MODEL S52c

WEIGH FEEDER CONTROLLER

THAYER
SOLIDS FLOW CONTROL®

THAYER SCALE

CONTINUOUS WEIGHING & FEEDING OF BULK MATERIALS

The S52c Weigh Feeder Controller is a full featured instrument in a single, compact package. It performs the same functions as an instrument costing many times more without sacrificing the accuracy that is associated with Thayer products. Simplicity of use has always been a very important factor in designing an instrument and the S52c has inherited all the time and labor saving methods Thayer has developed over the years. Menus and procedures that are written in plain English, not some code that must be interpreted, set the S52c apart from the competitors.

The S52c Instrument can be used on most Belt Conveyor and Loss-In-Weight weighing systems to provide continuous control and information about the flow of material to its process by monitoring load and speed. The weigh system may use a strain gage or an LVDT to sense weight. A variety of sensors may be used to measurer the speed of either a belt, screw, rotary feeder or vibratory feeder. The S52C uses the change in weight of the feeder to determine instantaneous material flow rate and accumulative weight total information. The speed is used to control the feeder when in volumetric control, used during refill and disturbance control. Integrated together, this information is processed by the controller portion of the instrument to provide continuous control of the system to match a target flow rate or setpoint. All information gathered by the system is then presented both visually on the instrument's face and through optional communications via a number of field buses.

Model S52c

UP / DOWN ARROWS.
These keys are used in Belt controller applications to adjust the setpoint and for menu navigation

LEFT / RIGHT ARROWS.
These keys are used in Belt controller applications to manually adjust the motor speed and for menu navigation

FUNCTION KEYS.
On the display, there are four function keys, F1 - F4, that are used for variable functions. Each key has a corresponding label which appears on the display directly above the key. These labels allow the operator to easily determine the function of each key as its displayed.

MORE
Immediately to the right of the function keys is the MORE key. It is used when there are more functions to view than there are function keys. The key's functions and their corresponding display labels are changed as a group each time the MORE key is pressed.

CALIBRATION KEY.
The CAL key allows the user to enter the top calibration menu. Pressing the appropriate Function key under the labels will select that calibration mode.

ACKNOWLEDGE KEY.
The ACK key is used to acknowledge certain operating conditions, such as a shutdown, and to hide the alarms from view. When pressed to acknowledge alarms, the alarm condition will be hidden and the label in the upper right of the display will alternate with "ALM". The other function of this key is "0" during numeric entry.

SILENCE KEY.
The SIL key is used to silence an audible alarm, if such an output is selected. The other function of this

ESCAPE KEY.
The ESC key is used to cancel a function or procedure such as a calibration or counting belt pulses. Pressing the ESC key will not change the operating mode (RUN, OFF) of the instrument. The user will be asked to acknowledge the ESC request in many cases by pressing the "YES" key.

MENU KEY.
The MENU key is used to enter the top menu screen. From the top menu, the user is prompted to select what type of action will be done in the menu.

SPECIFICATION	
Input Power Requirements	
Voltage Range	120 to 240 VAC
Frequency Range	50-60 Hertz
Phase Requirement	Single Phase
Power Consumption	<43 W
Supply Protection	Fused
Environmental Requirement	
Area Classification	Non-Hazardous
Operating Temperature	14 to 149 degree F (-10 to + 65 degree C_
Operating Humidity	10 to 90% non-condensing
Storage Temperature	-4 to 185% (-20 to +85 degree C)
Storage Humidity	5 to 95% non-condensing
Altitude Operational	Up to 2000 Meters
Altitude Storage	Up to 3000 Meters (70 kPa)
Cooling Method	Natural Convection
Pollution Degree	2
Standards Dimensional Requirements	Type IP23, 8.0" H x 6.0" W x 4.5" D (203.2 mm x 152.4 mm x 114.3 mm)
	Type IP66, 11.81" H x 9.84" w x 5.91" D (300 x 250 mm x 150 mm)
Agency Approvals	Underwriters Laboratories, UL File #E208487

I/O Configuration

- Three user configurable DIGITAL INPUTS are provided to allow the user to remotely control selected features and functions of the S52c. Each input is independent of the other. the same function should not be programmed to more than one input. The user must provide a contact closure of sinking 10 mA @ 12 vdc between the appropriate input terminals.
- Three User configurable DIGITAL OUTPUTS are provided to allow the user to remotely monitor the operation of the feeder. Each output is independently programmed and asserted. More than one output may be assigned the same function if needed.
- One user configurable ANALOG INPUT (current (4020 mA, fixed) is available to bring analog signals into the instrument as needed.
- One user configurable ANALOG OUTPUT (current 4-20 mA, Fixed) is available.

Available Digital Inputs:	
Acknowledge	Performs the function of pressing the ACK key on the S52c keypad
ATL Input	Used to provide feedback with ATL
Auto/Manual	Toggles the controller between Manual (OFF) and Automatic (ON) modes of operation
Auto Calibrate	Assert to perform an Auto Calibration Cycle
Auto Zero	Initiates a single (momentary) or continuous (maintained Auto Zero calibration)
Belt Limit Switch	The state of this input is passed to the communications table and Belt Mistracking output
Manual Refill	Initiates a manual Fill if possible
Not Used	Disables Digital input
OI Lock	When asserted disables display keys that may change the operation of the instrument such as menu parameters, setpoint and calibration.
Remote Run	Puts the controller into the RUN mode if possible
Reset ALL Totalizers	Resets ALL internal totalizers to zero (momentary)
Resets Preset Counter	Resets the Preset Counter function AND Totalizer #2,
Resets Totalizer #1	Resets totalizer #1 (momentary)
Resets Totalizer #2	Resets totalizer #2 (momentary)
Silence	Performs the function of pressing the SIL key on the display
Not used	Disables Digital Input
Available Digital Outputs:	
Alarm Common	Asserted when a programmed alarm condition occurs
Alarm Audible	Output assigned to a horn or bell for an alarm condition. Deactivated ny the ACK key or SIL key.
Alarm Low Load	Activated when the loading is below the programmed trip point
Alarm High Level	Activated when the loading is above the programmed trip point
Alarm Low Speed	Asserted when a programmed Low Speed alarm occurs
Alarm High Speed	Asserted when a programmed High Speed alarm occurs
Alarm Low Load	Assert when the Drive Output exceeds programmed value
Alarm Low Rate	Activated when the flow rate is below the programmed trip point
Alarm High Rate	Activated when the flow rate is above the programmed trip point
ATL Output	Asserted when ATL is to be in the Test Load position
Auto Calibrate	Asserted during an Auto Calibration Cycle
Auto Span	Asserted during the Span portion of a calibration
Auto Zero	Asserted during the Auto Zero Cycle
Belt Limit Switch	Asserted when Belt Limit Switch (belt mistracking) input is closed
Busy	Asserted when the instrument is performing a function that prevents it from entering the RUN mode
Calibration Done/Error	Asserted at the end of a calibration cycle
Running	Asserted when the instrument is running

Available Digital Outputs Continued:	
Calibration Running	Asserted while in the calibration mode
Deviation Alarm	Asserted when the process variable deviates from the set point
Drive Fault (motor starter)	Asserted when attempting an operation requiring the belt to be in motion and the drive fault is open.
Factory Default Values in use*	Asserted whenever menu parameters match the factory default values
Limber Moved	Asserted when conditions for belt limbering are met
Preset Counter Alarm	Asserted when the preset counter is exceeded by the alarm value
Preset #1 Done	Asserted when Preset #1 value is reached
Preset #2 Done	Asserted when Preset #2 value is reached
Preset Counter Done	Asserted when both presets and done Time have been reached
Preset Counter Running	Asserted until both presets have been reached
Remote Setpoint	Asserted when the setpoint origin is Analog
Sampling Control	Asserted when the instrument is running a sampling control cycle
Sampling Hold	Asserted when the instrument is running a sampling hold cycle
Shutdown	Asserted when shutdown has occurred. Cleared by the ACK Key
Shutdown Audible	Output assigned to a horn or bell for a shutdown condition. Deactivated by the ACK key or the SIL key.
Tachometer>zero	Asserted when the speed is above zero
Not Used**	Disables Digital Output
	*Output only available on Digital Output #3 **When Not Used is selected for digital output, the state of that output can be controlled via communications.
Available Analog Inputs	
Master Demand	Represents 0-100% of the master portion of the ratio setpoint.
Not Used	Disables Analog input
Setpoint	Represents 0-100% of the external setpoint.
Available Analog Outputs	
Drive Output	Represents 0-100% of the drive output signal
Load	Represents 0-100% of the Loading at the discharge point
Not Used	Disables Analog output
Rate	Represents 0-100% of the rate
Setpoint	Represents 0-100% of the Setpoint
Speed	Represents 0-100% of the Discharger Speed.
* Output only available on Digital Output #3	
** When NOT USED is selected for a digital output, the state of the output can be controlled via communications. See appropriate communications manual for location of bits.	

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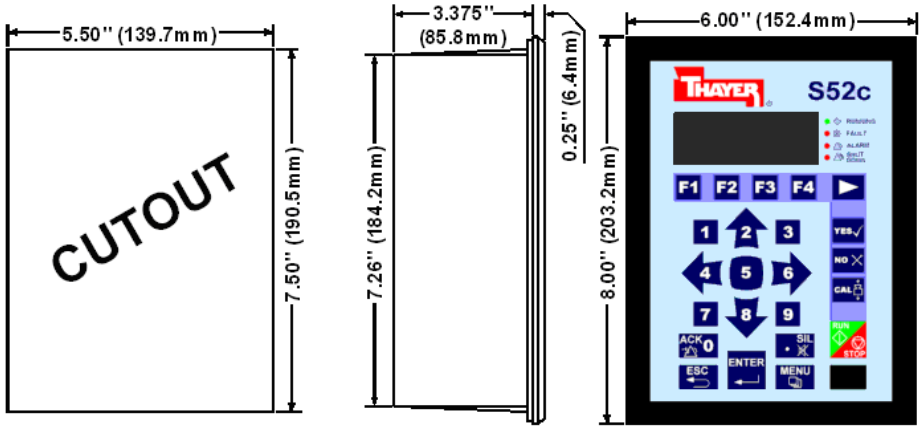
Communication Options:

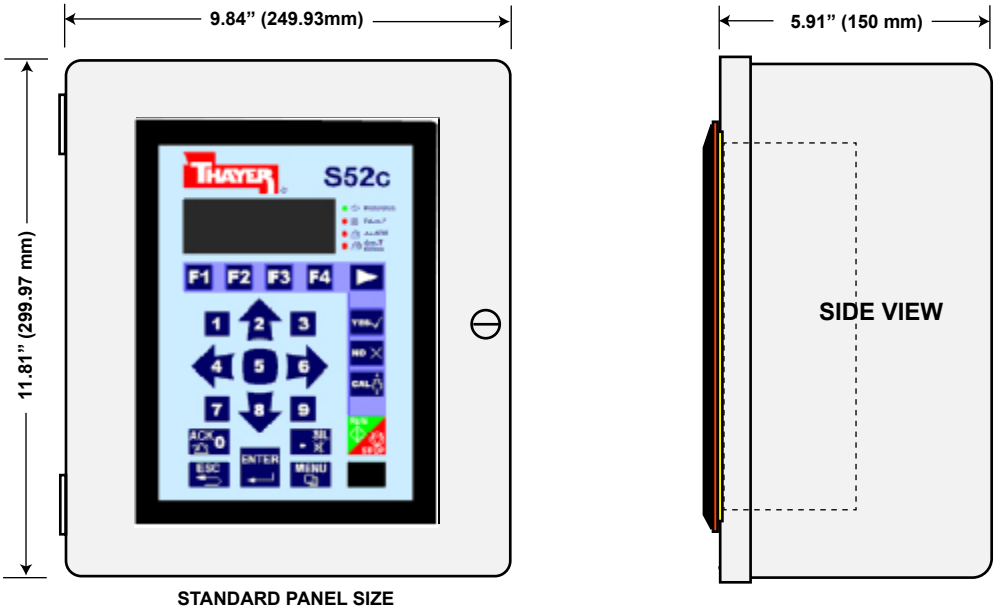
- DeviceNet,
- PROFIBUS,
- Ethernet/IP & MODBUS/TCP
- Q2 – Allen-Bradley DF1 and MODBUS RTU.

Allen-Bradley PROFIBUS Modbus® EtherNet/IP DeviceNet

PANEL MOUNT



ENCLOSURE MOUNT



STANDARD PANEL SIZE

MADE IN USA

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