

Multi Digital Controller

# FX series

Temperature Controller	<b>FX3S, FX3D, FX3FS, FX3T, FX3QR/FX3SR</b>
Humidity Controller	<b>FX3H, FX3DH</b>
Refrigeration Controller	<b>FX32J, FX32R, FX32K, FX32C, FX32PR, FX32EV, FX32S</b>
Multi-Function Controller	<b>FX32P, FX32F, FX32A, FX32A-351</b>



# FX Series

**Digital controller to fits perfectly  
for your purpose,  
Why don't you change to FX series?**



### **Easy Control & Best Price**

FX series has easy settings and excellent transfer among each menu based on simple and convenient constitution, and it embeds a step-by-step access setup function (blind menu function), so that it can prevent the equipments from malfunction. Also, it can provide users with very reasonable price in contradistinction with cost in spite of a combination of network ability and control function.



### **±0.3°C Precise Temperature Control & High Reliability**

The temperature sensors, such as NTC (-50~150°C), PT-100 (-200~800°C) and TC (0~1000°C) can measure temperature in wide range and provide users with very fine tolerances (0.1°C temperature resolution).



### **Free Voltage & Compact Design**

There is no restriction to apply for AC100~240V and 50/60Hz. A simple and streamline shape provides users with visible convenience.



### **Error & Alarm Display**

FX series can show the error information, such as failure and malfunction of the equipment as a simple message, so the supervisors can easily manage it.



### **Multi Digital Controller (MICOM) Function**

FX series is an advanced multi function digital controller which embeds logic at the same level of MICOM according to models and various functions and oversteps bounds of simple temperature controllers.



### **RS485 & 4~20mA Analogue Output Function**

Applying for RS485 communication method based on MODBUS RTU/ASCII Protocol, FX series helps users to construct convenient SCADA/HMI system which is possible for precise central concentrated monitoring with PLC, PC, and touch screen.



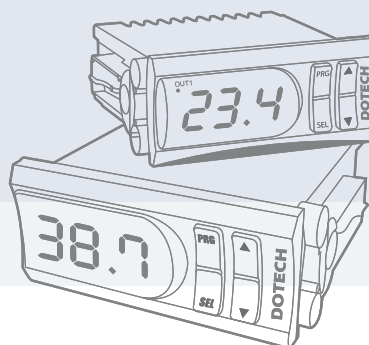
### **Compatibility for Various Sensors**

According to request for each system, various types of sensors are applicable including a standard temperature sensor.

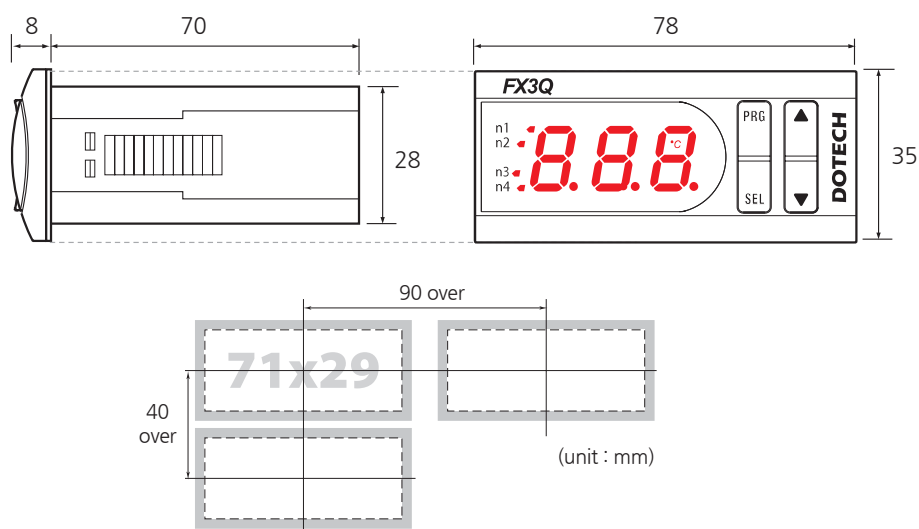
## Multi Digital Controller **FX Series**



Now It's your turn  
to experience DOTECH.







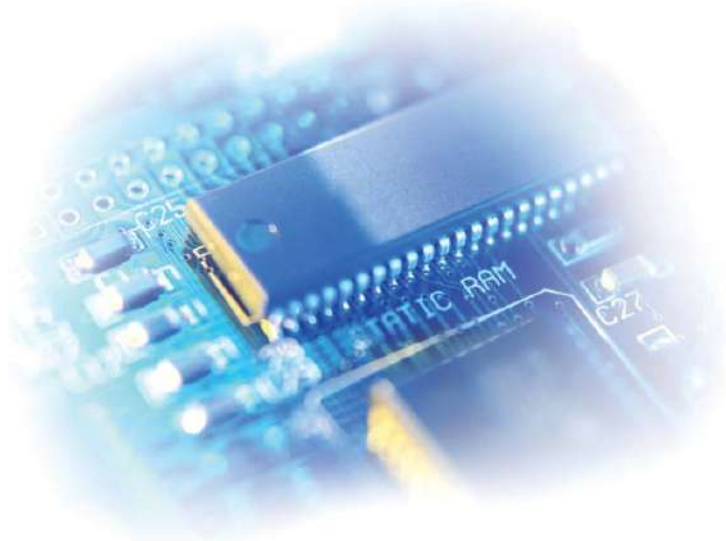
### Standardized Dimensions (Panel Cut Size : 71 X 29mm)



### Selection suitable model with the necessary functions

You can choose model with the functions that you want for your convenience.

Temperature	Humidity	Refrigeration	Multi
			
FX3S FX3T FX3D FX3QR FX3FS FX3SR	FX3H FX3DH	FX32J FX32K FX32R FX32C FX32PR FX32EV FX32S	FX32P FX32F FX32A FX32A-351



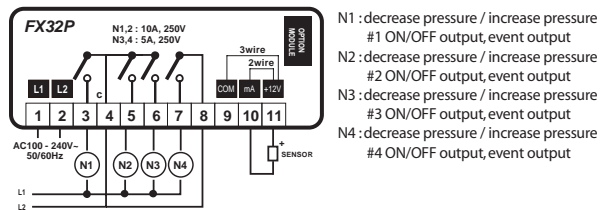
# Multi-function Digital Controller 04

## FX32P

Pressure Switch Controller **4~20mA** **RS485** **Retrans**



<b>Main-Function</b>	Output controllable based on measured pressure value (increase and decrease). Alternative operation available between freezing exclusive model and booster, pump unit control exclusive model, RS485 communication (MODBUS)
<b>Power Supply</b>	AC100~240V, 50/60Hz, Max. 4VA, screw bolt terminals
<b>Input /output</b>	Pressure sensor input : 1 point (including power supply) Relay output : 4 point
<b>Sensor Spec</b>	4~20mA (2 wire or 3 wire)
<b>Models</b>	<b>FX32P-00</b> : Basic model <b>FX32P-R4</b> : Add on RS485 communication (MODBUS) <b>FX32P-A1</b> : Add on 4~20mA transmission output

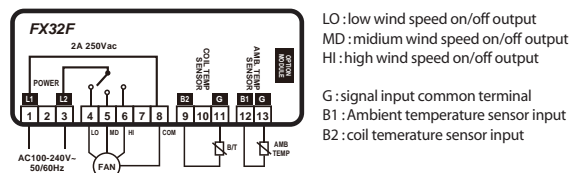


## FX32F

Fan Coil Unit Controller **NTC** **Heating** **Cooling** **RS485**



<b>Main-Function</b>	3 stage fan speed controllable, 4 kind (stop/high/middle/low) airflow choosable, Unification of temp. control function, Data backup, self-diagnostic, RS485 communication (MODBUS)
<b>Power Supply</b>	AC100~240V, 50/60Hz, Max. 4VA, connector
<b>Input/output</b>	Relay output : 3point (airflow control), Temp. sensor input : 2 point (room & water)
<b>Sensor Spec</b>	DPR-TH1 : NTC 5k, $\pm 0.3^{\circ}\text{C}$ at $25^{\circ}\text{C}$ ( $-50^{\circ}\text{C}$ ~ $105^{\circ}\text{C}$ )
<b>Models</b>	<b>FX32F-00</b> : Basic model <b>FX32F-R4</b> : Add on RS485 communication (MODBUS)



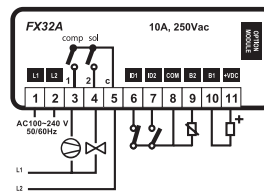
# FX Series

## FX32A

Air Compressor Controller **NTC** **4~20mA** **RS485** **Retrans**



<b>Main-Function</b>	Embedded run/stop switch, motor on/off, load run, auto-stop, manual stop, Operation delay, load delay, embedded timer, pressure/temperature high level, Temperature low level (standby for starting), Interlock input signal (emergency switch, OCR reverse phase) Hour meter (total run hours/loaded hours/PM cycle/PM exceeded time), self-diagnostic, Usable for thermometer and manometer, RS485 communication (MODBUS)
<b>Power Supply</b>	AC100~240V, 50/60Hz, Max. 4VA, screw bolt terminals
<b>Input/output</b>	Relay output : 2point (motor, SOL) Digital input : 2 point (interlock, remote control) Temp. sensor input : 1 point (discharge air temperature) Pressure sensor input : 1 point (discharge air pressure)
<b>Sensor Spec</b>	DPR-TH2 : NTC 10k, $\pm 0.3^{\circ}\text{C}$ at $25^{\circ}\text{C}$ (-50~150 $^{\circ}\text{C}$ )
<b>Models</b>	<b>FX32A-00</b> : Basic model <b>FX32A-R4</b> : Add on RS485 communication (MODBUS) <b>FX32A-A1</b> : Add on 4~20mA transmission output <b>FX32A-R2</b> : Add on RS232 communication



Comp : main motor on/off output  
Sol : LOAD SOL ON/OFF output

B1 : pressure sensor input signal  
B2 : temperature sensor input signal

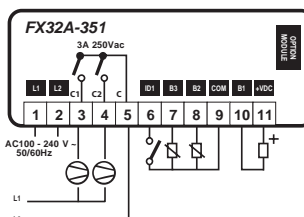
ID1 : control output interlock signal(OCR, EMSW)  
ID2 : remote run / stop control signal

## FX32A-351

Air Compressor Controller **NTC** **4~20mA** **RS485** **Retrans**



<b>Main-Function</b>	Embedded run/stop switch, motor on/off, load run, auto-stop, manual stop, Operation delay, load delay, embedded timer, pressure/temperature high level, Temperature low level (standby for starting), Interlock input signal (emergency switch, OCR reverse phase) Hour meter (total run hours/loaded hours/PM cycle/PM exceeded time), self-diagnostic, Usable for thermometer and manometer, RS485 communication (MODBUS)
<b>Power Supply</b>	AC100~240V, 50/60Hz, Max. 4VA, screw bolt terminals
<b>Input/output</b>	Relay output : 2point (motor, SOL) Digital input : 2 point (remote control, interlock) Temp. sensor input : 1 point (discharge air temperature) Pressure sensor input : 1 point (discharge air pressure)
<b>Sensor Spec</b>	Pressure Sensor : 0~16 bar (4~20mA) DPR-TH2 : NTC DPR-TH503 ET
<b>Models</b>	<b>FX32A-351-00</b> : Basic model <b>FX32A-351-R4</b> : Add on RS485 communication (MODBUS) <b>FX32A-351-A1</b> : Add on 4~20mA transmission output <b>FX32A-351-R2</b> : Add on RS232 communication



ID1 : remote run/stop signal

C1 : COMP1 motor ON/OFF output  
C2 : COMP2 motor ON/OFF output

B1 : pressure sensor input signal  
B2 : COMP1 temp. sensor input signal  
B3 : COMP2 temp. sensor input signal

## FX Series Specification

Hardware Comparison per Each Model

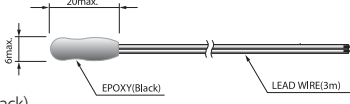
Section	Rated Power	Power Consumption	Sensor Input	Analogue Input	Analogue output (option)	Digital Input	Digital output	Communication Port(option)	Field of application	
FX3S (NTC)	AC100-240V~50/60Hz	Max. 4VA	NTC 1P	-	-	-	16A 250Vac 1P	-	wine seller, flower refrigerator, refrigerator, deep freezer etc. places where need to be controlled temperature, humidity and pressure	
FX3D (NTC,4~20mA)			NTC 1P	4~20mA 1P	4~20mA 1P	-	10A 250Vac 2P	RS485		
FX3FS (NTC)			NTC 2P	-	-	-	16A 250Vac 1P	-		
FX3T (Thermo-Couple)			TC(K)1P	-	4~20mA 1P	-	10A 250Vac 3P	RS485		
FX3QR (RTD)			Pt100 1P	-	4~20mA 1P	-	5A 250Vac 2P 10A 250Vac 2P	RS485		
FX3SR (RTD)			Pt100 1P	-	4~20mA 1P	-	16A 250Vac 1P	RS485	for precision	
FX3H (Humidity)			-	1~3.6V 1P	-	-	16A 250Vac 1P	-	Humidity Control	
FX3DH (Temp. & Humidity)			NTC 1P	1~3.6V 1P	4~20mA 1P	-	8(2)A 250Vac 2P	RS485	Humidity Control	
FX32J (Showcase & Coldroom)			Max. 4VA	NTC 2P	-	4~20mA 1P	-	5A 250Vac 2P 10A 250Vac 2P	RS485	showcase, low temperature warehouse, deep freezer
FX32R (Showcase & Coldroom)			Max. 8VA	NTC 3P	-	-	7P	10A 250Vac 4P	RS485	
FX32K (Defrost)			Max. 4VA	NTC 2(3)P Humidity 1P	-	-	1P	3A 250Vac 2P	RS485	Heat pump
FX32C (Compector)			Max. 8VA	NTC 3P	-	-	7P	10A 250Vac 4P	RS485	Refrigeration
FX32PR -			Max. 4VA	-	4~20mA 1P	4~20mA 1P	-	8A 250Vac 2P 3A 250Vac 2P	RS485	High/Low Pressure Control
FX32EV -			Max. 4VA	Pt1000 1P	4~20mA 1P	4~20mA 1P	1P	SSR 1P	RS485	Electronic Expansion Valve
FX32S seires -			Max. 8VA	NTC 2(3)P	-	-	2P	5~16A 250Vac 4P	RS485	Showcase
FX32P (Pressure Switch)			-	-	4~20mA 1P	4~20mA 1P	-	10A 250Vac 2P 5A 250Vac 2P	RS485	pressure control device
FX32F (Fan-coil Unit)	-	NTC 2P	-	-	-	2A 250Vac 3P	RS845	Fan coil		
FX32A (Air-Compressor)	-	NTC 1P	4~20mA 1P	4~20mA 1P	2P	10A 250Vac 2P	RS485	Air Compressor		
FX32A-351 (Air-Compressor)	-	NTC 2P	4~20mA 1P	4~20mA 1P	2P	3A 250Vac 2P	RS485			

# FX Series

## Temperature Sensor Specification

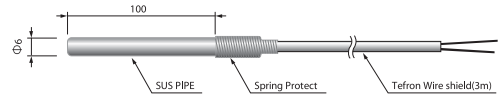
### DPR-TH1-AT5

Sensor type : NTC 5K $\Omega$   
 Range : -50 ~ 105 $^{\circ}$ C  
 Accuracy :  $\pm 0.3^{\circ}$ C at 25 $^{\circ}$ C  
 Sheath :  $\phi 6$  X 20mm  
 Cable : 2C X 0.5mm, EPOXY(Black)



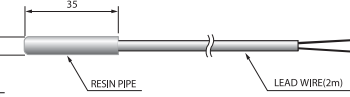
### DPR-TH2-P6D-100L

Sensor type : NTC 10K $\Omega$   
 Range : -50 ~ 150 $^{\circ}$ C  
 Accuracy :  $\pm 1.5^{\circ}$ C at 25 $^{\circ}$ C  
 Sheath :  $\phi 6$  X 100mm, SUS  
 Protection : IP67  
 Cable : 2C X 0.5mm, sus-mesh shield teflon



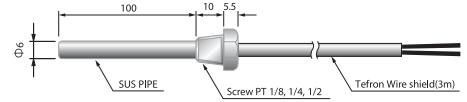
### DPR-TH1-RT

Sensor type : NTC 5K $\Omega$   
 Range : -50 ~ 105 $^{\circ}$ C  
 Accuracy :  $\pm 0.3^{\circ}$ C at 25 $^{\circ}$ C  
 Sheath :  $\phi 5$  X 35mm  
 Cable : 2C X 0.5mm, RESIN PIPE



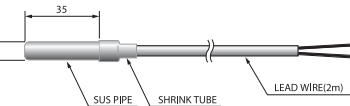
### DPR-TH1-S6D100L

Sensor type : NTC 5K $\Omega$   
 Range : -50 ~ 105 $^{\circ}$ C  
 Accuracy :  $\pm 0.3^{\circ}$ C at 25 $^{\circ}$ C  
 Sheath :  $\phi 6$  X 100mm, SUS  
 Protection : IP67  
 Cable : 2C X 0.5mm, sus-mesh shield teflon



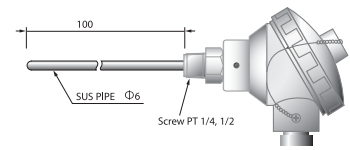
### DPR-TH1-ET

Sensor type : NTC 5K $\Omega$   
 Range : -50 ~ 105 $^{\circ}$ C  
 Accuracy :  $\pm 0.3^{\circ}$ C at 25 $^{\circ}$ C  
 Sheath :  $\phi 5$  X 35mm, SUS  
 Cable : 2C X 0.5mm



### DPR-TH1-H6D100L

Sensor type : NTC 5K $\Omega$   
 Range : -50 ~ 105 $^{\circ}$ C  
 Accuracy :  $\pm 0.3^{\circ}$ C at 25 $^{\circ}$ C  
 Sheath :  $\phi 6$  X 100mm, SUS  
 Protection : IP67  
 Cable : 2C X 0.5mm



## Temperature/Humidity Sensor Specification



### HTX23 - FHC

Sensor type : Humidity sensor  
 Range : 0~100%RH (4~20mA)  
 Cable : UL 2547 X 2C X 2m, AWG24  
 Housing : PC ABS

### HTX23 - FBS-502

Sensor type : Temperature sensor NTC 5K $\Omega$   
 Range : -20~80 $^{\circ}$ C  
 Cable : UL 2547 X 2C X 2m, AWG24  
 Housing : PC ABS



### HTX23 - FPC - 502

Sensor type : Temperature & Humidity sensor  
 Range : 0 ~ 100%RH, -20~80 $^{\circ}$ C (NTC 5K $\Omega$ )  
 Cable : UL 2547 X 4C X 2m, AWG24  
 Housing : PC ABS

### HTX23 - FBS - PT100

Sensor type : Temperature sensor PT100  
 Range : -20 ~ 80 $^{\circ}$ C  
 Cable : UL 2547 X 3C X 2m, AWG24  
 Housing : PC ABS

## Pressure Sensor Specification

### DP510

Measuring range : 0 ~ 16bar, 4~20mA  
 Accuracy : Within 1%FS  
 Size : Small type  
 Temperature Range : -40 ~ 125 $^{\circ}$ C  
 Applications :  
 - Automobiles & Heavy Equipments,  
 - Oil & Air Pressure Systems, Compressors,  
 - Industrial Engines, Pump Pressure Controls



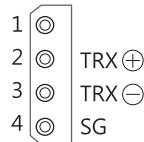
### 506.933A/506.930A

DOTECH OEM Model : 506.933A - For High Pressure (0~30bar)  
 DOTECH OEM Model : 506.930A - For Low Pressure (-1~9bar)  
 - Measuring pressure in pipe (water, oil, gas)  
 - Applying for all the refrigerants including ammonia (for freezing)  
 - EMC conformity  
 - Accuracy :  $\pm 0.5\%$  FS  
 - Using Temperature : -15 ~ 80 $^{\circ}$ C  
 - Insulation Class : IP65  
 - Output : 0~5V, 8~33VDC, 3wire  
 0~10V, 11.4~33VDC  
 16~34VDC/24VAC  
 4~20mA, 8~33VDC, 2wire

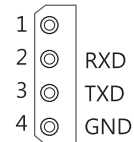


## Option Specification

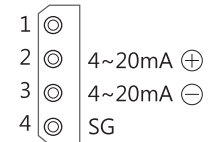
### RS-485 COMM. OPTION MODULE



### RS-232 COMM. OPTION MODULE



### 4~20mA Output OPTION MODULE



### 4~2mA Output & RS485 COMM. OPTION MODULE

