

# GRAND Series Large Digit Displays

2", 4", 6", 8" or 11" Digits • Meters • Counters • Clocks • Timers  
Remote Displays for Computers or PLCs



## Features

- Choice of 2", 4", 6", 8" or 11" digits for reading distances up to 440 ft.
  - Choice of normal or outside viewing brightness.
  - Choice of signal types: process, load / weight, rate / frequency, totalizer, serial data, BCD data, 24-hour clock, elapsed time.
  - Choice of 95-265 Vac or 11-30 Vdc power.
  - Choice of RS232/422/485 or dual relay outputs.
  - Choice of mounting methods: panel mount, wall mount, hanging, outdoor-rated weather cowl.
  - Choice of enclosure colors: white or black.
  - Sealed to NEMA-4 (IP65) for 2", 4" & 6" versions.
  - Sealed to NEMA-12 (IP54) for 8" & 11" versions.
  - Heavy Industrial noise immunity.
  - Remote programming unit.
  - Safety certified (CE Mark).
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## Description



**Oversize digits for long viewing distances.** Grand Series large digit displays are your flexible solution when a display needs to be viewed over distances as long as 440 feet (134 m). A rule of thumb is that viewing distance in feet is 40 times the digit height in inches, or in metric terms, that viewing distance in meters is digit height in millimeters divided by 2.

**Five digit heights are available:** 57 mm (2.2"), 102 mm (4.0"), 144 mm (5.7"), 200 mm (7.9"), and 280 mm (11.0"). Solid segments are used for normal brightness 2.2" and 4.0" digits. Individual 5 mm LEDs are used for larger digits and outdoor brightness versions.

**Versions for indoor industrial environments.** Depending on the selected digit size and mounting location, a Grand Series display with normal brightness LEDs can be read across an entire plant floor, keeping the workforce aware of important variables without having to leave their work areas to view a small computer screen or control panel. Sealed to IP65 (NEMA-4X), Grand Series Displays are complete functional units, with all the necessary signal conditioning, power supply and display circuitry. Just apply power (95-265 Vac or optionally 11-30 Vdc), connect your input signal, and

display your reading. There is a choice of mounting options: panel mount, wall mount, pole mount, or suspension mount.

**Versions for outdoor locations.** Grand Series Displays are available in outdoor versions complete with outdoor brightness LEDs and an IP65 (NEMA-4X) rated weather cowl. They can be read across an industrial yard, parking lot or roadway, for example to display vehicle load or the number of available parking spaces.

**Signal options.** Grand Series Displays are available with input circuitry for process signals (e.g., 4-20 mA), load cell / weight, rate / frequency, totalizing, clock, elapsed time, serial data, and BCD data. For example, in a plant environment, a large-digit display can show process variable such as temperature or pressure, or throughput related parameters such as flow rate, line speed, number of units produced, or elapsed time. The display of temperature requires an external 4-20 mA transmitter or a [Laureate DPM](#) with a linearized 4-20 mA analog output. As an alternative to displaying sensor data, Grand Series Displays can display a number transmitted as serial data from a computer or PLC.

**Output options** are RS-232/422/485 serial data and dual 2A relays for alarm.

**Programming** is by means of a Remote Programmer, which provides three contact switches labeled MENU, SELECT and INCR. The Remote Programmer is at the end of a cord, avoiding the need to climb a ladder to access the display.



# Display Functions

## Process Signal

Number of digits	5
Display format	-19999 to 99999, digitally scalable.
Signal types	4-20 mA, 0-20 mA, 1-5 V, 0-10 Vdc
A/D resolution	1 part in 19999
Accuracy	±0.02% of range
Excitation output	13 Vdc at 60 mA, non-isolated
Special features	Selectable filtering. Remote scaling. Last-digit round-off (or count-by) in steps of 1, 2, 5 or 10. Remote contact auto-tare.

## Load / Weight / Strain Gauge

Number of digits	5
Display format	0-99999, digitally scalable.
Signal types	Direct connection to load cells or strain gages.
A/D resolution	-19999 to 99999
Accuracy	±0.02% of range
Excitation output	5 Vdc at 60 mA, non-isolated.
Special features	Selectable filtering. Remote scaling. Last-digit round-off (or count-by) in steps of 1, 2, 5 or 10. Remote contact auto-tare.

## Rate / Frequency

Number of digits	5
Display format	-19999 to 99999, digitally scalable.
Signal type	NPN, PNP, 5V TTL/CMOS, 24V pulses, contact closures.
Max frequency	10 kHz without debounce, < 10 Hz with debounce.
Accuracy	0.01% of range
Crystal tempco	20 ppm/°C
Input resistance	2200 ohms
Excitation output	13 Vdc at 60 mA, non-isolated.

## Totalizer

Number of digits	5 or 7
Display format	-19999 to 99999 or -1999999 to 9999999, digitally scalable.
Signal type	NPN, PNP, 5V TTL/CMOS, 24V pulses, contact closures.
Max frequency	10 kHz without debounce, < 10 Hz with debounce.
Accuracy	No scaling or offset errors.
Input resistance	2200 ohms
Excitation output	13 Vdc at 60 mA, non-isolated.
Special features	Zero & scale adjustable remotely. Divide-by or multiply-by scale factors available. Decimal point position selectable.

## Time-of-Day Clock

Number of digits	4 or 6 plus colon dividers.
Display format	HH:MM or HH:MM:SS
Time triggers	NPN, PNP, 5V TTL/CMOS, 24V pulses, contact closures.
Time base	Crystal with 20 ppm/°C tempco.
Special features	Also accepts serial data.

## Elapsed Timer

Number of digits	4 or 6 plus colon dividers.
Display format	MM:SS, HH:MM, HH:MM:SS
Time triggers	NPN, PNP, 5V TTL/CMOS, 24V pulses, contact closures.
Time base	Crystal with 20 ppm/°C tempco.
Special features	Also accepts serial data.
<b>Serial Data Input</b>	
Number of digits	5 or 7
Display format	0-99999 or 0-9999999
Data types	RS-232, RS-422, RS-485, 20 mA TTY (jumper selectable).
Data rates	300, 600, 1200, 2400, 4800, 9600 bps (jumper selectable).
Data format	8 data bits, no parity, 1 or more stop bits.
Handshake	Not required. Unit always ready for data.
Special features	May be user configured to display sub-strings. Profibus version available with digit heights above 57 mm.

## Dimensions & Weight

Digit height	57 mm 2.2"	102 mm 4.0"	144 mm 5.7"	200 mm 7.9"	280 mm 11.0"
Case WxH, 5 digits	288x120 11.3"x4.7"	480x168 18.9"x6.6"	624x192 24.6"x7.6"	824x248 32.4"x9.8"	1172x336 46.1"x13.2"
Case WxH, 7 digits	384x120 15.1"x4.7"	672x168 26.4"x6.6"	864x192 34.0"x7.6"	1140x248 44.9"x9.8"	1606x336 63.2"x13.2"
Case depth	90 mm 3.54"	90 mm 3.54"	90 mm 3.54"	90 mm 3.54"	90 mm 3.54"
Weight, 5 digits	2.5 kg 5.5 lbs	4.5 kg 9.9 lbs	5.5 kg 12.1 lbs	7.0 kg 15.4 lbs	12.0 kg 26.4 lbs
Weight, 7 digits	3.0 kg 6.6 lbs	5.0 kg 11.0 lbs	6.0 kg 13.2 lbs	8.9 kg 19.6 lbs	13.5 kg 29.8 lbs

## General Specifications

<b>Relay Outputs</b> (optional)	
Number of relays	2
Relay type	Single pole, single throw (SPST).
Contact rating	2A at 250 Vac, resistive load.
Relay action	Selectable normally open or normally closed. Selectable HI or LO alarm. Adjustable hysteresis.
<b>Serial Data Output</b> (optional)	
Signal type	RS-485
Output rate	1 sec intervals
Data format	1 start bit, 8 data bits, 1 stop bit.
Data rate	300, 1200, 2400, 9600 bps (selectable)
Handshake	Not required. Unit always ready for data.

<b>Remote Programmer</b>	
Number of buttons Switch action Switched signal	3 Normally open, momentary close. 5 Vdc at 1 mA
<b>Power</b>	
Voltage Power consumption	95-265 Vac or 11-30 Vdc (as ordered) 20 W typical
<b>Mechanical</b>	
Case material Gasket material Sealing screws	uPVC Neoprene Stainless steel
<b>Environmental</b>	
Operating temperature Storage temperature Humidity, 2" - 6" digit heights Humidity, 8" - 11" digit heights	-10 to +50°C (14 to 122°F) -14 to +60°C (0 to 140°F) 0-100% RH. Sealed to IP65 (NEMA-4) 0-95% RH. Sealed to IP54 (NEMA-12)

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## Weather cowl option



A weather cowl is recommended for outdoor installation, and will protect the display from sun, rain and snow. It may be wall mounted or pole mounted, and can be swiveled for optimum horizontal viewing angle. The housing is environmentally sealed to NEMA-4X (IP65). It is made of matt black-finished aluminum.

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## An example of a large display



This panel provides collection and load information to truck drivers. It contains two daylight viewable displays with 6" high digits, legible from 240 feet away. The displays show data values transmitted over an RS-422 data link from a central PLC.

## Ordering Guide

### GRAND Series Large Digit Displays

<b>Base Model</b>	<b>G02</b> 2.2" Digit Height	\$875				
	<b>G04</b> 4.0" Digit Height		\$1,275			
	<b>G06</b> 5.7" Digit Height			\$1,525		
	<b>G08</b> 7.9" Digit Height				\$1,975	
	<b>G11</b> 11.0" Digit Height					\$2,540
<b>Display Brightness</b>	<b>0</b> Normal Indoor brightness	NC	NC	NC	NC	NC
	<b>1</b> Daylight viewing brightness	90	90	90	90	85
<b>Power</b>	<b>0</b> 95-265 Vac	NC	NC	NC	NC	NC
	<b>1</b> 11-30 Vdc	95	95	95	95	95
<b>Output</b>	<b>0</b> None	NC	NC	NC	NC	NC
	<b>1</b> Two 2A Relays	85	85	85	85	85
	<b>2</b> RS-422 Ouput	85	85	85	85	85
<b>Mounting</b>	<b>0</b> Black panel mount	NC	NC	NC	NC	NC
	<b>1</b> White panel mount	NC	NC	NC	NC	NC
	<b>2</b> Black wall mount	NC	NC	NC	NC	NC
	<b>3</b> White wall mount	NC	NC	NC	NC	NC
	<b>4</b> Black suspension mount	NC	NC	NC	NC	NC
	<b>5</b> White suspension mount	NC	NC	NC	NC	NC
	<b>6</b> Black Weather Cowl for 4 or 5 Digits.	150	180	215	250	factory
<b>7</b> Black weather Cowl for 6 or 7 Digits.	190	235	250	factory	factory	
<b>Input Type</b>	<b>SER5</b> 5-Digit Display, Serial ASCII Input	NC	NC	NC	NC	NC
	<b>SER7</b> 7-Digit Display, Serial ASCII Input	120	180	245	475	330
	<b>CLK4</b> 4-Digit Clock Display, HH:MM	40	40	40	40	40
	<b>CLK6</b> 6-Digit Clock Display, HH:MM:SS	155	215	275	510	360
	<b>TIM4</b> 4-Digit Timer Display, HH:MM	20	20	20	20	20
	<b>TIM6</b> 4-Digit Timer Display, HH:MM:SS	140	195	260	490	340
	<b>P</b> 5-Digit Process Signal, 4-20 mA = 0-10000	95	95	95	95	95
	<b>P1</b> 5-Digit Process Signal, Custom Scaling. <i>Specify min input, min reading, max input, max reading.</i>	110	110	110	110	110
	<b>SG</b> 5-Digit Strain Gage / Load Cell, 0-20 mV = 0-10000	115	115	115	115	115
	<b>SG1</b> 5-Digit Strain Gage / Load Cell, Custom Scaling. <i>Specify min input, min reading, max input, max reading.</i>	130	130	130	130	130
	<b>TOT5</b> 5-Digit Display, Totalizer	115	115	115	115	115
	<b>TOT7</b> 7-Digit Display, Totalizer	240	275	350	590	350
	<b>FR</b> 5-Digit Scalable Ratemeter	115	115	115	115	115

**Add-on** **GRP** Remote Programmer (required)

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