Specifications

OUTPUTS

Ranges	
Current:	0.0 to 20.0mA DC in 1mA steps
Voltage:	0.0 to 10.0V DC in 1V steps
Accuracy at 25°C	
Current:	+/- 0.05mA DC
Voltage:	+/- 0.05V DC
Load Impedance	
Current:	300 ohms maximum
Voltage:	1000 ohms minimum
External mA Transmitter Source	
Voltage:	12V minimum to 30V peak maximum

RAMPING

Manual	Anywhere in range
Auto	
Values:	User adjustable Min. & Max. values anywhere within range
Step Time:	User adjustable from 1 to 20 seconds, in 1 second increments

DISPLAY

Numerical	LCD, 00.0 to 99.9, 0.59"H (15mm)
Annunciators	"RAMP", "OVER LOAD", "mA", "V", "TIME", and symbol for low battery
Blue Backlight	Energized with momentary side switch

ENVIRONMENT

Operating	32 to 122°F (0 to 50°C)

POWER

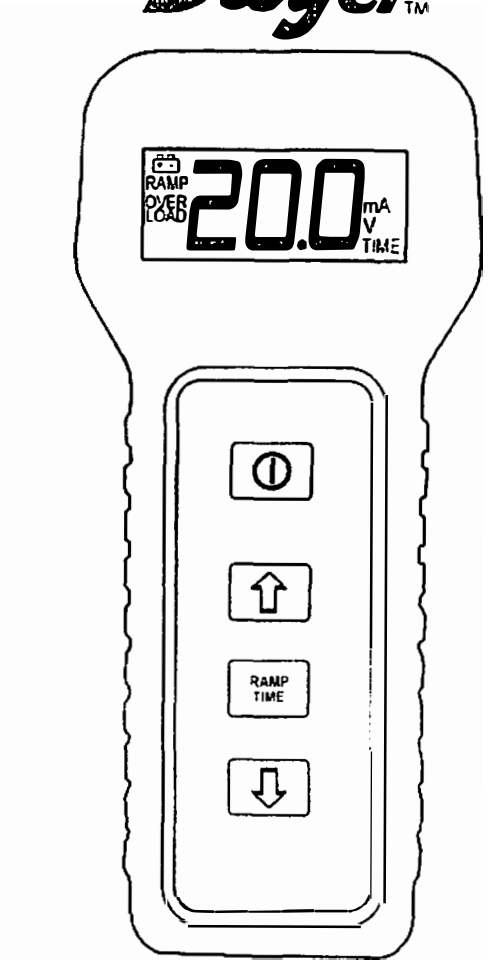
9V Battery	NEDA1604, JIS006P, or IEC6F22 (Duracell MN1604 or equivalent) Up to 30 hours continuous use
Low Battery	Indicator comes on below approximately 7 volts
120 V AC	Plug-in 9V DC output supply for bench-top use
Auto Power Off	User adjustable delay time from 1 to 20 minutes after last key press Can also be disabled

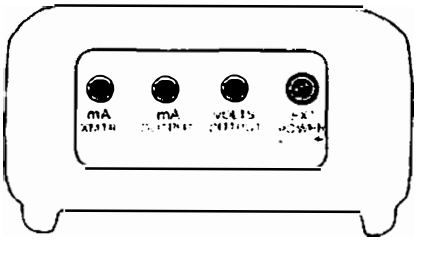
MECHANICAL

Dimensions	5.5"H x 2.5"W x 1.4"D (140H x 63.5W x 35.6D mm)
Weight	6 oz (170 g)

USER'S GUIDE
Model CSG
Current & Voltage Calibrator

Dwyer™





Operating Instructions

POWER ON/OFF

Make sure that the battery is installed or the AC adapter is plugged into the EXT POWER jack. The AC adapter disconnects the internal battery.

To turn the CSG on, press and hold the upper red ON/OFF button for at least 2 seconds. The LCD annunciators will cycle and then hold steady when the CSG is turned on.

To turn off, press and hold the ON/OFF button for 5 seconds until "TIME" annunciator is displayed.

SELECTING OUTPUT MODE

Plug the test lead assembly into the appropriate output jack as shown below. If the test leads are plugged into the mA XMTR or mA OUTPUT jack, or no leads are plugged in, "mA" will turn on. If the load resistance is too high or the leads are left open, "OVERLOAD" will turn on. If the leads are plugged into the VOLTS OUTPUT jack, "V" will turn on. If the load resistance is too low or the leads are shorted, "mA" may stay on or turn on.

Fig 1. Voltage Output

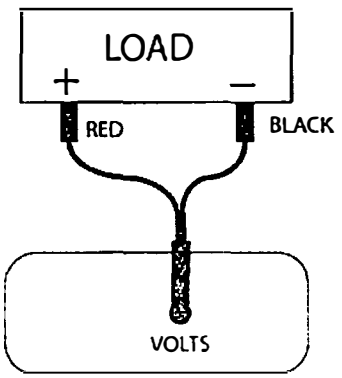


Fig. 2 mA Source Output

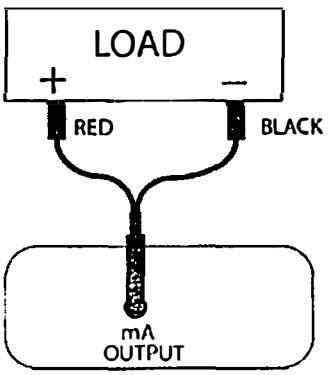
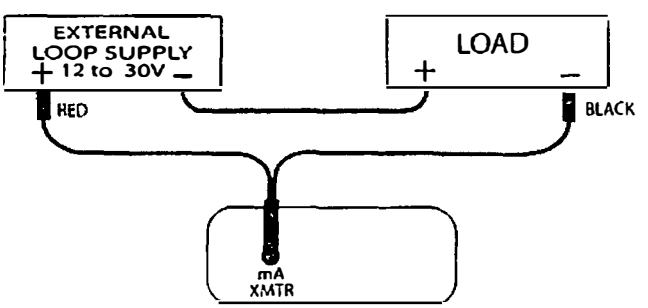


Fig 3. Simulate a 2-Wire mA Transmitter Loop With External 12 to 30V DC Supply. A similar connection can be used to extend output range of CSG beyond 300 ohms A 24V source will allow CSG to source into an impedance of >1000 ohms.



MANUAL SELECTION OF OUTPUT LEVEL

To increase the output, press the ⇧ key. To reduce the output, press the ⇩ key. New output value will be displayed on the display.

AUTO RAMPING

The output is preprogrammed to ramp between 4 to 20 mA (or 2 to 10V) and back in 1.0 mA (or 1.0 V) steps, with 5 seconds between each step. See below to change the ramp end points and step time interval.

To start ramping the output, press the RAMP/TIME key for 2 seconds. "RAMP" will turn on and the output will start ramping within the minimum and maximum values programmed into the CSG. It will start at the output value manually set on the CSG before the key is pressed.

To stop the ramping and return to manual mode, press the RAMP/TIME key again.

CHANGING THE AUTO RAMPING END POINTS AND STEP TIME

Press and hold the RAMP/TIME key, and immediately (within 2 seconds) press the ⇩ key without releasing the RAMP/TIME key until "RAMP" and "TIME " turn on. "mA" will turn off. Set the time duration for each step increment from 1.0 to 20.0 seconds, in 1.0 second increments by using the ⇧ and ⇩ keys.

To store the desired time interval, press the RAMP/TIME key again. "TIME" will turn off and the appropriate "mA" or "V" will flash. "RAMP" will remain on.

Set the first end point by using the ⇧ and ⇩ keys. To store the first end point, press the RAMP/TIME key again. The appropriate "mA" or "V" and "RAMP" will flash.

Set the second end point by using the ⇧ and ⇩ keys. To store the second end point and exit the programming mode, press the RAMP/TIME key again. The second value stored will be displayed along with the appropriate "mA" or "V".

SETTING THE AUTO POWER OFF DELAY TIME

With the unit ON, press and hold the RAMP/TIME key, and immediately (within 2 seconds) press the ⇧ key without releasing the RAMP/TIME key until "TIME" turns on. All other annunciators are off. Set the time delay from the last key press until the unit automatically turns OFF by using the ⇧ and ⇩ keys The time delay can be set from 1.0 to 20.0 minutes in 1.0 minute increments. If the delay time is set to 00.0 minutes, the Auto Power Off Delay function is disabled This is useful when the unit is used on a bench with the AC adapter

To store the desired time delay, press the RAMP/TIME key again. "TIME" will turn off and the appropriate "mA" or "V" will turn on