

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

## Analog Inputs

Item	Specifications				
	TC	RTD	Voltage	Current	NTC
Module					
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°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°C
Protection against Polarity Inversion	Yes	NA	Yes		Yes

## 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 UNI	NONE
FC0	I0	RT	RT	1 <sup>st</sup> P*	RT	Digital Input
	I1	Digital Input	Direction	2 <sup>nd</sup> IP*	T	Digital Input
FC1	I2	RT	RT	1 <sup>st</sup> P*	RT	Digital Input
	I3	Digital Input	Direction	2 <sup>nd</sup> 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            Yes  
 Power Supply and Inputs  
 Protection against                    Yes  
 Polarity Inversion

## 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	
	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

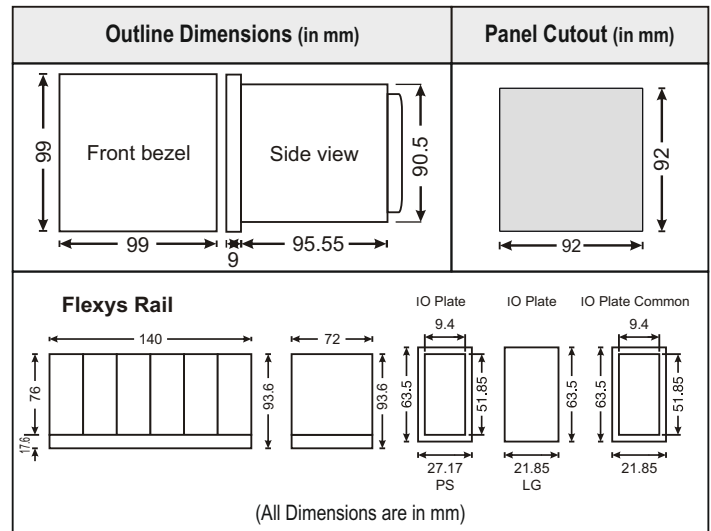
Timer Operational Modes	On Delay, Off Delay, Pulse, Special [Up/Down] Timer [1ms]
Timer Resolution	1 ms (Accurate only for 1 msec Timer block)
Timer Display Format	Sec, Min, Hr, Day, Min.Sec, Hr.Min, Day.Hr, Hr.Min.Sec, Day.Hr.Min.Sec
Counter	Up Counter, Down Counter, Up/Down Counter, Special [Up/Down] 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)



## 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
<b>I/O cards will be common for Flexys Panel TX4 &amp; Flexys Rail</b>		
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

<b>Accessories for Communication</b>
AC-USB-RS485-03 (USB to 6 Pin RJ25 Jack)
AC-USB-RS485-02 (USB to 2 Pin Open Wire)
<b>Expansion Module Cables &amp; Adapter</b>
ACH-004 (6 Pin to 6 Pin RJ25 Jack) for Expansion only (Cable)
AC-IOEXP-03 (Port Expansion adapter)
<b>Window-Based Software for Ladder Programming</b>
ACD-005
<b>Relay Module</b>
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
<b>Power Supply Module</b>
RP-2M-1.1A-24VDC, RP-3M-2.5A-24VDC
<b>Expansion Modules on Master RS485 / Proprietary Port</b>
<b>EXP- FLEX 2M</b> : Expansion Module on Master RS485 (I/O same as Flexys I/O Cards)