PLC - Flexible IO Solution

Flexys Panel TX4 / Flexys Rail



Features:

- Compact PLC with built-in HMI
- Flexible I/O Card Selection for customized applications
- 2 channel high-speed input (up to 5 kHz)*
- Expandable Architecture via I/O Expansion Modules
- RS485 Communication - MODBUS RTU Protocol
- Real-Time Clock (RTC) with Time Switch Function
- Serial Printing Support*
- Windows-Based Software for Ladder Programming and HMI Configuration

Display Specifications

Display Specifications	Flexys Panel TX4	Flexys Rail
Display Type	LCD (Backlit)	1-digit 7-segment LED for slot selection, and 12 status LEDs for selectable card slots.
No of Characters	4 Lines x 16 Characters	-
Font Size	5 x 7 mm	-
No. of Keys	18 Keys (14 User Configurable), 10 Numeric and 8 Function keys	1 key for scrolling through slot status
No of IO Slots	4	
Digital Input Specifications		
No. of Inputs	4 Inputs (including 2 Fast Input Channels) + Card Configurations: 4 / 10 / 14 inputs	
Input Type	PNP	
Voltage Range	7-30V DC	
Input Current	2 mA @12V	
Debounce Time	Programmable 1-255ms (Default: 10ms)	
Isolation (Power ↔ Input)	Yes	
Isolation (CPU ↔ Input)	Yes	
Protection against Polarity Inversion	Yes	
Timer Accuracy	0.1% or 1ms (Whichever Greater)	
Response Time	Typical 1m sec (Based on ladder scan time) & 100µ sec for fast Input	
Fast Input		
No. of Channels	2 (FC0 - DI0 & DI1, FC1 - DI2 &DI3)	
Max Speed	5 kHz	
Operating Mode	Unidirectional / Bidirectional / Quadrature / Dual Uni (5 kHz for all) / None	
**Fast Counter Input (For 24V DC variants only)*		
Analog Input Specifications		
No. of Channels	As per Card Configurations: 1 / 3 / 4 / 6 inputs	
Input Type	J, K, T, R, S, C, E, B, N, L, U, W, PLTNL, mVolt (-5 to 65mV), 0-10V, 0-20mA	
Accuracy	0.25% ±1°C (TC), 0.1% ±1°C (RTD) at 25°C, ±0.25% of FS. ±1 count for AI's, ±2°C for NTC	
Resolution	12 Bit	
Conversion Time	TC - 100ms, RTD - 100ms, 0-10V - 100ms, 0-20mA - 100ms, NTC - 100ms	
Linearity	0.10%	
Max Non-Destructive Input	AIV= 17V, AII=31mA	
Channel-to-Channel Isolation	NO	
Reverse Polarity Protection	TC - YES, RTD - N/A, 0-10V - YES, 0-20mA - YES, NTC - YES	
Input Impedance	TC - 330kΩ, RTD - 510KΩ, 0-10V - 330KΩ, 0-20mA - 100Ω, NTC - NA	

Digital Output Specifications	
No. of Outputs	As per Card Configurations: 4 / 8 (NO) type Relay, 1 Common Lines for 4 Relay
Contact Rating	5A @250V AC (resistive load), 5A @30V DC (resistive load)
Relay Type	SPST
Isolation (CPU ↔ Output)	Yes
Isolation (Output ↔ Output)	NO
Polarity Inversion Protection	Yes
Response Time	10ms
Mechanical Life	5 Million Operations

Note: *The 230V model supports a maximum of 2 FL-SC-RO08-CE-RoHS or FL-SC-DI04-RO04-CE-RoHS cards only.*

Digital Output - Transistor	
No. of Outputs	As per Card Configurations: 8 Transistorized
Output Rating	100mA @24V DC (current sourcing output), 18-30V DC (External Supply)
Output type	PNP (Source)
Short Circuit Protection	Yes
Isolation (CPU ↔ Output)	2.5kV
Isolation (Output ↔ Output)	NO
Polarity Inversion Protection	Yes
Response Time	10 ms
Nominal Load	240Ω (likely referring to the typical load resistance)
Breaking Current	110mA (maximum current that can be interrupted)

Analog Output Specifications	
No. of Channels	As per Card Configurations: 4
Output Range	0-10V DC / 0-20mA DC
Resolution	12 Bits
Load Limit	0-10V DC ≥ 1 kΩ, 0-20mA < 700 Ω
Digital Resolution	0.0-100.0% = 0-10.000 V DC, 0.0-100.0% = 0-20.000 mA
Conversion Time	100ms
Isolation (CPU ↔ Output)	Yes
Isolation (Output ↔ Output)	NO
Output Error @25°C	±0.25% of Full Scale
Linearity	0.10%

Note (for 230V Model):
Supports only one of the following analog output cards: FL-SC-AO04-V-CE-RoHS or FL-SC-AO04-I-CE-RoHS
Cannot be used together: FL-SC-AO04-V-CE-RoHS / FL-SC-AO04-I-CE-RoHS with FL-SC-RO08-CE-RoHS or FL-SC-DI04-RO04-CE-RoHS.

Supports combination of: FL-SC-AI03-U-AO02-U with up to 2 FL-SC-RO08-CE-RoHS cards.
Does not support using FL-SC-AI03-U-AO02-U together with FL-SC-AO04-V-CE-RoHS or FL-SC-AO04-I-CE-RoHS.
Maximum 2 units of FL-SC-AI03-U-AO02-U are supported on the 230V model.

Programming & Memory	
Programming Software	Windows-Based Ladder & HMI Configuration
Program Memory	351 KB
Data Memory	20 KB
EEPROM	4 KB
Upload Memory	96 KB
Max Objects	2000 (Subject to Memory Availability)
Min Scan Time	200µs
Typical Scan Time	1ms (Depends on Ladder Logic Complexity)

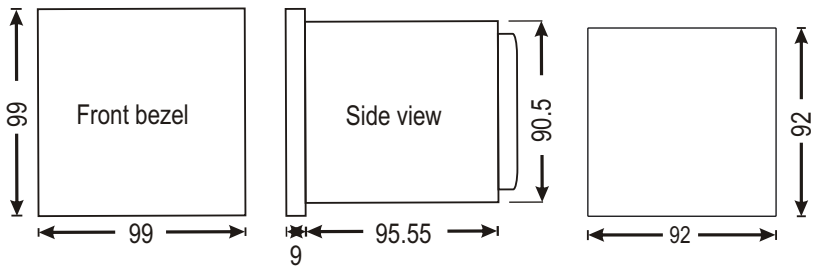
Functional Features	
Timer Operational Modes	On Delay, Off Delay, Special Timer (Up/Down), Pulse Timer, 1ms Timer*
Counter Modes	Up Counter, Down Counter, Up/Down Counter, Special [Up/Down] Counter
Other Functional Blocks	Array, For Next, Totalizer, Rate Totalizer, Analog Input, Scaling, FTC, Hysteresis, PIDT, Rampsoak, Communication
Memory Retention	10 years (2 KB)

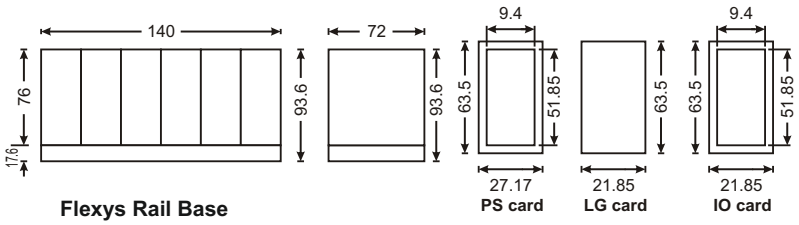
Real-Time Clock (RTC)	Yes	
Clock drift	Maximum ±4 seconds per day	
**Limited to 4 Nos*		
Communication Specifications		
Communication Port	RS485 [Slave], RS485 [Master] for Expansion	
Communication Protocol	MODBUS RTU	
Connector	RJ25 Port	
Transmission Mode	Half Duplex	
Transmission Speed	2400, 4800, 9600, 19200, 38400, 57600, 115200 bps	
Data Bits	7 or 8	
Parity	None, Odd, Even, Space, Mark	
Stop Bits	1 or 2	
Environmental Specifications		
Operating Temp	0°C to 55°C	
Storage Temp	-20°C to 60°C	
Humidity	10% to 95% RH (Non-condensing)	
Atmosphere	Must be free from Corrosive Gases	
IP rating	IP 65 (Front)	
Mechanical Specifications		
Weight	329.2 grams	251.2 grams
Mounting	Panel Mountable	DIN Rail Mountable
Dimensions in mm (WHD)	99 x 95.6 x 90.5 (HWD)	140 x 93.4 x 72 (WHD)
Auxiliary Supply Specifications		
Supply Voltage	Without Retention: 90-270V AC @50/60 Hz DC Input Option: 18-30V DC	
Inrush Current	5A for AC / 2.3A for DC supply	5A for AC / 2.3A for DC supply
Power Consumption	13VA /12W	13VA / 12 W
Polarity Inversion Protection	Yes	
Isolation (Power ↔ Communication)	Yes	
Source Supply Output	10V DC, 50mA for AC Variant	

Note: *A maximum of 25 variables of type VAR_IN_OUT and VAR_OUTPUT (each 32-bit) can be retained when operating at 110V.*

Dimensions (All are in mm)

Flexys TX4





Flexys Rail Base

Port description

Port 1 (6 pin jack)	
Pin	**Description**
1	RS485 slave +ve
2	RS485 master +ve
3	RS485 master -ve
4	NA
5	NA
6	RS485 slave -ve

Accessories (To Be Ordered Separately)

Product Code	Description
Power Supplies	
RPS60-24-CE	60W, 24V/2.5A DIN rail mounted power supply in plastic housing - CE Certified
Cables & Communication Accessories	
AC-USB-RS485-03	Protocol Converter Cable - USB to RS485 (RJ25)
For MODBUS Networking	
AC-USB-RS485-02	Protocol Converter Cable - USB to RS485 (2 wire)
ACH-004-CE-RoHS	Expansion Cable - RJ25 to RJ25 (6Pin)
AC-IOEXP-03-CE-RoHS	Communication Adapter
Relay Modules	
ERLYMD-2-1-S8-1CO-24V-CE-RoHS	8 Channel 1 Change Over, Communication based
Expansion modules on Master RS485	
EXP FLEX 2M	Expansion Slot - For Flexys IO Cards
EXP FLEX 2M V3	Independent Remote IO base - For Flexys IO Cards
Software - www.selec.com/software	
Selpro	Windows-based software for ladder logic and built-in HMI programming
USB to Serial Driver	USB to Serial cable drivers

Ordering information

Product code	Description	Certification
Flexys Panel TX4		
FL-TX4-DI04-PS-230V-CE-RoHS	Flexys Panel TX4 - Power Supply Card - 230VAC, 4 Digital Inputs	
FL-TX4-DI04-PS-24V-CE-RoHS	Flexys Panel TX4 - Power Supply Card - 24VDC, 4 Digital Inputs	
FL-TX4-LG-1-0-1-V2-CE-RoHS	Flexys Panel TX4 - Logic card - RTC, MODBUS	
Flexys rail		
FL-RL-PS-230V	Flexys Rail - Power Supply Card - 230VAC	
FL-RL-DI04-PS-24V-CE-RoHS	Flexys Rail - Power Supply Card - 24VDC, 4 Digital Inputs	
FL-RL-BS-6-CE-RoHS	Flexys rail - Base card	
FL-RL-LG-1-0-1-V2-CE-RoHS	Flexys rail - Logic card - RTC, MODBUS	

Supported I/O cards

IO cards	Description	Certification
I/O cards will be common for Flexys Panel TX4 & Flexys Rail		
FL-SC-DI10-CE-RoHS	Flexys IO – 10 Digital Input Card	CE RoHS
FL-SC-DI14-CE-RoHS	Flexys IO – 14 Digital Input Card	CE RoHS
FL-SC-TO08-CE-RoHS	Flexys IO – 8 Channel Transistor Output Card	CE RoHS
FL-SC-RO08-CE-RoHS	Flexys IO – 8 Channel Relay Output Card	CE RoHS
FL-SC-DI04-RO04-CE-RoHS	Flexys IO – 4 Digital Input & 4 Digital Output Card	CE RoHS
FL-SC-AI04-U	Flexys IO – 4 Channel Analog Input Card – Universal (Jumper Selectable)	CE RoHS
FL-SC-AI06-V-CE-RoHS	Flexys IO – 6 Channel Analog Input Card – Voltage	CE RoHS
FL-SC-AI06-I-CE-RoHS	Flexys IO – 6 Channel Analog Input Card – Current	CE RoHS
FL-SC-AI06-V/I	Flexys IO – 6 Channel Analog Input Card – Voltage/Current	CE RoHS
FL-SC-AI06-V/I-ISO	Flexys IO – 6 Channel Analog Input Card – Voltage/Current (Isolated)	CE RoHS
FL-SC-AI04-TC-CE-RoHS	Flexys IO – 4 Channel Analog Input Card – Thermocouple	CE RoHS
FL-SC-AIDF05-TC-CE-RoHS	Flexys IO – 5 Channel Differential Analog Input Card – Thermocouple	CE RoHS
FL-SC-AIDF05-TC-ISO-CE-RoHS	Flexys IO – 5 Channel Differential Analog Input Card – Thermocouple (Isolated)	CE RoHS
FL-SC-AI04-RTD-CE-RoHS	Flexys IO – 4 Channel Analog Input Card – RTD (PT-100)	CE RoHS
FL-SC-AI01-AO01-V/I	Flexys IO – 1 Channel Analog Inputs, 1 Channel Analog Output (Voltage/Current)	CE RoHS
FL-SC-AI03-U-AO02-U	Flexys IO – 3 Channel Analog Input – Universal, 2 Channel Analog Output – Universal Card (Jumper Selection)	CE RoHS
FL-SC-AI03-NTC-AI03-I	Flexys IO – 3 Channel Analog Inputs – NTC, 3 Channel Analog Inputs – Current Card	CE RoHS
FL-SC-AO04-V-CE-RoHS	Flexys IO – 4 Channel Analog Output Card – Voltage	CE RoHS
FL-SC-AO04-I-CE-RoHS	Flexys IO – 4 Channel Analog Output Card – Current	CE RoHS
FL-SC-LC04	Flexys IO – 4 Channel Loadcell Input Card (24 bits)	CE RoHS In process

Refer to the IO card and base module compatibility guidelines to ensure effective and valid IO card combinations.