficient 1 (small)	auto	auto	auto	auto
94	Span coefficient 2 (small)	auto	auto	auto	auto
95	Span coefficient 1 (large)	auto	auto	auto	auto
96	Span coefficient 2 (large)	auto	auto	auto	auto
97	Regional # and gravity for span adj.	auto	auto	auto	auto
99	Factory setting - Do not change	000	000	000	000

IV Parameter Lists

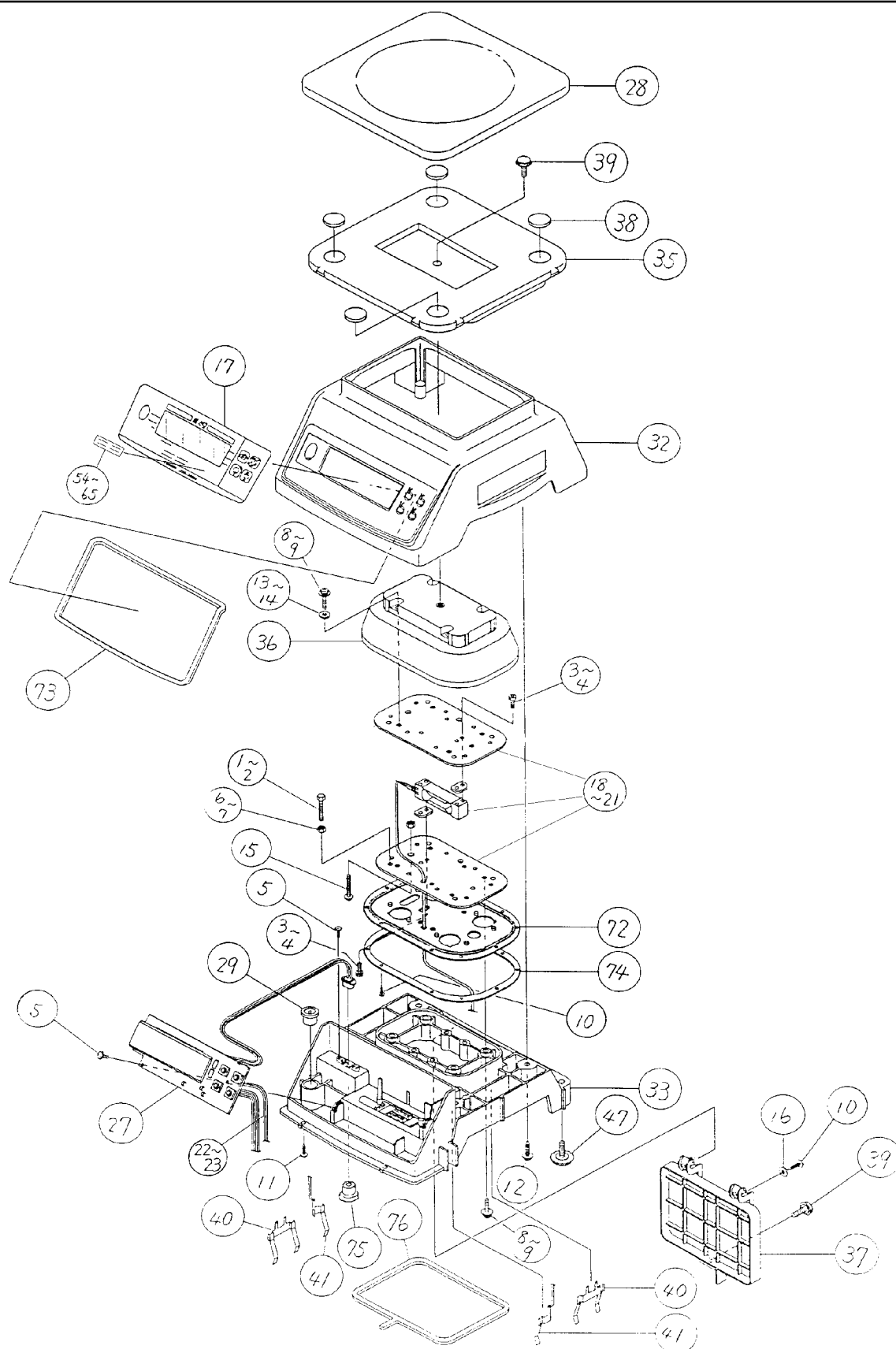
IV.D Standard Factory Parameter Settings

Key Word	Factory Parameter	Pound and Ounce			
		2 kg	4 kg	10 kg	20 kg
51	Scale Mode	005	005	005	005
52	Multi-increments	000	000	000	000
53	Weighing capacity base value	002	004	010	020
54	Weighing capacity index value	003	003	003	002
55	Increment for lighter range	000	001	002	000
56	Location of decimal point	003	003	003	002
57	Type of decimal point	000	000	000	000
58	Weighing unit	002	002	002	002
59	Display of weighing unit	001	001	001	001
60	Weighing capacity base value (lb)	050	010	020	050
61	Weighing capacity index value (lb)	000	000	000	000
62	Location of decimal point	000	001	001	001
63	Pound increment	005	001	002	005
64	Pound conversion coefficient	001	001	002	001
65	Zero point range	019	019	019	019
66	Zero point range on plus side	012	012	012	012
67	Over scale	003	003	003	003
68	Display hold function	000	000	000	000
69	Hold release against increased wght.	000	000	000	000
70	Stable mark	000	000	000	000
71	Tare function	002	002	002	002
72	Zero reset under tare operation	001	001	001	001
73	Power off with ON key	000	000	000	000
74	Special function for stability	000	000	000	000
75	Over - under function	001	001	001	001
80	Internal resolution	010	010	010	010
81	1 timer (ms)	045	045	045	045
82	3 timer (ms)	045	045	045	045
91	Mechanical zero 1	auto	auto	auto	auto
92	Mechanical zero 2	auto	auto	auto	auto
93	Span coefficient 1 (small)	auto	auto	auto	auto
94	Span coefficient 2 (small)	auto	auto	auto	auto
95	Span coefficient 1 (large)	auto	auto	auto	auto
96	Span coefficient 2 (large)	auto	auto	auto	auto
97	Regional # and gravity for span adj.	auto	auto	auto	auto
99	Factory setting - Do not change	000	000	000	000

V Wiring Diagram



VI Parts List



VI Parts List

ITEM	PART NUMBER	DESCRIPTION	QTY
1		Hex Bolt, M4 x 30, 2 kg/4 kg	4
2		Hex Bolt, M5 x 30, 10 kg/20 kg	4
3		Hex Head Screw, M3 x 12, 2 kg/4 kg	4
4		Hex Head Screw, M3 x 12, 10 kg/20 kg	4
5		Tapping Screw, M3 x 8	4
6		Hex Nut, M4, 2 kg/4 kg	5
7		Hex Nut, M5, 10 kg/20 kg	4
8	YAM-1249-200008	Phillips Screw, M4 x 18, 2 kg/4 kg	8
9	YAM-1249-200009	Phillips Screw, M5 x 18, 10 kg/20 kg	8
10	YAM-1249-200010	Tapping Screw, M3 x 10	12
11	YAM-1249-200011	Tapping Screw, M3 x 16	2
12	YAM-1249-200012	Tapping Screw, M4 x 16	3
13	YAM-1249-200013	Sealing Washer, M4, 2 kg/4 kg	4
14	YAM-1249-200014	Sealing Washer, M5, 10 kg/20 kg	4
15		Cup Screw, M4 x 40, 2 kg/4 kg	1
16	YAM-1249-200016	Nylon Washer	2
17	YAM-1249-200017	Front Mask Assembly	1
18	YAM-1249-200118	Load Cell Assy, 4 lb/2 kg Capacity	1
19	YAM-1249-200119	Load Cell Assy, 10 lb/4 kg Capacity	1
20	YAM-1249-200120	Load Cell Assy, 20 lb/10 kg Capacity	1
21	YAM-1249-200121	Load Cell Assy, 40 lb/20 kg Capacity	1
22	YAM-1249-200022	Red Wire, 300 mm	1
23	YAM-1249-200023	Black Wire, 430 mm	1
27	YAM-1249-200027	CPU Board Assembly	1
28	YAM-1249-200028	Platform Cover, S.S.	1
29	YAM-1249-200029	Level Indicator	1
30	YAM-1249-200030	Sealing Screw	1
32	YAM-1249-200032	Upper Housing Assembly (Includes 17)	1
33	YAM-1249-200033	Lower Housing	1
35	YAM-1249-200035	Platform Support Assembly (Includes 38)	1
36	YAM-1249-200036	Platform Support, Lower	1
37	YAM-1249-200037	Lid, Battery Box	1
38	YAM-1249-200038	Cushion, Rubber, Platform	4
39	YAM-1249-200039	Thumbscrew	2
40	YAM-1249-200040	Spring A, Battery Box	2
41	YAM-1249-200041	Spring B, Battery Box	2
47	YAM-1249-200047	Leveling Leg	4
54	YAM-1249-200054	Sticker, 4 lb, 200W	1
55	YAM-1249-200055	Sticker, 80 oz, 200W-C	1
56	YAM-1249-200056	Sticker, 5 lb, 200W-Z	1
57	YAM-1249-200057	Sticker, 10 lb, 200W	1
58	YAM-1249-200058	Sticker, 160 oz, 200W-C	1
59	YAM-1249-200058	Sticker, 10 lb, 200W-Z	1
60	YAM-1249-200058	Sticker, 20 lb, 200W	1
61	YAM-1249-200058	Sticker, 320 oz, 200W-C	1
62	YAM-1249-200062	Sticker, 20 lb, 200W-Z	1
63	YAM-1249-200063	Sticker, 40 lb, 200W	1
64	YAM-1249-200064	Sticker, 800 oz, 200W-C	1
65	YAM-1249-200065	Sticker, 50 lb, 200W-Z	1
72	YAM-1249-200072	Diaphragm	1
73	YAM-1249-200073	Gasket, Display	1
75	YAM-1249-200075	AC Adaptor Plug	1
76	YAM-1249-200076	Gasket, Battery	1