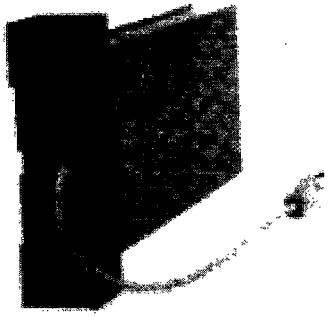
General Specifications

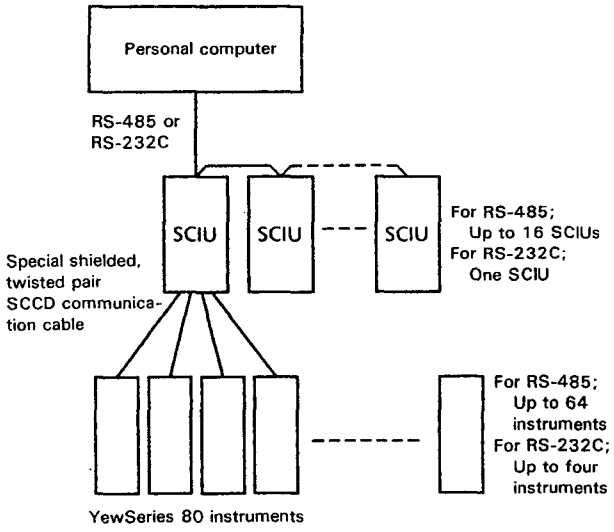
Model SCIU
Communication Interface Unit

Each Model SCIU Communication Interface Unit can link up to four YewSeries 80 instruments to the RS-485 (or RS-232C) bus of a central minicomputer or personal computer. Up to 16 SCIU Units can be connected to the RS-485 bus in a multidrop configuration to allow up to 64 YewSeries instruments to be supervised from the central computer. Simple command strings such as DG (Data Get) from the personal computer are used to access and set data.



COMMUNICATION-SYSTEM CONFIGURATION

Up to 16 SCIU Units can be connected to the RS-485 bus, and one SCIU can be connected to the RS-232C bus. Each SCIU can connect to up to four YewSeries instruments.



COMMUNICATION SPECIFICATIONS

Communication Interface: RS-485 or RS-232C
Transmission Control Procedure: TTY
Synchronization: Start/stop system
Transmission Rate: 300, 600 1200, 2400, 4800, or 9600 bps
Communication Code: ASCII
Text Structure: Single block
Maximum Text Length: 350 bytes (including CR and LF)
Stop Bit: 1 or 2 bits
Error Detection: Vertical Parity (even or odd)
Bit-Transmission Sequence: LSB first
Distance between SCIU and Personal Computer:
1200 m or less for RS-485
15 m or less for RS-232C.

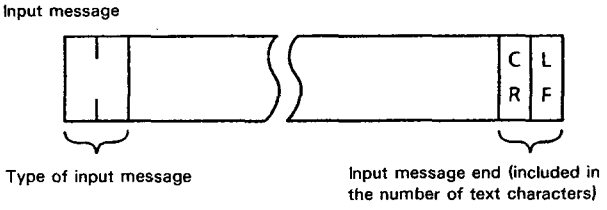
COMMUNICATION FUNCTIONS

(1) **Communication Commands**
Data-acquisition and data-setting commands, and SCIU-status communication commands (WDT time setting, specifications for communications with supervisory system, space suppression, timing adjustment)
(2) **Data Acquisition/Setting Objectives**
Data of YewSeries 80 instuments (setpoints, process variables, manipulated variables, PID parameters, output limit values, loop status, etc.)

GENERAL FUNCTIONS

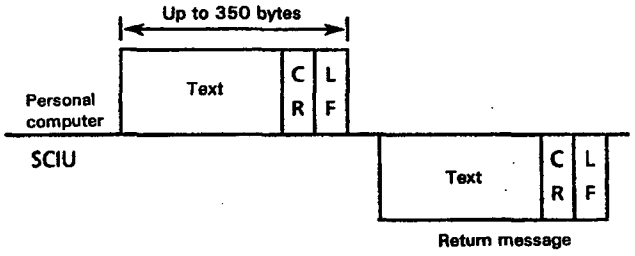
The SCIU converts the "data set" and "data get" commands from the computer to YewSeries format. The computer may set and read YewSeries instrument mode, set and read process data and SCIU status information.

COMMUNICATION MAESSAGE FORMAT

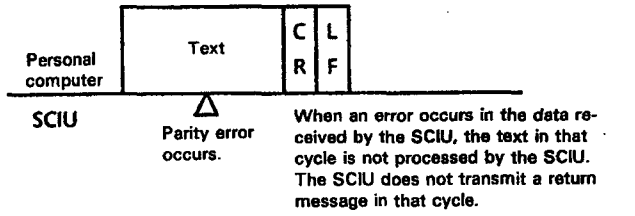


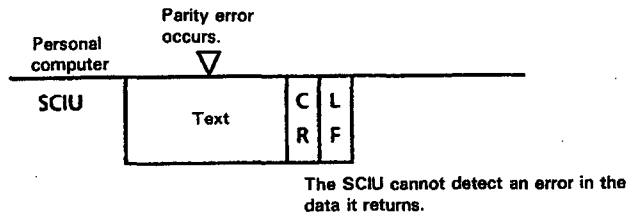
TRANSMISSION CONTROL PROTOCOL

- Normal Transmission



- Transmission Upon Error Occurence





EXAMPLE OF MESSAGE (PROCESS DATA ACQUISITION)

Personal Computer:

DG*n_1␣n_2␣YS01SV␣YS01PV␣ ..... YS01LS CRLF

Requested data 1 / Requested data 2 / Requested data n_2

Return message

DG*n_1␣n_2␣60.0␣61.5␣ ..... ␣AUT CRLF

Return data 1 / Return data 2 / Return data n_2

DG : Data get command
* : Return data space suppression instruction
n_1 : SCIU address (0 to F)
n_2 : Number of requested data
YS01 : YewSeries instrument on channel number 01
SV : YS01 setpoint
PV : YS01 process variable
LS : YS01 operation mode (loop status)
AUT : YS01 operation mode AUTO
CR : Carriage Return (ASCII character)
LF : Line Feed (ASCII character)

INSTALLATION

Installation: Mounted on rack installed indoors
Signal Connection: Terminal connections with ISO M4 (4 mm) screws
Power Connection: Grounded three-prong plug or terminal connection with ISO M4 (4 mm) screws
External Dimensions: (Height × width × depth from the mounting face) 180 × 48 × 300 (mm)
Weight: About 1.8 kg (including rack case)

BASIC PERFORMANCE

Power Consumption: 17 VA for 100 V AC
22 VA for 200 V AC
Max. Operating Current: 240 mA for 24 V DC
Insulation Resistance: 100 M/500 V DC between the communication line, power supply and ground
Withstanding Voltage: 1,000 V AC for one minute (between the power supply and ground), 500 V AC for one minute (between the communication line and ground)

NORMAL OPERATING CONDITIONS

Ambient Temperature: 0 to 50°C
Ambient Humidity: 5 to 90% R.H. (above the dew point)
Supply Voltage: Either DC or AC voltages can be supplied.
- 100 V specifications
  DC drive: 20 to 130 V, no polarity
  AC drive: 80 to 138 V, 47 to 63 Hz
- 200 V specifications
  DC drive: 120 to 340 V, no polarity
  AC drive: 138 to 264 V, 47 to 63 Hz

OPTIONAL SPECIFICATIONS

/A2ER : 220 V system power
/NHR : Rack case ordered separately
Where the case has been ordered separately, and thus only the internal assembly is required.
/TB : Power terminal type

ACCESSORY

One 1 A fuse

MODEL AND SUFFIX CODES

Model	Basic code	Style code	Optional code	Description
SCIU	.....	.....	.....	Communication Interface Unit
Supervisory communication	-1	.....	.....	RS-485
	-2	.....	.....	RS-232C (terminal connection)
	0	.....	.....	Always 0
	0	.....	.....	Always 0
Style code		*E		Style E
Optional specification			/A2ER	220V system power supply (Plug connection)
			/TB	Power terminal type
			/NHR	Rack case ordered separately

TERMINAL WIRING

Terminal symbols	Codes			Terminal symbols	Codes
	RS-485 Send/Receive common	RS-485 Send/Receive independent	RS-232C		
1	SD/RD (A)	SD (A)	SD	A	(P) } YewSeries 80 communication CH2
2	SD/RD (B)	SD (B)	RD	B	(N) }
7	SG	SG	SG	J	(S) }
3	SD/RD (A)	RD (A)	DTR	F	(P) } YewSeries 80 communication CH3
4	SD/RD (B)	RD (B)	–	H	(N) }
5	(P) } YewSeries 80 communication CH1			K	(S) }
6	(N) }			C	(P) } YewSeries 80 communication CH4
8	(S) }			D	(N) }

(Note) SD : Send data
RD : Receive data
SG : Signal ground
DTR : Data terminal ready (This output terminal goes HIGH when SCIU power is turned on)
Definition of terminal names A and B:
As specified in EIA, if the terminal voltages are assumed to be V_A and V_B,
$V_A < V_B$ when the signal is "mark", thus, terminal condition is OFF or 1.
$V_A > V_B$ when the signal is "space", thus, the terminal condition is ON or 0.