

# Air Compressor Controller (FX32A SERIES)



## PreCautions for Use

1. This Product May cause an Electric Shock in handling, please do not attempt to open it with power turned on.
  2. This Product should be installed in a place fixed securely by a rack or panel.
  3. This Product can be used under the following environmental conditions.
    - ① Indoor ② Pollution Degree 2 ③ At an Altitude of 2000m or below ④ Installation Category II
  4. To turn on or turn off power supply for this product, please the Circuit Breaker or Switch of a standard product of IEC 60947-1 or IEC 60947-3 product and install it within a close distance allowing convenient operation by user.
  5. Please be understood that if this product is dismantled or modified discretionary after sales service will not be able to be provided.
  6. An Output Wire to be used for this product should be Inflammable Grade FV1(V-1 grade or above), the thickness of the wire should be AWG No.20 or above.(0.50mm<sup>2</sup>)
  7. In order to prevent it from an noise, please maintain the high-voltage wire and power wire separated.
  8. Please avoid installing the product in a place where a strong magnetism, noise, severe vibration and impact exist.
  9. When extending the sense wire, use a shield wire and do not extend it unnecessarily long.
  10. The sensor wire and signal wire should be away from the power and load wires using conduits separately installed.
  11. Please avoid using the product near a device generating strong high frequency noise(High-frequency welding machine, High-frequency sewing machine, high-frequency radiotelegraph, High capacity SCR Controller).
  12. Product's damages other than those described in the guarantee conditions provided by the manufacturer shall not be responsible by us
- ※ The aforementioned precautions must be observed, and if you fail to do so, it may cause a product's breakdown.

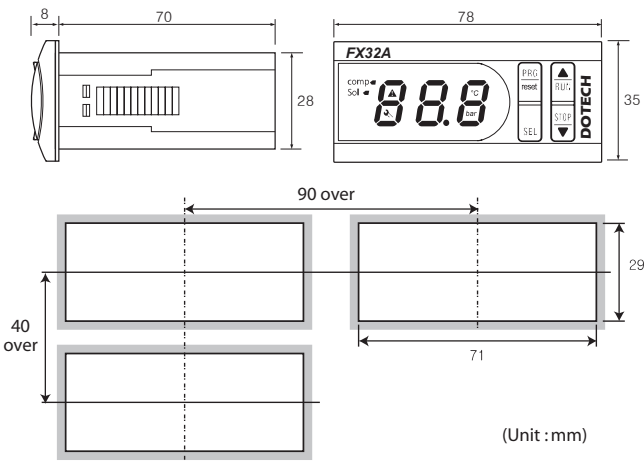
## Basic Setting

Model	FX32A
Power	100-240Vac, 50/60Hz, 4VA
Terminal	Screw Bolt terminal (1.5mm <sup>2</sup> line available)
Input/Output	Relay output 2point (250Vac/5A) – Main Motor, SOL Temp. sensor input 1point / 4~20mA input 1point (Sensor power supply built-in) Digital Input 2point – Interlock, Remote Start/Stop
Operation	Temperature -10~50°C, Humidity- Under 90%RH
Safekeeping	Temperature -20~60°C, Humidity- Under 90%RH
Sensor	Pressure Sensor :0~16bar, 4~20mA Temperature Sensor: Dotech's standard NTC Sensor DPR-TH02 (10kΩ at 25°C, Scope:-40 ~ 150°C, error :±1.5°C at 25°C)

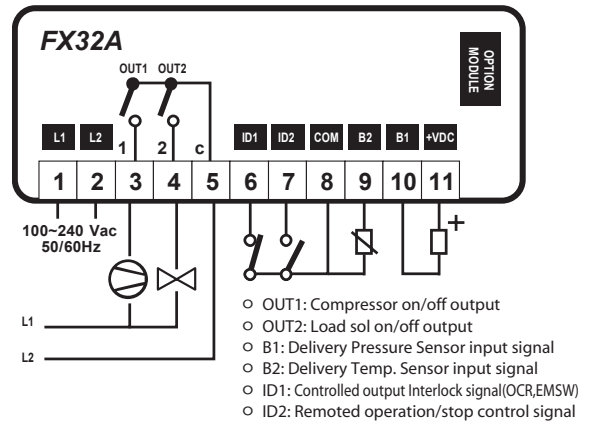
## Order Information

- FX32A - 00 : Basic Model
- FX32A - R4 : RS-485 Communication Model (Communication Function MODBUS RTU MODE)
- FX32A - R2 : RS-232 Communication Model (Log Printer, SMS)
- FX32A - A1 : 4~20mA Pressure sender output Model

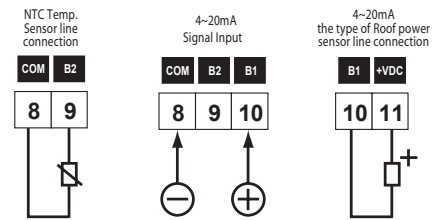
## External Measurement or Treated Panel



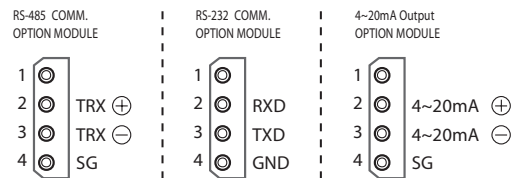
## Connection Diagram



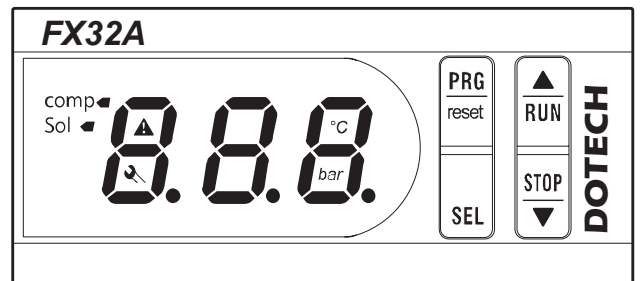
### o Sensor



### o Option



## Constitution(The function of display lamp or controlling switch)

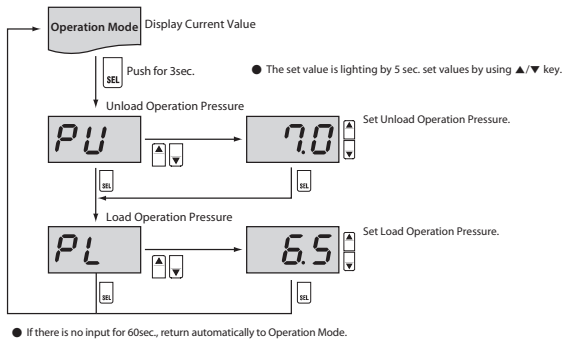


comp	Main controlling motor is ON (Flicking when waiting)
Sol	Idle operating is ON (Flicking when idle operating waiting)
bar	Display of Input value
°C	Display of Temp.
▲	On when Trip, Off when alarming
⚡	Lighting in the condition of over service period

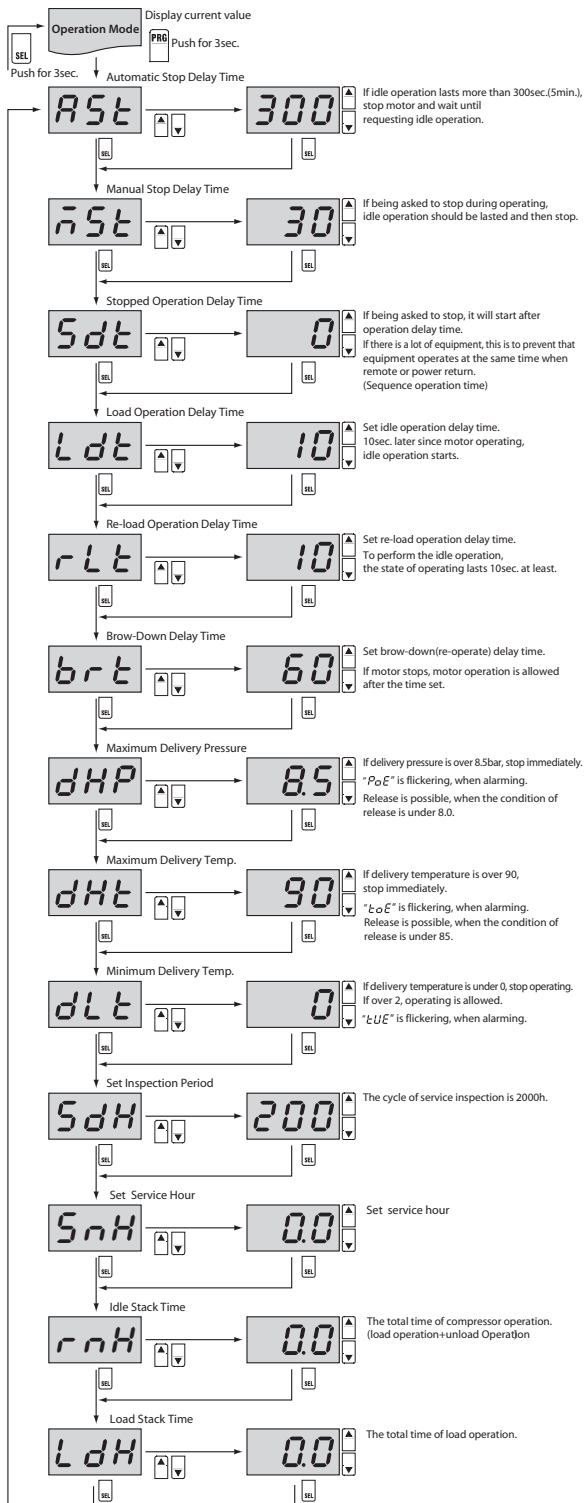
PRG reset	Use when setting the program (press for 3 sec.) (when releasing alarm, put twice fast)	▲ RUN	Menu change of increase of value Use when operating (put for 1sec.)
SEL	Execute choice or Input the set value	▼ STOP	Menu change or decrease of value Use when operating (put for over 1sec. when stopping)
PRG reset + ▲ RUN	To see or check total run hour press PRG + UP button simultaneously		
PRG reset + ▼ STOP	To see or check total load hour press PRG + DOWN button simultaneously		
If pushing for 30 sec. at the same time, setup value is initialized			

※ If putting RUN button and STOP button at the same time, exit air Temp. is displayed in 10sec. (To change to pressure display, put PRG or SEL button)

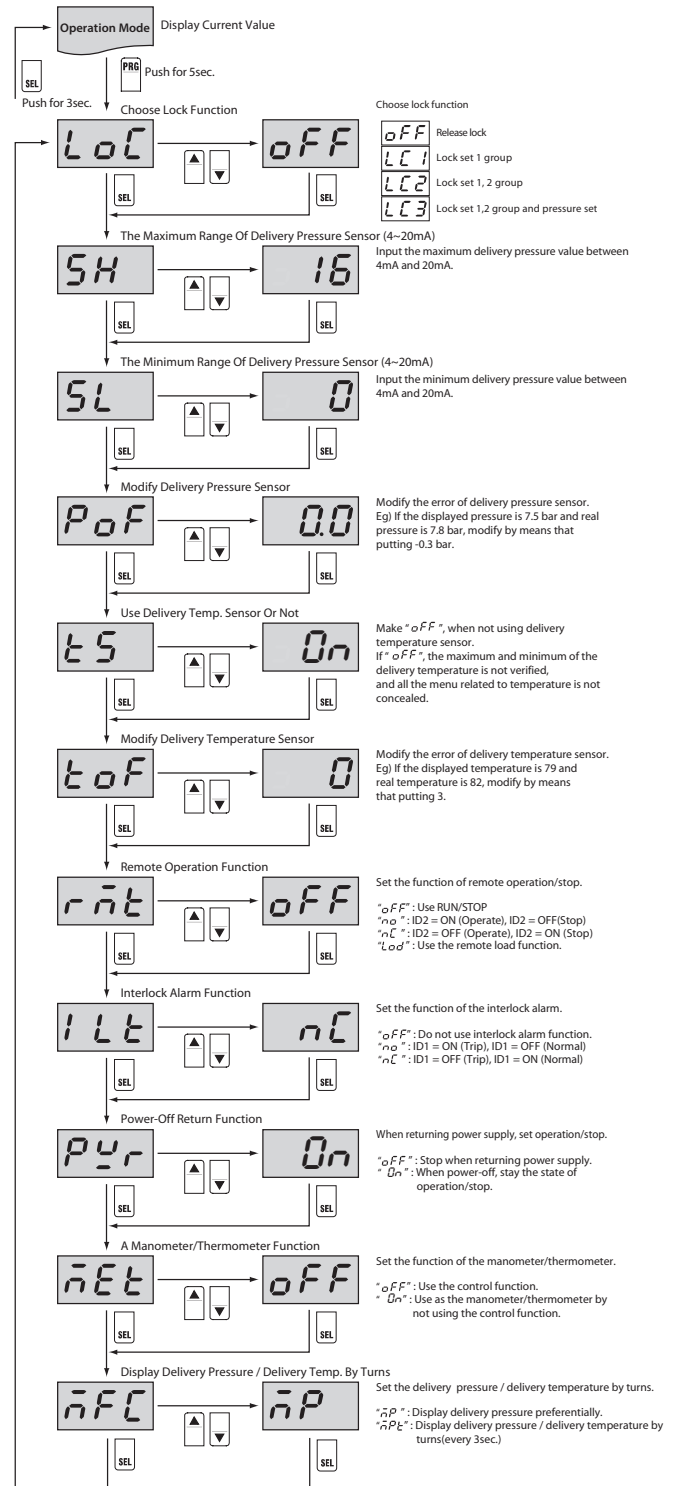
## ■ Set Idle/Load Operation Pressure



## ■ Set 1 Group



## ■ Set 2 Group



## TRIP / ALARM MESSAGE

EM	DESCRIPTION	CODE	REMARK	EVENT	RESET
0	Delivery Pressure Sensor Open	<i>PoP</i>	Sensing: Disconnection of delivery pressure sensor Release: Normal condition of delivery pressure sensor	Immediate Stop	Manual Return
1	Delivery Pressure Sensor Short	<i>PSt</i>	Sensing: Disconnection of delivery pressure sensor Release: Normal condition of delivery pressure sensor	Immediate Stop	Manual Return
2	Delivery Temp. Sensor Open	<i>toP</i>	Sensing: Disconnection of delivery pressure sensor Release: Normal condition of delivery pressure sensor	Immediate Stop	Manual Return
3	Delivery Temp. Sensor Short	<i>tSt</i>	Sensing: Disconnection of delivery pressure sensor Release: Normal condition of delivery pressure sensor	Immediate Stop	Manual Return
4	Interlock Alarm	<i>ILe</i>	Sensing: Alarming condition of digital input ID1 Release: Released condition of digital input ID1	Immediate Stop	Manual Return
5	Delivery Pressure Over	<i>PoE</i>	Sensing: delivery pressure $\geq$ [maximum delivery pressure] Release: delivery pressure $<$ [maximum delivery pressure] - 0.5bar	Immediate Stop	Manual Return
6	Delivery Temperature Over	<i>toE</i>	Sensing: delivery Temp. $\geq$ [maximum delivery Temp.] Release: delivery Temp. $<$ [maximum delivery Temp.] - 5°C	Immediate Stop	Manual Return
7	Delivery Temperature Under	<i>toU</i>	Sensing: delivery Temp. $\leq$ [minimum delivery Temp.] Release: delivery Temp. $>$ [minimum delivery Temp.] + 2°C	Operate, if in the condition of release	Automatic Return

※ Please click RPG button twice to return back manually in the condition of release.

## Set Unload/Load Operation Pressure

ITEM	DESCRIPTION	CODE	UNIT	STEP	MIN	MAX	DEFAULT	REMARK
000	Unload Pressure	<i>PU</i>	bar	0.1	<i>PL</i> +0.2	<i>dHP</i> -0.2	7.0	Set the unload pressure of compressor
001	Load Pressure	<i>PL</i>	bar	0.1	<i>SL</i> +0.5	<i>PU</i> -0.2	6.5	Set the load pressure of compressor

## Set 1 Group Table

ITEM	DESCRIPTION	CODE	UNIT	STEP	MIN	MAX	DEFAULT	REMARK
002	Auto Stop Delay Time	<i>ASt</i>	sec	1	0	999	300	Stop comp, if the unload operation lasts over 120sec.
003	Stop Delay Time	<i>nSt</i>	sec	1	0	999	30	After putting stop button and doing the unload operation, stop comp
004	Start Delay Time	<i>Sdt</i>	sec	1	0	999	0	When using a lot of equipment, set gradual operating delay time
005	Load Delay Time	<i>Ldt</i>	sec	1	0	999	10	When operating comp, it will be delayed to prevent overloading
006	Reload Delay Time	<i>rLt</i>	sec	1	0	999	10	It will take 10sec. when changing the unload operation to the load operation
007	Blow Down Timer	<i>brt</i>	sec	1	0	999	60	RE-operating delay time of comp
009	Delivery Press. High Level	<i>dHP</i>	bar	0.1	<i>SL</i> +0.5	<i>SH</i> -0.5	8.5	Set delivery pressure to prevent over pressure of compressor
013	Delivery Temp. High Level	<i>dHt</i>	°C	1	-40	150	90	Set delivery temp. to prevent over pressure of Temp.
014	Delivery Temp. Low Level	<i>dLt</i>	°C	1	-40	150	0	Set the compressor not to operate under low Temp.
016	Service Period Hour	<i>SdH</i>	h	1	0	9999	2000	* None decimal point : 123(1230~1239)hour * Decimal point : 12.3(123)hour
017	Service Hour	<i>SnH</i>	h	1	0	9999	0	
018	Total Run Hour	<i>rnH</i>	h	1	0	9999	0	
019	Total Load Hour	<i>LdH</i>	h	1	0	9999	0	

※ Unload Pressure should be set under 0.2bar of delivery pressure.

※ If the operating method is Y-Delta, set unload operation delay time longer than Y-Delta.

※ If service accumulation time is over service period time then service demand icon lamp is flickering. After service, set service accumulation time to '0'.

## Set 2 Group Table

ITEM	DESCRIPTION	CODE	UNIT	STEP	MIN	MAX	DEFAULT
300	Factor Lock Function (※2)	<i>LoL</i>			<i>oFF</i> :Release Lock <i>LoL2</i> :Set 1,2 Lock	<i>LoL1</i> :Set 1 Lock <i>LoL3</i> :Set 1,2,3,(Unload)Load pressure Set Lock	<i>oFF</i>
302	Delivery Press. Sensor Hi	<i>SH</i>	-	1	-99	+999	16
303	Delivery Press. Sensor Low	<i>SL</i>	-	1	-99	+999	0
304	Delivery Press. Sensor Offset	<i>PoF</i>	K	0.1	-9.9	+9.9	0.0
306	Delivery Temp. Sensor (※2)	<i>tS</i>			<i>oFF</i> : Do not use	<i>On</i> : Use	<i>oN</i>
307	Delivery Temp. Sensor Offset	<i>toF</i>	K	1	-20	+20	0.0
310	Remote Run/Stop (※3)	<i>rnt</i>			<i>oFF</i> : Do not use	<i>On</i> : Operate when on <i>nL</i> : Operate when off	<i>LoL</i> : Remote LOAD
311	Interlock Function	<i>ILt</i>			<i>oFF</i> : Do not use	<i>On</i> : Trip when on <i>nL</i> : Trip when off	<i>nL</i>
314	Auto Power	<i>PuR</i>			<i>oFF</i> : Stop when returning	<i>On</i> : Keep operation/stop when power off	<i>oN</i>
316	Meter Function (※4)	<i>nEt</i>			<i>oFF</i> : Use control fuction	<i>On</i> : A pressure gauge/A thermometer (controlled output of alarming are off)	<i>oFF</i>
317	Display Mode	<i>nFL</i>			<i>nP</i> : Display Pressure	<i>nPt</i> : Display pressure/Temp. by turns (every 3sec.)	<i>nP</i>

(※1) After all of the set are completed, set *LoL2* (Do not modify 1,2 groups except authorized person)

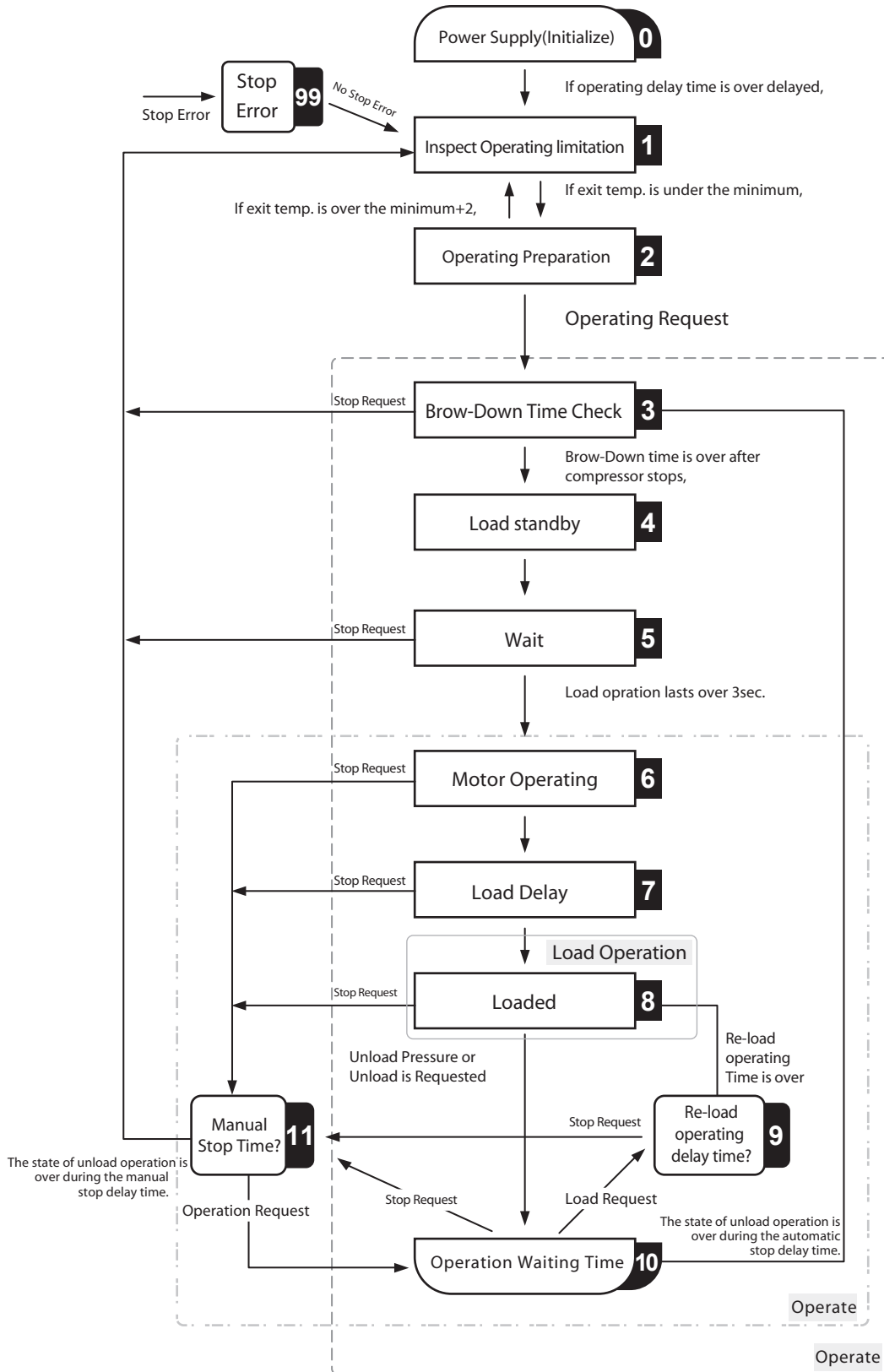
(※2) If not using Temp. sensor, it is not displayed of items related to Temp. and operated trip related to Temp.

(※3) If using remote operation, power off returning function is not displayed. When returning, operate/stop by digital input:ID2.but, use operate/stop button by using remote Load function.

(※4) If using a pressure gauge, a control function does not work. (re-generate power)

The operating sequence of FX32A is controlled by the Control Flow below.  
 The controller operates by the condition of input/output and connection between blocks defined.  
 (During putting PRG button and SEL button, the operating block code is displayed.)

If there is errors regardless of the state of operation, it will be the state of 99 (stop error) immediately.



※ When checking Brow-Down time, it is delayed 25% at first