

Flexys TX4



Flexys Rail

Certifications : CE RoHS

Features :

- Flexible Card Selection
- PLC with Built-in HMI
- 4 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*

Display Specifications

	Flexys Panel TX4	Flexys Rail
Display	LCD (backlight) 4 X 16 Characters, Font Size 5X7 mm	12 LEDs to indicate Card status for Selectable Slots, 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 Statuses

Input Specifications

Fast Counter Input (On Power Supply Card Only) (Optional)

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 UNİ	NONE
FC0	I0	RT	RT	1stIP*	RT	Digital Input
	I1	Digital Input	Direction	2nd IP*	T	Digital Input
FC1	I2	RT	RT	1stIP*	RT	Digital Input
	I3	Digital Input	Direction	2nd IP*	T	Digital Input

*90^{0}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

Analog Inputs

Item	Specifications				
Module	**TC**	**RTD**	**Voltage**	**Current**	**NTC**
No of Channels per Card	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^{0}C)
Input Impedance in Signal Range	470kΩ	470kΩ	330kΩ	170kΩ	330kΩ
Resolution	12 Bits				
Conversion Time	100ms	300ms	100ms		
Analog Input error at 25°C	0.15% of F.S. ±1°C	0.1% of F.S. ±1°C	±0.25% of F.S.		±2^{0}C
Protection against Polarity Inversion	Yes	NA	Yes		Yes

Output Specifications

Transistor Output

No. of Outputs per Card	8
Output Type	Transistor 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 max. per Output

Relay Output

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/ 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	< 800Ω
Digital Resolution	0.0 - 100.0% = 0 - 10V	0.0 - 100.0% = 0 - 20mA
Conversion time	100ms	
Analog output error at 25°C	±0.25% of F.S.	
None Linearity	±0.25% of F.S.	

Note : 1) 230V model, supports one **FL-SC-AO04-V** or **FL-SC-AO04-I** card only
2) In 230V model, combination of **FL-SC-RO08 / FL-SC-DI04-RO04** & **FL-SC-AO04-V / FL-SC-AO04-I** cards are not supported
3) In 230 model only 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 (4 KB)
RTC	Yes
Battery Life	10 years for RTC only

Communication

Communication Port (Port 1)	1: RS485 Slave 2: RS485 Master for MODBUS Expansion Modules (IO610 series) & EXP-FLEX 2M 3: Proprietary Master for proprietary Expansion Modules (IO630 series)
Communication Protocols	Modbus RTU, Proprietary Protocol

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, Fast Counter [up to 10 digits] Uni/Bi/Quad
Other Blocks	Array, For next, PIDT, Hysteresis, Scaling, Time Switch, Communication, RTC
Serial Printing Interface	Yes

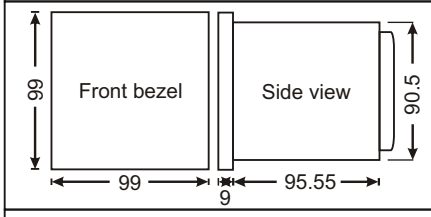
Power Supply

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)
Sensor Supply (SS)	10V (100mA)	NA
Power Consumption	13 VA	12 W
Protection against Polarity Inversion	NA	Yes

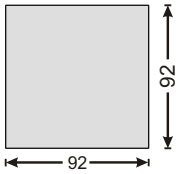
General Specification

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 90.5mm (W x H x D) Flexys Rail: 140 X 93.4 X 72mm (W x H x D)

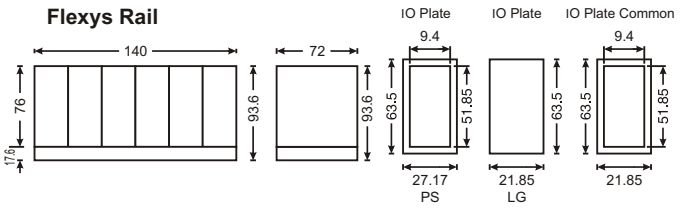
Outline Dimensions (in mm)



Panel Cutout (in mm)



Flexys Rail



(All Dimensions are in mm)

Port Description

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

Ordering Information

Product Code	Description	Certification
FL-TX4-DI04-PS-230V	Flexys Panel TX4 – Power Supply Card – 230VAC	CE RoHS
FL-TX4-DI04-PS-24V	Flexys Panel TX4 – Power Supply Card – 24VDC	CE RoHS
FL-TX4-LG-1-1-1	Flexys Panel TX4 – Logic card – RTC, Modbus & Proprietary Expansion	CE RoHS
FL-RL-DI04-PS-24V	Flexys Rail – Power Supply Card – 24VDC, 4 Digital Inputs	CE RoHS
FL-RL-BS-6	Flexys Rail – Base Card	CE RoHS
FL-RL-LG-1-1-1	Flexys Rail – Logic Card – RTC, Modbus & Proprietary Expansion	CE RoHS
FL-RL-PS-230V	Flexys Rail – Power Supply Card – 230VAC	CE RoHS in Process

Supported I/O Cards

Product Code	Description	Certification
I/O cards will be common for Flexys Panel TX4 & Flexys Rail		
FL-SC-DI10	10 Digital Inputs Card	CE RoHS
FL-SC-DI14	14 Digital Inputs Card	CE RoHS
FL-SC-RO08	8 Channel Relay Output Card	CE RoHS
FL-SC-TO08	8 Channel Transistor Output Card	CE RoHS
FL-SC-TO08-1A	8 Channel Transistor Output Card – 1A	CE RoHS in Process
FL-SC-DI04-RO04	4 Digital Input, 4 Digital Output Card	CE RoHS
FL-SC-AI03-NTC-AI03-I	3 Channel Analog Input – NTC, 3 Channel Analog Input – Current Card	CE RoHS in Process
FL-SC-AI04-RTD	4 Channel Analog Input Card – RTD (PT-100)	CE RoHS
FL-SC-AI04-TC	4 Channel Analog Input Card – Thermocouple	CE RoHS in Process
FL-SC-AIDF04-TC	4 Channel Differential Analog Input Card – Thermocouple	CE RoHS
FL-SC-AI06-V	6 Channel Analog Input Card – Voltage	CE RoHS
FL-SC-AI06-I	6 Channel Analog Input Card – Current	CE RoHS
FL-SC-AI04-U	4 Channel Analog Input Card – Universal	CE RoHS in Process
FL-SC-AO04-V	4 Channel Analog Output Card – Voltage	CE RoHS
FL-SC-AO04-I	4 Channel Analog Output Card – Current	CE RoHS
FL-SC-AI03-U-AO02-U	3 Channel Analog Input – Universal, 2 Channel Analog Output – Universal Card	CE RoHS in Process
FL-SC-LC04	4 Channel Loadcell Input Card	CE RoHS in Process

Accessories

Accessories for Communication
AC-USB-RS485-03 (USB to 6 Pin RJ25 Jack)
AC-USB-RS485-02 (USB to 2 Pin Open Wire)
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
ACD-005
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 Relay Module
Power Supply Module
RP-2M-1.1A-24VDC, RP-3M-2.5A-24VDC
Expansion Modules on Master RS485 / Proprietary Port
EXP- FLEX 2M : Expansion Module on Master RS485 (I/O same as Flexys I/O Cards)