Flexys Panel TX4 / Flexys Rail

PLC - Flexible IO solution

Features :

- **Flexible card selection**
- **Compact PLC with built-in HMI**
- **4 line x 16 characters LCD display for Flexys Panel TX4**
- **Windows based user friendly software for ladder programming & HMI configuration**
- **RTC with Time Switch function (Optional)**
- **RS485 based communication with MODBUS RTU Protocol**
- **Expandable via IO Expansions**
- **Serial Printing***

Certifications : CE

Display Specifications

	Flexys Panel TX4	Flexys Rail
Display	LCD (backlight) 4 line x 16 Character, Font size 5 x 7 mm	12 LEDs to indicate card status for selectable slot, One 7 segment display to indicate slot number, card failure indicated by blinking display
No. of keys	18 (10 Numeric Keys) (14 User Configurable)	One key to scroll through different slot status

Input Specifications

No of Digital Inputs	4 (Uni) / 2 (Bi / Quad) / 4 Standard digital input
Operating Mode	Unidirectional / Bidirectional / Quadrature / Dual Uni (5kHz for all) / None

CH	DI	Mode				
		UNI	BI	QUAD	DUAL UNI	NONE
FC0	I0	RT	RT	1st IP*	RT	Digital Input
	I1	Digital Input	Direction	2nd IP*	T	Digital Input
FC1	I2	RT	RT	1st IP*	RT	Digital Input
	I3	Digital Input	Direction	2nd IP*	T	Digital Input

*90° Phase shift signals; RT - Rate Totalizer, T - Totalizer

Digital Input

No. of Inputs per card	4 / 10 / 14
Input type	DC, PNP
Input Voltage Range	6 - 30V DC (V+)
Maximum Counting Frequency	40Hz (With <6ms debounce time)
Response Time	Default 10ms (Based on ladder scan time)
Isolation between 230V Power Supply and Inputs	Yes
Protection against Polarity Inversion	Yes

Fast Counter Input (For 24V DC card only)

Analog Inputs

Item	Specifications				
Module	**TC**	**RTD**	**Voltage**	**Current**	**NTC**
No of Channels per Cards	As per Card Selected				
Sensor	J, K, T, R, S, C, E, B, N, L, U, W, Platinel II, mV (-5 to 65mV)	PT100	0 - 10V	0 - 20mA	NTC (-40 to 95°C)
Input impedance in signal range	470kΩ	470kΩ	330kΩ	100kΩ	330kΩ
Resolution	12 bit				
Conversion time	100ms	300ms	100ms		100ms
Accuracy	0.15% of F.S. ±1°C	0.1% of F.S. ±1°C	±0.25% of F.S.		±2°C
Protection against polarity inversion	Yes	NA	Yes		Yes

Output Specifications

Transistor Output	
No. of outputs per card	8
Output type	Transistorized output DC, PNP
Rated voltage	18 to 30V DC (External)
Response time	10ms
Short circuit protection	Yes
Isolation	2.5kV (between CPU & outputs)
Protection against polarity Inversion	Yes
Output current	100mA maximum per output
Relay Outputs	
No of outputs per card	4 / 8
Response time	20ms
Isolation	2.5kV (between CPU & outputs)
Output current	5.5A@30V DC; 5.5A@230V AC (Resistive)

Note : 230V model, supports up to 2 no. of **FL-SC-RO08-CE / FL-SC DI04-RO04** cards only

Analog Outputs

Item	Specifications	
Module	**Voltage Type**	**Current Type**
No. of channels per card	4	4
Range	0 - 10V	0 - 20mA
Load limit	1KΩ	< 700Ω
Digital resolution	0.0 - 100.0% = 0 - 10V	0.0 - 100.0% = 0 - 20mA
Conversion time	100ms	
Accuracy	±0.25% of F.S.	
None linearity	±0.25% of F.S.	

Note : 1) 230V model, supports one FL-SC-AO04-V-CE or FL-SC-AO04-I-CE card only

2) In 230V model, combination of FL-SC-RO08-CE / FL-SC-DI04-RO04 & FL-SC-AO04-V-CE / FL-SC-AO04-I-CE cards are not supported

3) In 230V model support combination of FL-SC-AI03-U-AO02-U & 2 nos of FL-SC-RO08 and does not support combination of FL-SC-AI03-U-AO02-U and FL-SC-AO04-V or FL-SC-AO04-I

4) 230V AC Model only support 2 nos of FL-SC-AI03-U-AO02-U

Functional Specifications (CPU)

Programming Language	Window based software for Ladder programming & HMI Configuration
Program memory	351kB
Data memory	20kB
Upload memory	96kB
EEPROM memory	4kB
Ladder scan - cycle time	1ms (typical 400µs)
Memory retention	10 years
RTC	Yes
Clock drift	Max 4 sec / day

Communication

Communication Port	1 : RS485 Slave
(Port 1)	2 : RS485 Master for MODBUS Expansion EXP FLEX 2M
Communication protocols	Modbus RTU
Transmission mode	Half Duplex
Transmissions speed	9600, 19200, 38400, 57600, 115200
Data bits	7 or 8
Parity	None, Odd, Even, Space, Mark
Stop bits	1 or 2

Functional Features

Timer operational modes	On Delay, Off Delay, Pulse, Special [Up / Down] Timer [1ms]
Timer resolution	1 ms (Accurate only for 1 msec Timer block)
Timer display format	Sec, Min, Hr, Day, Min.Sec, Hr.Min, Day.Hr, Hr.Min.Sec, Day.Hr.Min.Sec
Counter	Up Counter, Down Counter, Up / Down Counter, Special [Up / Down] Counter, Rate totaliser & totaliser (Uni/Bi/Quad)
Other blocks	Array, For next, PID Control with autotune, Hysteresis, Scaling, Time switch, Communication, RTC
Serial printing interface	Yes

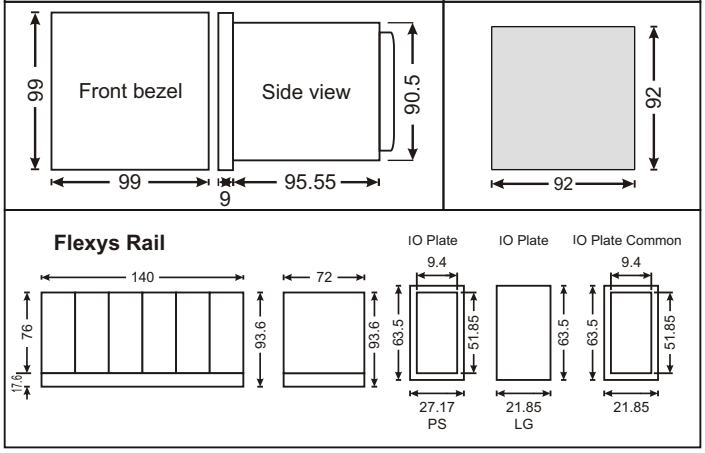
Power Supply

Parameter	Flexys Rail / Flexys Panel TX4-230V AC	Flexys Rail / Flexys Panel TX4-24V DC
Supply voltage	230V AC (90 - 270V AC)	24V DC (±10%V DC)
Source supply (SS)	10V (100mA)	NA
Power Consumption	13 VA	12 W
Protection against Polarity Inversion	NA	Yes

General Specification

Ambient operating Temperature	0 to 55°C
Humidity	95%
Ambient storage temperature	-20 to 70°C
Earthing	No
Mounting	Flexys Panel TX4 : Panel Mount Flexys Rail : Din Rail Mount
Weight	Flexys Panel TX4 : 225.6 gms (Logic + Housing) Flexys Rail : Approx. 135 gms (Base Card + Housing)
Dimensions in mm	Flexys Panel TX4 : 99 X 95.6 X 90.5 Flexys Rail : 140 X 93.4 X 72

Outline Dimensions (in mm) | **Panel Cutout** (in mm)



Port Description

Port 1 (6 Pin Jack)	
Pin	**Description**
1	RS485 Slave +ve
2	RS485 Master +ve
3	NA
4	NA
5	Proprietary Expansion -ve
6	RS485 Slave -ve

Ordering Information for loose Cards

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

Supported I/O Cards

Product Code	Description	Certification
I/O cards will be common for Flexys Panel TX4 & Flexys Rail		
FL-SC-DI10-CE-RoHS	Flexys IO – 10 Digital Inputs Card	CE RoHS
FL-SC-DI14-CE-RoHS	Flexys IO – 14 Digital Inputs Card	CE RoHS
FL-SC-RO08-CE-RoHS	Flexys IO – 8 Channel Relay Output Card	CE RoHS
FL-SC-TO08-CE-RoHS	Flexys IO – 8 Channel Transistor Output Card	CE RoHS
FL-SC-DI04-RO04-CE-RoHS	Flexys IO – 4 Digital Input, 4 Relay Output Card	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-AI04-RTD-CE-RoHS	Flexys IO – 4 Channel Analog Input Card – RTD (PT-100)	CE RoHS
FL-SC-AI04-TC-CE-RoHS	Flexys IO – 4 Channel Analog Input Card – Thermocouple	CE RoHS
FL-SC-AIDF04-TC-CE-RoHS	Flexys IO – 4 Channel Differential Analog Input Card – Thermocouple	CE RoHS
FL-SC-AI03-NTC-AI03-I	Flexys IO – 3 Channel Analog Input – NTC, 3 Channel Analog Input – Current Card	CE RoHS in Process
FL-SC-AI04-U	Flexys IO – 4 Channel Analog Input Card – Universal (Jumper Selectale)	CE RoHS in Process
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-AI03-U-AO02-U	Flexys IO – 3 Channel Analog Input – Universal, 2 Channel Analog Output – Universal Card	CE RoHS in Process
FL-SC-LC04	Flexys IO – 4 Channel Loadcell Input Card	CE RoHS in Process

Accessories

Downloading cable
AC-USB-RS485-03 (USB to 6 pin RJ25 jack)
Expansion Module Cables & Adapter
ACH-004 (6 pin to 6 pin RJ25 jack) for expansion only (Cable)
AC-IOEXP-03 (Port expansion adapter)
Window - Based Software for Ladder Programming
Sel pro
Relay Module
1) RLYMD-1-S4-1CO-24VDC : 4 Channel 1 change over Relay module 2) RLYMD-1-S4-2CO-24VDC : 4 Channel 2 change over Relay module 3) RLYMD-2-S8-1CO-24VDC : 8 Channel 1 change over Relay module 4) RLYMD-2-S8-2CO-24VDC : 8 Channel 2 change over Relay module 5) ERLYMD-2-1-S8-1CO-24V : 8 Channel 1 Change Over, Communication based
Power Supplies
RPS60-24-CE-RoHS
Expansion modules on Master RS485
EXP FLEX 2M : Expansion module on Master Rs485 (I / O same as Flexys I / O cards) **EXP FLEX 2M V3 :** Independent Remote IO base.