

Setup Record

Customer _____
 Date _____
 Job Number _____
 Unit ID _____

10 Display Menu

11 Disp Format _____
 12 Disp Countby _____
 13 Disp Units _____
 14 Bargraph Span _____
 15 Ext Inpt Mode _____

20 Cal Menu

21 Auto Cal
 Lo Span Cal _____
 Hi Span Cal _____
 Disp Val Correct _____
 22 Manual Cal
 Scale Factor Wgt _____
 Scale Factor Cts _____
 Zero Counts _____
 23 Linearization
 Linearize Set
 1In _____
 1Ot _____
 2In _____
 2Ot _____
 3In _____
 3Ot _____
 4In _____
 4Ot _____
 5In _____
 5Ot _____
 Linearize Enable _____
 24 Zero Tolerance _____

30 Setpoint Menu (see table below)

40 I-Output Menu
 41 IOut Range _____
 42 IOut: 4/0mA _____
 43 IOut: 20mA _____
 44 IOut Track _____
 45 IOut Failsafe _____
 46 IOut Enable _____
 48 Current Adjst
 0mA Point _____
 4mA Point _____
 20mA Point _____

50 Com Menu

51 Serial Address _____
 52 Serial Baud _____
 53 PLC Menu _____

60 Sensor Menu

61 Sensor Adj Ex _____
 62 Resolution _____
 63 Sensor Gain _____

70 Filter Menu

71 Averaging _____
 72 DSP Enable _____
 73 DSP Step _____
 74 DSP Qualify _____
 75 DSP Factor _____

80 Tracking Menu

81 Rate Threshld _____
 82 Sample Intrvl _____
 83 Zero Trak Win _____
 84 Drift Limit _____
 85 Mat Trak Enab _____

90 Service Menu

91 User Access _____
 92 Keyboard Lock _____

30 Setpoint Menu

	Value	Deadband	HI/Lo	Track	Failsafe	Preact
31 Relay1						
32 Relay2						
33 DigOut1						
34 DigOut2						
35 DigOut3						
36 DigOut4						
37 DigOut5						
38 DigOut6						



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SVS 2000™

Quick Reference Manual



Reference

KM 97-1129-01, SVS 2000
 Installation and Operation Manual

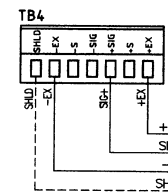
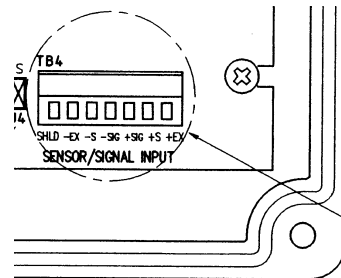
Mounting and Wiring

Mounting

CAUTION

- Do not mount in direct sunlight.
- Use flex conduit between rigid conduit and SVS 2000 enclosure.
- Consider clearance needs for wiring and maintenance.
- Consider temperature at mounting location. See Manual Appendix A for specifications.

1. For Stainless Steel version, first remove electronics assembly.
2. Hold SVS 2000 in desired location and mark mounting hole positions.
3. Drill mounting holes.



Detail — KM Half-Bridge Sensors

4. Mount SVS 2000 securely using customer-supplied hardware.
5. For Stainless Steel version, make entry holes in bottom of enclosure and re-install electronics assembly.

Wiring

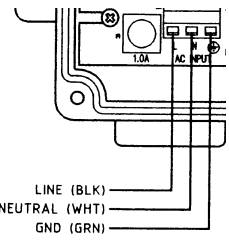
Route AC power and setpoint cables separate from low-level signal cables.

1. Connect sensor wiring.
2. Connect relay output, digital output, analog output, serial output, and remote input wiring, as applicable.
3. Connect AC power.
4. Apply power and check display.
5. Seal openings in enclosure, using Sikaflex 1A or Dow Corning RTV 739 or 738 sealant.
6. Tighten set screws that secure wires to the terminal boards to 8 lbf/in. of torque.

WARNING

- Wiring must comply with national/local wiring requirements.
- Ground conductor must connect to Protective Earth (PE) terminal.
- Power wiring must include switch/circuit breaker for disconnecting power. It must be close to SVS 2000, in easy reach of operator, and marked as disconnect for unit.

See Manual Appendix E for additional wiring details



AC Power

Setup with Quick Config

1. See Figures 1 and 2. Determine whether application is direct support or bolt-on. Gather data to fill out table in applicable figure.
2. See Figure 3. Perform *Quick Config*. SVS 2000 leads you through menu tree. When *Quick Config* is complete, SVS 2000 automatically switches to Run Mode.

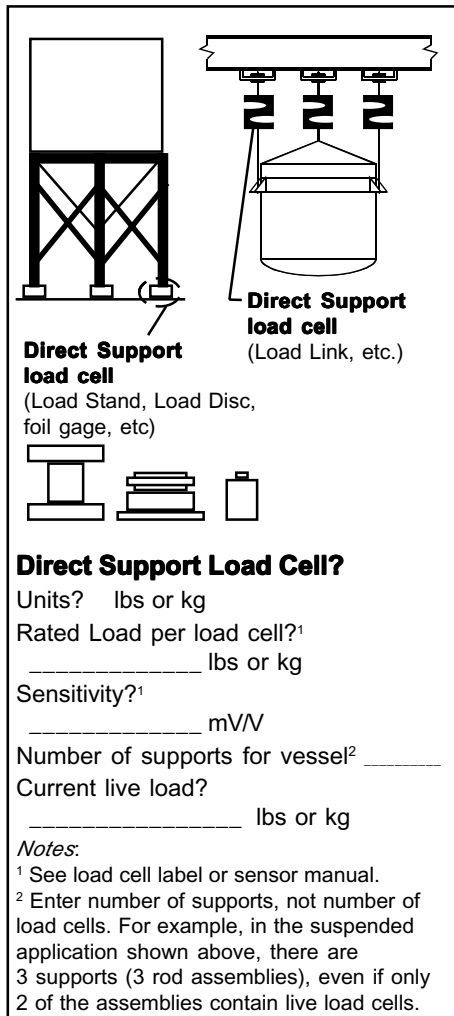
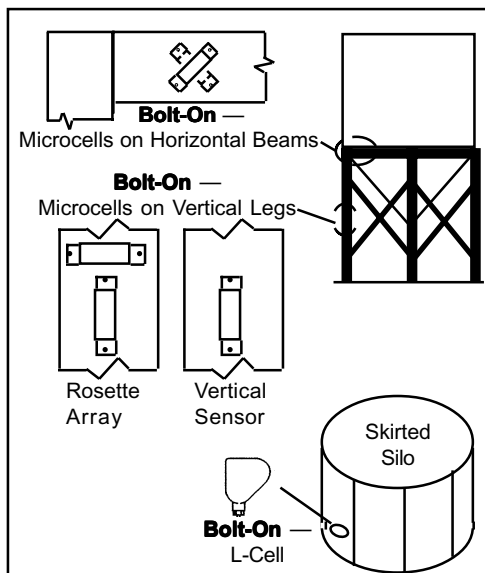


Figure 1. Direct Support (load cell) Application



KM Bolt-On Sensor?

Units? lbs or kg
Sensor type?¹ L-Cells or Microcells
If Microcells:^{1,2}

Installed on horizontal beams?
Installed on vertical legs?
Rosette Arrays?
Vertical Microcells?

Vessel working capacity?¹
_____ lbs or kg
Vessel working stress?¹
_____ psi or kg/mm²
Current material weight?
_____ lbs or kg

Notes:

¹ See Application Data Form. Copy of form was returned with order. If you cannot locate it, contact KM.

² Internal calculations for Microcells for 3-inch Microcells on carbon steel. Modify calibration after *Quick Config* if installing on stainless steel or aluminum or using 2-inch Microcells. See Manual Appendix C, Calculation of Manual Calibration Parameters, for details.

Figure 2. Bolt-On (Microcell or L-Cell) Application

Auto (Live Load) Calibration

Quick Config configured the SVS 2000 based on system and sensor characteristics. When scheduling permits you to move material (at least 25% of vessel's capacity), perform Auto calibration to obtain highest accuracy.

Calibration by Adding Known Quantity of Material (starting on Run Mode display)

Action	Typical Display at End of Step	Note:
[2] [1] [ENTER]	21 AUTO CAL	Note: For Calibration by Subtracting Known Quantity of Material, see Manual Chapter 6, Cal Menu.
[ENTER]	LO SPAN CAL	
[ENTER]	> ----- lbs	
(input current material weight)		
[ENTER]	LO SPAN CAL	
[▲]	HI SPAN CAL	
(add material to vessel)	(unchanged)	
[ENTER]	> ----- lbs	
(input current material weight)		
[ENTER]	HI SPAN CAL	
[GROSS] or [NET]	(Run Mode display)	

Default Unit

Method #1 (starting on Run Mode display)

Action	Typical Display at End of Step
[9] [4] [ENTER]	94 DEFAULT SYSTM
[ENTER]	DEFAULT NVRAM?
[ENTER]	ARE YOU SURE?
[ENTER]	(beginning of <i>Quick Config</i>)

Method #2

1. Turn off AC power.
2. Press and hold Enter Key while turning on AC power.

Remote Tare or Totalize

Provide a 1 second contact closure on tare input terminals — see Manual Appendix E for wiring details. Configuration of remote input as tare or totalize is done in function 15, *Ext Inpt Mode*.

Error Messages

See Manual Appendix F, Error Messages.

Keyboard Functions

Func Key (Run Mode only)

Go to function 10 in menu tree.

Arrow Keys

- Run Mode: Scroll through Run Mode displays.
- Function Mode:
 - Scroll through menu selections at given level.
 - Scroll to parameter value.

Net Key

Go to net weight display in Run Mode.

Gross Key

Go to gross weight display in Run Mode.

Tare Key (Run Mode only)

Press for 1 second to tare vessel. SVS switches to net weight display.

Zero Key (Run Mode only)

- Gross display: Change calibration, setting gross weight to zero.
- Net display: Reset number of tares to zero.
- Total display: Reset total weight and number of totals to zero.

– (minus) Key (Run Mode only)

Press for 1 second to totalize vessel (add net weight to total weight). SVS switches to total weight display.

Enter Key

- Run Mode:
 - Gross display: Toggle between numerical and bar graph format.
 - Net display: Briefly display number of tares since tare reset.
 - Total display: Briefly display number of totals since totalizer reset.
- Function Mode:
 - Access submenus.
 - Save parameter value in memory.

Numeric Keys

- Run Mode: Enter function number for desired menu (press Enter Key after number is entered).
- Function Mode: Input parameter value.

Hot Keys (Run Mode operations)

Switch from Run to Function Mode

Press Func Key.

Switch from Run Mode to particular Function Mode Menu

Press 2-digit function number and Enter Key.

Switch from Function to Run Mode

Press Gross or Net Key.

Scroll through Run Mode Displays

(gross, net, total, and relay status) Press Up or Down Arrow Key.

Switch to Gross Weight

Press Gross Key.

Switch to Net Weight

Press Net Key.

Toggle between Gross Weight Numerical and Bar Graph Displays

Press Enter Key while on gross display.

Zero Gross Weight

Press Zero Key while on gross display. When SVS requests verification, press Enter Key. Press any other key to abort.

Tare (local)

Press Tare Key for 1 second, until SVS flashes *Tare Implemented* and switches to net display.

Display Number of Tares

Press Enter Key while on net display. SVS flashes number of tares.

Zero Number of Tares

Press Zero Key while on net display.

Totalize (local)

Press '-' Key for 1 second, until SVS flashes *Net Totalized* and switches to total display.

Display Number of Totals

Press Enter Key while on total display. SVS flashes number of totals.

Zero Total Weight and # of Totals

Press Zero Key while on total display. When SVS requests verification, press Enter Key. Press any other key to abort.

Display Serial Address

Press '-' Key and then '1' Key.

Display Software Revision

Press '-' Key and then '2' Key.

Display ID Label

Press '-' Key and then '3' Key.

Display Net Reference (\pm NR)

Press '-' Key and then '4' Key.

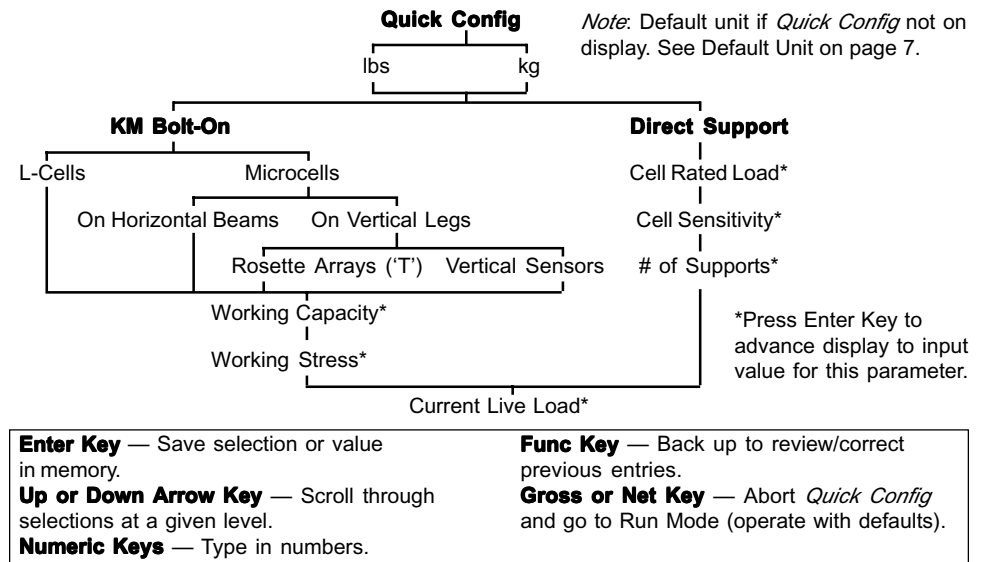


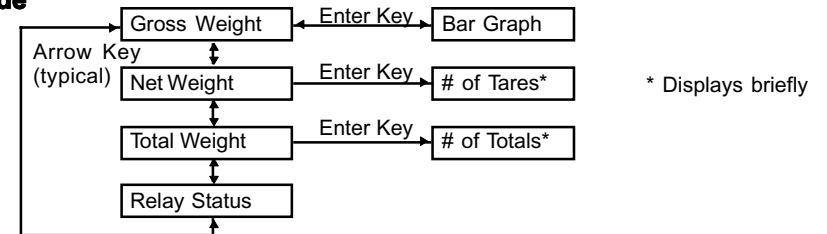
Figure 3. Quick Config Menu Tree and Keyboard Use

Run and Function Modes

- *Run Mode* — Monitoring Display gross weight, net weight, total weight, and relay status.
- *Function Mode* — Menu Tree Access menu tree to allow user to view and modify setup parameters.

When *Quick Config* is complete, SVS 2000 automatically switches to Run Mode.

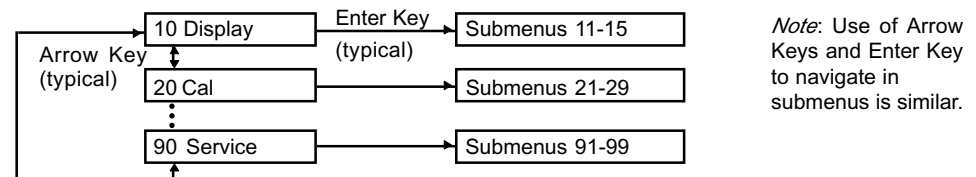
Run Mode



Toggle Between Modes



Function Mode (see next pages for complete menu tree and descriptions)



Function Mode Menu Tree

10 Display Menu

- 11 Disp Format (xxxxxx, xxxxx.x, xxxx.xx, xxx.xxx, xx.xxxx, xxxxxxo, xxxxxxoo)
- 12 Disp Countby (1, 2, 5, 10, 20, 50, 100, 200, 500, 1000, 5000, 10000)
- 13 Disp Units (lbs, kg, CWT, tns, gal, Ltr, bbl, bu, %, ft, m, mV, none)
- 14 Bargraph Span
- 15 Ext Inpt Mode (Tare, Total)

20 Cal Menu

- 21 Auto Cal
 - Lo Span Cal
 - Hi Span Cal
 - Disp Val Correct
- 22 Manual Cal
 - Scale Factor Wgt
 - Scale Factor Cts
 - Zero Counts
- 23 Linearization
 - Linearize Set
 - Linearize Enable (Off, On)
- 24 Zero Tolerance
- 29 Cal Display (Cnt/mV, ScfWgt, ScfCnt, ZeroCnt, DispVCW, HiSpanW, LoSpanW, HiSpanC, LoSpanC, 0mV_Cnt)

30 Setpoint Menu

- 31 Slct Relay #1
 - Relay1 Value
 - Relay1 Deadband
 - Relay1 Hi/Lo (Hi, Lo)
 - Relay1 Track (Grs, Net, Tot, Flt)
 - Relay1 Fail-Safe (On, Off, NC)
 - Relay1 Preact
- 32 Slct Relay #2 (similar to relay 1)
- 33 Slct Digt1 #1 (similar to relay 1)
- 34 Slct Digt1 #2 (similar to relay 1)
- 35 Slct Digt1 #3 (similar to relay 1)
- 36 Slct Digt1 #4 (similar to relay 1)
- 37 Slct Digt1 #5 (similar to relay 1)
- 38 Slct Digt1 #6 (similar to relay 1)
- 39 Digt1 Status
- Setpoint Test
 - Select Relay #1 (Off, On)
 - Select Relay #2 (Off, On)
 - Select Digt1 #1 (Off, On)
 - Select Digt1 #2 (Off, On)
 - Select Digt1 #3 (Off, On)
 - Select Digt1 #4 (Off, On)
 - Select Digt1 #5 (Off, On)
 - Select Digt1 #6 (Off, On)

40 I-Output Menu

- 41 IOut Range (4-20mA, 0-20mA)
- 42 IOut: 4/0mA
- 43 IOut: 20mA
- 44 IOut Track (Grs, Net)
- 45 IOut Failsafe (Hi, Lo, NC)
- 46 IOut Enable (On, Off)
- 48 Current Adjst (0mA Point, 4mA Point, 20mA Point)
- 49 Test Current (4/0mA, 6/2mA, 8/4mA, 10/6mA, 12/8mA, 14/10mA, 16/12mA, 18/14mA, 20/16mA, 18mA, 20mA)

50 Com Menu

- 51 Serial Address
- 52 Serial Baud (1200, 2400, 4800, 9600, 19200)
- 53 PLC Menu
 - A-B RIO Menu
 - DeviceNet Menu (release in 1999)
 - Profibus Menu (release in 1999)
 - Modbus Menu (release in 1999)

60 Sensor Menu

- 61 Sensor Adj Ex (13V, 12V, 11V, 10V, 9V, 8V, 7V, 6V, 5V)
- 62 Resolution (16bt, 17bt, 18bt, 19bt, 20bt, 21bt)
- 63 Sensor Gain (1, 2, 4, 8, 16, 32, 64, 128)
- 69 Sensor Disply (Raw Weight, Ftr Weight, Out Weight, Raw Counts, Ftr Counts, Sensout)

70 Filter Menu

- 71 Averaging
- 72 DSP Enable (On, Off)
- 73 DSP Step
- 74 DSP Qualify
- 75 DSP Factor
- 79 DSP Step Mon

80 Tracking Menu

- 81 Rate Threshld
- 82 Sample Intrvl
- 83 Zero Trak Win
- 84 Drift Limit
- 85 Mat Trak Enab (On, Off)
- 89 Rate Monitor

90 Service Menu

- 91 User Access
- 92 Keyboard Lock
- 93 Keyboard Test
- 94 Default System
- 99 Diagnostics

Menu Descriptions

10 Display Menu

- *11 Disp Format*— Move decimal point or add 'dummy' zeroes to display. Use with *Disp Countby* to provide results consistent with system accuracy. Note that changes affect many parameter values.
- *12 Disp Countby*— Set display to count by increments.
- *13 Disp Units*— Set engineering units for display.
- *14 Bargraph Span*— Set span (100% value) for bar graph.
- *15 Ext Inpt Mode*— Configure external input as remote tare (default) or remote totalize.

20 Cal Menu

- *21 Auto Cal*— Set *Lo Span* and *Hi Span* while moving material into or out of vessel. Must move at least 25% of vessel's total capacity. Provides highest accuracy. —Set known material weight with *Disp Val Correct* to shift calibration.
- *22 Manual Cal*— Fine tune calibration using calculated values or re-enter previous calibration data.
- *23 Linearization*— Correct weight for vessel structures that respond non-linearly to load changes.
- *24 Zero Tolerance*— Set tolerance limit for pressing of Zero Key in Run Mode (gross weight display) to prevent accidental zeroing of vessel with material.
- *29 Cal Display*— View calibration values.

30 Setpoint Menu

Set up relays and digital outputs:

- *Value*— Energizing value.
- *Deadband*— Material added or removed before setpoint de-energizes.
- *Hi/Lo*— Energize above or below *Value*.
- *Track*— Energize based on gross, net, or total weight, or system fault.
- *Failsafe*— Setpoint failsafe condition (on, off, or no change)
- *Preact*— Point (material added or removed) before *Value* is reached at which setpoint energizes.

40 I-Output Menu (with optional PCB)

Set up current output:

- *41 IOut Range*— 4-20 or 0-20 mA.
- *42 4/0mA*— Low output value.
- *43 20mA*— High output value.
- *44 Track*— Output based on gross or net weight.
- *45 Failsafe*— Output failsafe condition (on, off, or no change).
- *46 Enable*— Turn output on/off.

50 Com Menu (with optional PCBs)

Set serial address, baud rate, and PLC parameters for communication with other devices.

60 Sensor Menu

Set excitation and gain to match sensors. Set resolution. Display raw, filtered, and output data.

70 Filter Menu

Set up averaging and DSP filter to reduce effect of 'noise'.

80 Tracking Menu

Set up zero and material tracking to reduce effect of 'noise' and drift.

90 Service Menu

Set access and keyboard lock codes, perform diagnostics, and default system.