Frequency Counter

S664 Frequency Counter

- ***Software Functions Include: 4 Different Display Resolutions/Ranges***
- ***Screw Terminal Connectors for Easy Installation***
- ***Rugged, High-Impact Plastic Case Fits Standard 1/8 DIN***
- ***3.24" (82mm) for Restricted Space Behind Panel***
- ***Input Variety: Quadrature, Switch, TTL, NAMUR, CMOS, PNP, NPN***



This counter offers a wide input frequency range from 1Hz to 35KHz, and four display ranges of 99.99Hz, 999.9Hz, 9999 Hz, and 35KHz.

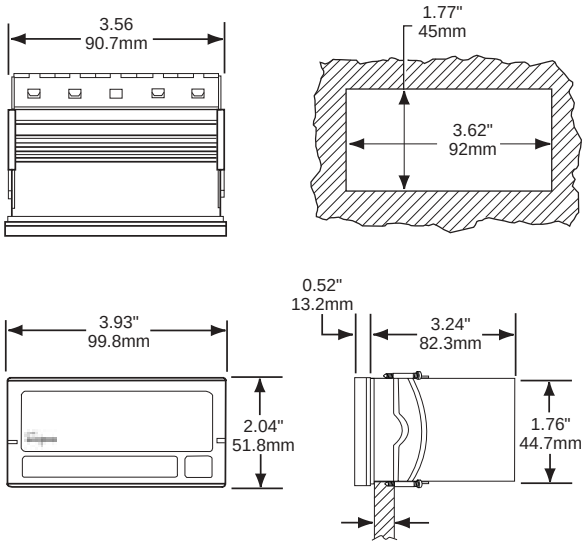
The easiest to use counter in the S660 counter series, the S664 offers 12VDC, 100mA sensor excitation and requires no programming to use.

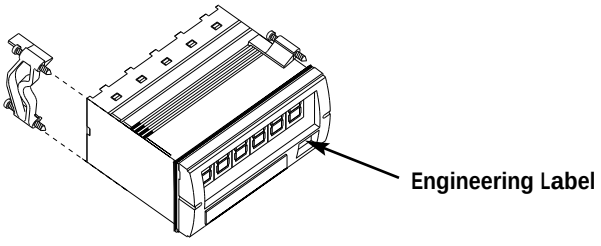
After the counter is mounted and wired, selecting the appropriate frequency range is the only setup required.

One of four frequency ranges may be selected to measure from 1Hz to 35KHz.

The S664 is compactly designed and features a standard 1/8 DIN case made of PBT-ABS alloy. Screw terminals are standard for easy installation and removal of the meter.

Installation and Panel Cutout





Mounting Requirements
The S660 series 1/8 DIN counters require a panel cutout of 1.77" (45mm) high by 3.62" (92mm) wide. To install the counter into a panel cutout, remove the clips from the side of the meter. Slide the meter through your panel cutout, then slide the mounting clips back on the meter. Press evenly to ensure a proper fit.

Engineering Label Placement
If replacement of the engineering unit label is required, place the tip of a ball-point pen into the small hole at the base of the engineering label in the bezel. Slide the label up until it pops out. Grasp and remove. Slide the new label half the distance in, then use the ball-point pen to slide it down into place.

Specifications

DISPLAY
Type: 4-digit, 7-segment, red LED
Height: 0.56" (14.2mm)
Decimal Point: Position according to scale selection
Count Direction: "+" indication implied, "-" indication displayed
Display Range: -999 to +9999

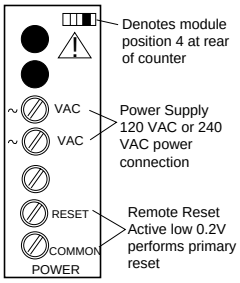
POWER REQUIREMENTS
AC Voltages: 120, 240VAC, ±10%
Power Consumption: 3VA

INPUT RATINGS
Current Sinking: 10KΩ 5% Resistor pull-up to (9.0 - 16 VDC) ±10%
Current Sourcing: 5.1KΩ 5% Resistor pull-down to common
Minimum Pulse Width: ~2μs
Low Pass Filter: <200Hz
Low Bias: VLT = 1.6V ±10%
VUT = 3.6V ±10%
High Bias: VLT = 5.0V ±10%
VUT = 7.0V ±10%
Count Rate: 35KHz (Pulse Max) 8.75KHz (Quadrature X4 Max)
Maximum Voltage Input
A, B, and User: 30VDC (Max)

ENVIRONMENTAL
Operating Temp.: 0°C to +40 °C
Storage Temp.: -10 °C to +60 °C
Relative Humidity: 0-80% for temperatures less than 32°C, decreasing linearly to 50% at 40 °C
Ambient Temperature: 25°C
Temp. Coefficient (per °C): ±100PPM/ °C
Warmup Time: 15 minutes

MECHANICAL
Bezel: 3.93" x 2.04" x .52" (99.8mm x 51.8mm x 13.2mm)
Depth: 3.24" (82.3mm)
Panel Cutout: 3.62" x 1.77" (92mm x 45mm)
Case Material: PBT-ABS
Weight: 9oz (255.1g)

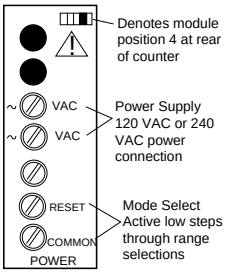
Wiring Diagram



AC Power Module

Power Module: The AC power module allows the S664 to be operated from standard 50/60Hz line power. The power module will be configured as 120 or 240VAC per markings on the back panel. Ensure the input rating of the supply matches your line voltage. The power supply module has provisions for a hard-wire Count Reset. This control can be a switch, relay contact or solid state device. The reset circuit is independent of the power circuit.

Input Module: The DIP switch SW1 is used to set up the counter to conform to the electrical characteristics of the sensor or signal being detected. Switch positions 1-3 configure channel B, while switches 4-6 configure channel A. These switches select bias (threshold voltages), low pass filter (enable/disable) and sensor type (sink or source). Refer to the sensor's documentation for related information.



Standard Input Module

Note: The input boards are designed so that selecting sourcing or sinking is based on the type of sensor that is being used. If a PNP (sinking) sensor is being used, set the input board for sinking also (switches 3 and 6 = OFF). If channel B is not used, default settings for switch positions 1 through 3 should be selected.

The Input module also provides for a user input signal. On the S664, this input serves as a display hold. While active, the rate value shown on the display is "frozen." Internal measurements and output controls continue to operate.

Programming

The S664 allows for Rate (Frequency) Scaling and display. The S664 can measure frequencies ranging form 1.00Hz to 35KHz.

The frequency scale is selected according to the following table. The frequency range is selected by using a wire or switch across the RESET and COMMON terminals on the rear of the counter. The range prompt (scl 1) will toggle each time the contact is made.

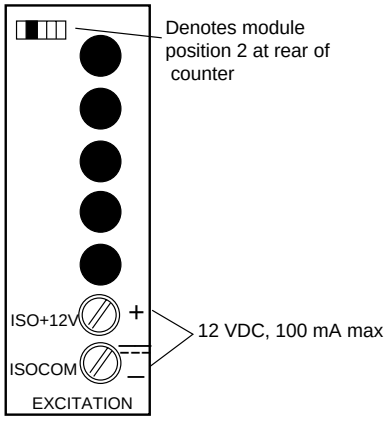
Frequency can also be displayed as a signed entity and will be negative according to the direction control.

Range	Typical Update Period	Maximum Update Period	Minimum Input Frequency	Maximum Input Frequency	Comments/Typical Application
scl1	1.0 sec	3.0 sec	1.00Hz	99.99Hz	1/100Hz resolution/measure signals less than 100Hz
scl2	1.0 sec	2.0 sec	1.6Hz	999.9Hz	1/10Hz resolution/measure signals less than 1KHz
scl3	0.5 sec	1.0 sec	4Hz	9999Hz	1Hz resolution/measure signals less than 10KHz
scl4	0.5 sec	1.0 sec	0.01KHz	35.00KHz	0.01KHz resolution/measure signals in KHz

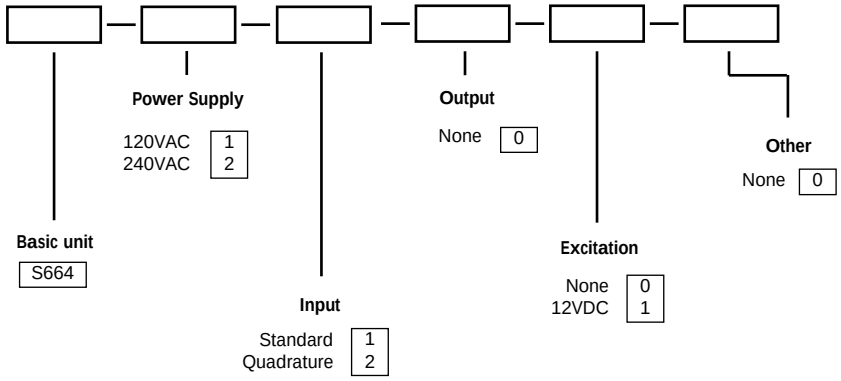
Excitation Output

The Excitation Module can supply 12VDC at up to 100mA for external sensors or encoders. This excitation is isolated from the counter internal logic supply.

When using sensors or encoders that do not have a signal return, or imply a signal return that is in common with the supply voltage, a common attachment that ties the excitation supply to the logic input common may be required.



Ordering Information



Safety Symbols

The WARNING sign denotes a hazard. It calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury.

The CAUTION sign denotes a hazard. It calls attention to an operating procedure, practice, or the like, which, if not correctly adhered to, could result in damage to or destruction of part or all of the instrument.

Accessories





SE Quadrature Encoder

The cube-style, dual-shaft SE Encoder is available with a choice of five different resolutions (pulses/revolution) to handle a broad range of measuring jobs. When the encoder is affixed to a chariot with measuring wheels and wired to one of the S660 series counters, cut-to-length measurement applications are assured an accurate and reliable reading.

Pulses Per Revolution	Catalog Number
60	SE-060
100	SE-100
120	SE-120
360	SE-360
600	SE-600

Flexible Shaft Couplings

The one-piece flexible coupling connects the shaft of a cube-style encoder to an ancillary equipment shaft without worry of misalignment or rotary frequency. The coupling ensures minimum windup, minimum rotary oscillation and no hysteresis.

Description	Catalog No.
Coupling: For connecting an encoder to a 3/8" shaft	46002
Coupling package: For connecting an encoder to 1/4" or 5/16" diameter shaft*	46003

*Package includes: One flexible coupling (1/2" I.D.) and three reducing inserts (1/4", 5/16", 3/8").