General Specifications

Model SPLR
Programmable Computing Unit

YEWSERIES 80

GS 01B04L03-E

This SPLR Programmable Computing Unit has the computing power of about ten conventional analog computing units, and can perform complex compensation computations as well as control-related computations.

- *Powerful computational functions.*
- *Analog I/O levels switch selectable 1 to 5 V, 0 to 5 V or 0 to 10 V DC.*
- *Can handle digital signals as well as analog signals.*
- *User-set computational parameters/coefficients - e.g. for alarm settings or time constants.*
- *Programming is as simple as programming a calculator.*

■ STANDARD SPECIFICATIONS

Input/Output Signals

Number of Inputs:

Number of Points	Analog Inputs	Contact Inputs
A*	4	0
B*	3	1

*Configuration (A or B) is switch selectable.

Analog Inputs: 1 to 5 V, 0 to 5 V or 0 to 10 V DC
(All inputs are selected by a switch)
input resistance 1 MΩ
(Differential inputs)
Input Conversion Accuracy: ± 0.2% of span.
Status Inputs: Contact (rating at least 5 V DC, 20 mA), or voltage. See table below.

Input Signals	Input Status - ON	Input Status - OFF
For contact signal	Contact closed - source up to 200 Ω	Contact open - source at least 100 kΩ
For voltage signal	Low: - 1 to + 1 V	High: 4.5 to 25 V

Number of Outputs:

	Number of Points
Analog Outputs	2
"Status" Contact Output	1
"Fail" Contact Output	1

Analog Outputs: 1 to 5 V, 0 to 5 V or 0 to 10 V DC
(All outputs are selected by a switch)
Load resistance: At least 2 kΩ (1 to 5 V, 0 to 5 V outputs)
at least 10 kΩ (0 to 10 V output)
Output Conversion Accuracy: ± 0.3% of span.
Contact Outputs: (Status, 1 point; Fail,1 point.)
Transistor Contact Rating: 30 V DC, 200 mA (resistive load). On: Contact closed, Off: Contact open. (Contact open during power failure).

Note: Analog I/O signals are not isolated from each other, but are isolated from power supply. Contact I/O signals are each isolated from other internal circuitry and power supply.

Computational Functions

Function	Function name:	Max. no. of times function may be used in program
General Functions	Addition, Subtraction	*
	Multiplication, Division	*
	Magnitude (absolute value)	*
	Square root	*
	High selector, Low selector	*
	High limiter, Low limiter	*
	10-segment transfer function (break points user-definable) (two functions)	*
	High limit alarms	4
	Low limit alarms	4
	First order lag	4
	First order lead	2
	Dead time, velocity and moving average computations	2 total
	Velocity limiter	2
	Timers	2
	Pulse rate output	1
Logical Functions	AND, OR, NOT	*
	CMP (compare greater than or equal)	*
	Branching, Conditional branching	*
	Signal switching	*

Note: Where limits are indicated by a asterisk "*" above, this means that there is no preset limit.

Computational Parameters/Coefficients: 2 (set by potentiometer in range 0 to 100%) (for general computations).
Setting Accuracy: ± 5.0% of span.
Constants: 19 (for computations) plus 22 for 10-segment line-segment functions. Stored in program EPROM.
Temporary Registers: 4.
Computational Period: 0.2 seconds.

Programming

No. of Program Steps: 99 (control, arithmetic functions and data read/write commands each take one step).
Programming: The SPRG Programmer is connected, and the program is entered using a calculator-like language. The completed program is written to UV EPROM (Erasable Programmable Read Only Memory).

Power-Fail/Restart Functions

For a Power Failure of Up to Approx. 2 Seconds: Status prior to power failure retained.
For a Power Failure of Greater than Approx. 2 Seconds:
Computational functions are initialized and temporary registers are cleared before restarting.

Self-Diagnostic Functions

Computation and Control Abnormalities: "FAIL" lamp lights, "FAIL" contact output opens. (Fail contact is also open during power failure). Manual operation is possible).
Input Signal Abnormalities (Input Overflow, Computational Overflow): "ALM" lamp lights.

Normal Operating Conditions

Ambient Temperature: 0 to 50°C.
Ambient Humidity: 5 to 90% relative humidity (non-condensing).
Power Supply: Two versions, for "100V" (standard) or "220 V" (option /A2ER). Both versions may use AC or DC, without change to the instrument:

Version	100 V	220 V
DC (polarity reversible)	20 to 130 V	120 to 340 V
AC (47 to 63 Hz)	80 to 138 V	138 to 264 V

Maximum Power Consumption: 240 mA (with 24 V DC supply), 12.6 VA (with 100 V AC supply), 15.7 VA (with 220 V AC supply)

Insulation Resistance:
Between I/O Terminals and Ground: 100 MΩ/500 V DC.
Between Power and Ground: 100 MΩ/500 V DC.
Dielectric Strength:
Between I/O Terminal and Ground: 500 V AC for 1 minute.
Between Power and Ground:
1000 V AC for 1 minute (100 V version).
1500 V AC for 1 minute (220 V version).
Wiring:
Signal Wiring to/from the Field: ISO M4 size (4 mm) screws on terminal block.
Power and Ground Wiring:
100 V version: JIS C 8303 two-pin plug with earthing contact. (IEC A5-15, UL498)
220 V version: CEE 7 VII (CENELEC standard) plug.
Cable Length: 300 mm.
Mounting: Rack mounting
External Dimensions: 180 (H) × 48 (W) × 300 ((D); depth behind panel)(mm).
Weight: 2.0 kg.

■ OPTIONS

/NPR: Computing unit-supplied unprogrammed.
/A2ER: For "220V version" power supply.
/NHR: No case, plug-in instrument only. See GS 1B4F2-E to order case separately.

■ MODEL AND SUFFIX CODES

Model	Suffix Codes		Description
SPLR	.....		Programmable Computing Unit
	-100		Always 100
Style Code	*B.....		Style B
Option Codes		/NPR	Unprogrammed
		/A2ER /NHR	220 V power supply Without case

■ TERMINAL CONNECTIONS

Terminal Designation	Description	Terminal Designation	Description
1 2	+ / - Analog input 1	A B	+ / - Analog output 1
3 4	+ / - Analog input 3	C D	+ / - Contact output
5 6	+ / - Analog input 2	F H	+ / - Analog output 2
7 8	+ / - Analog input 4 or contact input	J K	+ / - Fail output

■ ORDERING INSTRUCTIONS

Specify the following when ordering:
1. Model, suffix and option codes.
2. Fill out program worksheets and data sheets if a special user's program is reguired.

■ RELATED EQUIPMENT

Related Instrument

Model SPRG Programmer ..... See GS 1B4W1-E

Related Spare Parts

User's EPROM ..... Part No. AI123LQ