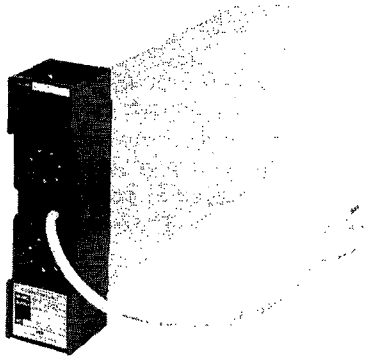
General Specifications

Model SPLR Programmable Computing Unit

YEWSERIES 80

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 5V, 0 to 5V or 0 to 10V 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 5V, 0 to 5V or 0 to 10V 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 5V, 0 to 5V or 0 to 10V DC
(All outputs are selected by a switch)

Load resistance: At least 2 kΩ (1 to 5V, 0 to 5V outputs)
at least 10 kΩ (0 to 10V 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	Funtion 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 "100 V" (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: 240mA (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) X 48 (W) X 300 ((D); depth behind panel) (mm).
Weight: 2.0 kg.

OPTIONS.

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

ACCESSORIES.

1 A fuse, quantity one.

MODEL AND SUFFIX CODES.

Model	Suffix Codes		Description
SPLR	. . . . .		Programmable Computing Unit
	-100		Always 100
Style Code	*B		Style B
Option Codes		/NPR /UPR	Unprogrammed With user's program
		/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. A1123LQ