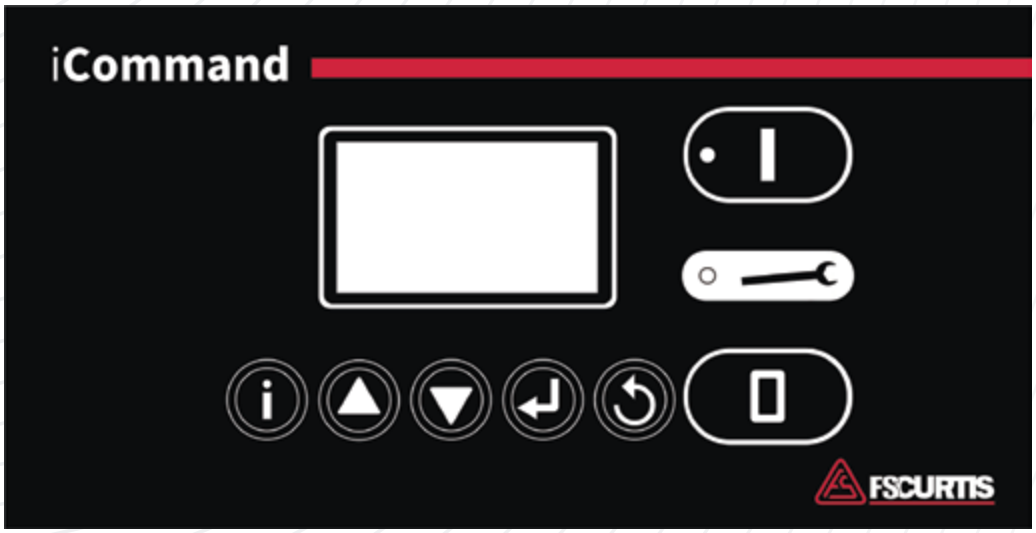
FSCURTIS



iCommand Controller

Nx Series

OPERATING MANUAL

IMPORTANT

Make a permanent record of the Model and Serial numbers of your machine here. You will save time and expense by including this reference identification on replacement parts.

MODEL #: _____ **SERIAL #:** _____

DANGER

Air used for breathing or food processing must meet OSHA 29CFR 1910.134 or FDA 21CFR 178.3570 Regulations. Failure to do so may cause severe injury or death.

1905 Kienlen Avenue,
St. Louis, MO 63133
314.383.1300
www.fscurtis.com

Table of Contents

01. GENERAL INFORMATION

1.1 - SAFETY INFORMATION

IMPORTANT

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of this symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by FS-Curtis for any consequences arising out of the use of this material. A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

DANGER (DANGER)

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

Un danger indique une situation dangereuse qui, si elle n'est pas évitée, pourrait entraîner la mort ou des blessures graves.

WARNING (AVERTISSEMENT)
WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

Un avertissement indique une situation dangereuse qui, si elle n'est pas évitée, pourrait entraîner la mort ou des blessures graves.

CAUTION (ATTENTION À LA SÉCURITÉ)
CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

La prudence indique une situation dangereuse qui, si elle n'est pas évitée, peut entraîner des blessures légères ou modérées.

NOTICE (NOTIFICATION)
NOTICE is used to address practices not related to physical injury.

Les avis sont utilisés pour décrire les pratiques non liées aux blessures corporelles.

1.2 - ABOUT THIS MANUAL

DOCUMENT SCOPE
This manual describes how to use this product.

PRODUCT RELATED INFORMATION
If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

DANGER!
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware,or cables.
- Unplug the power cable from both this product and the power supply prior to installing or removing the product.
- Always use a properly rated voltage sensing device to confirm power is off where and when indicated.
- Replace and secure all covers or elements of the system before applying power to this product.
- Use only the specified voltage when operating this product. Always check whether your device is correctly powered before applying power.

Failure to follow these instructions will result in death or serious injury.

DANGER!
RISQUE DE CHOC ÉLECTRIQUE, D'EXPLOSION OU DE CLIGNOTEMENT D'ARC

- Débranchez toute l'alimentation électrique de l'équipement avant d'enlever tout couvercle ou composant du système et avant d'installer ou d'enlever tout accessoire, matériel ou câble.
- Avant d'installer ou de retirer le produit, débranchez le cordon d'alimentation du produit et de l'alimentation électrique.
- Toujours utiliser un capteur de tension convenablement nominal pour confirmer que l'alimentation électrique est éteinte à la position et au moment indiqués.
- Remplacer et sécuriser tous les couvercles ou composants du système avant de mettre ce produit sous tension.
- N'utilisez que la tension spécifiée lors du fonctionnement de ce produit. Assurez - vous de vérifier que votre appareil est correctement alimenté avant de l'alimenter.

Le non - respect de ces instructions peut entraîner la mort ou des blessures graves.

When you cycle power, wait at least 10 seconds after it has been turned off. If this product is restarted too quickly, it may not operate correctly.

WARNING!
LOSS OF CONTROL

- The designer of any control scheme must consider the potential failure modes of control paths and, for certain critical control functions, provide a means to achieve a safe state during and after a path failure. Examples of critical control functions are emergency stop, power outage and restart.
- Each implementation of this product must be individually and thoroughly tested for proper operation before being placed into service.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

AVERTISSEMENT!
Hors de contrôle

- Le concepteur de tout système de contrôle doit tenir compte des modes de défaillance potentiels du chemin de contrôle et, pour certaines fonctions de contrôle critiques, doit fournir des moyens d'obtenir un état de sécurité pendant et après la défaillance du chemin. Des exemples de fonctions de commande critiques comprennent l'arrêt d'urgence, la coupure de courant et le redé marrage.
- Chaque mise en oeuvre de ce produit doit faire l'objet d'essais individuels et approfondis avant sa mise en service afin d'assurer son bon fonctionnement.

Le non - respect de ces instructions peut entraîner la mort, des blessures graves ou des dommages à l'équipement.

WARNING!
UNINTENDED EQUIPMENT OPERATION

Follow all local and national safety standards.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

AVERTISSEMENT!
Fonctionnement inattendu de l'équipement

Respecter toutes les normes de sécurité locales et nationales.

Le non - respect de ces instructions peut entraîner la mort, des blessures graves ou des dommages à l'équipement.

WARNING!
UNINTENDED EQUIPMENT OPERATION

- Do not use this product as the only means of control for critical system functions such as motor start/stop or power control.
- Do not use this equipment as the only notification device for critical alarms, such as device overheating or overcurrent.
- Use only the software provided with this product. If you use other software, please confirm the operation and safety before use.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

AVERTISSEMENT!
Fonctionnement inattendu de l'équipement

- Ne pas utiliser ce produit comme seul moyen de commande pour les fonctions critiques du système telles que le démarrage / arrêt du moteur ou la commande de puissance.
- Ne pas utiliser cet équipement comme dispositif de notification unique pour les alarmes critiques telles que la surchauffe ou le courant excessif de l'équipement.
- N'utilisez que le logiciel fourni avec ce produit. Si vous utilisez un autre logiciel, assurez - vous de son fonctionnement et de sa sécurité avant de l'utiliser.

Le non - respect de ces instructions peut entraîner la mort, des blessures graves ou des dommages à l'équipement.

The following characteristics are specific to the LCD panel and are considered normal behavior:

- LCD screen may show unevenness in the brightness of certain images or may appear different when seen from outside the specified viewing angle. Extended shadows, or crosstalk may also appear on the sides of screen images.
- LCD screen pixels may contain black and white colored spots and color display may seem to have changed.
- When experiencing vibrations within a certain frequency range and vibration acceleration is above what is acceptable, the LCD screen may partially turn white. Once the vibration condition ends, the whitening of the screen is resolved.

NOTICE!
EQUIPMENT DAMAGE

- Do not press on the display of this product with excessive force or with a hard object.
- Do not press on the touch panel with a pointed object, such as the tip of a mechanical pencil or a screwdriver.
- Handle this product carefully to prevent puncture, bursting, or cracking of the panel material.

Failure to follow these instructions can result in equipment damage.

NOTIFICATION!
DOMMAGES MATÉRIELS

- Ne pas utiliser une force excessive ou appuyer sur l'affichage du produit avec un objet dur.
- N'appuyez pas sur le panneau tactile avec un objet pointu, comme l'extrémité d'un crayon mécanique ou d'un tournevis.
- Manipuler ce produit avec soin afin d'éviter que le matériau du panneau ne soit perforé, fissuré ou fissuré.

Le non - respect de ces instructions peut causer des dommages à l'équipement.

1.3 - PACKAGE CONTENTS

Verify all items listed here are present in your package.

NOTE: This product has been carefully packed with special attention to quality. However, should you find anything damaged or missing, please contact customer support immediately.

AGENCY CERTIFICATIONS
Underwriters Laboratories Inc.

END OF LIFE
The product contains electronic boards. It must be disposed of in specific treatment channels. The product contains cells and/or storage batteries which must be collected and processed separately when they have run out and at the end of product life (Directive 2012/19/EU).

1.4 - DEVICE CONNECTIVITY

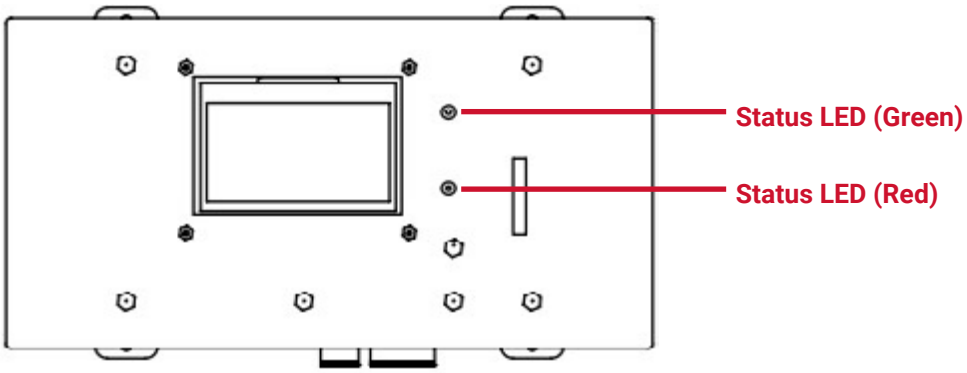
SYSTEM DESIGN

This product is an Industrial controller which controls an air compressor to start and stop, loading / unloading, pressure selection and monitoring of the operation of each part of the system according to the parameters set by the user, and sends a warn signal or shutdown protection in case of abnormality.

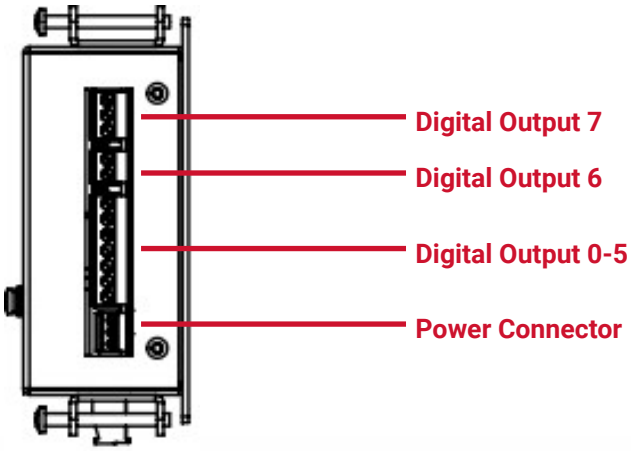
1.5 - PARTS IDENTIFICATION AND FUNCTIONS

PARTS IDENTIFICATION

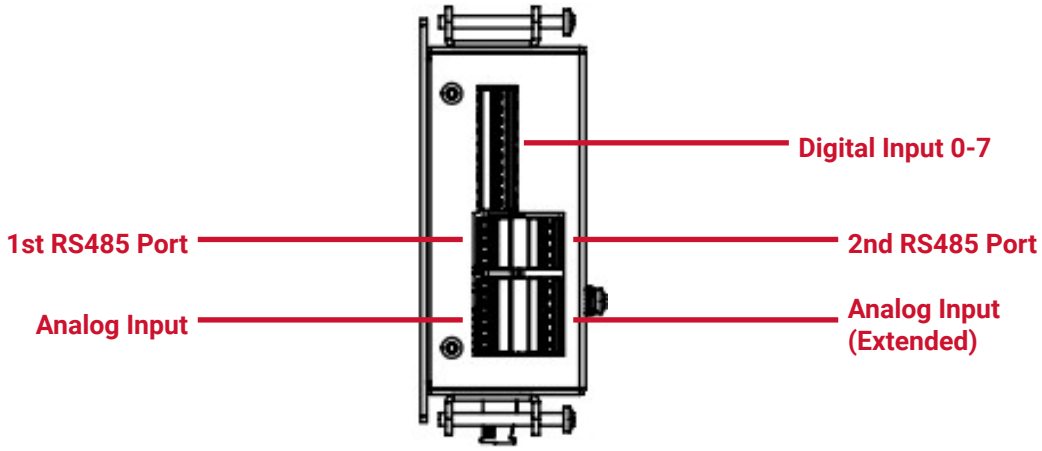
- **Front**



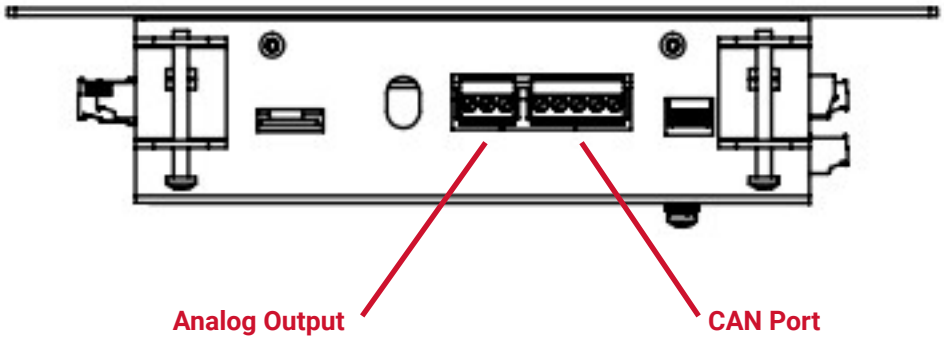
- **Left**



- **Right**



- **Bottom**



LED Indications

Color	State	Description
Green	On	In operation
	Flashing	Standby
Red	On	The system detects a fault signal.
	Flashing	The system detects a warning signal.

1.6 - SPECIFICATIONS

ELECTRICAL SPECIFICATIONS

Electrical Specifications	
Power Supply	DC 18-30V SELV AC 24V +10% /-15% 50/60Hz ≤ 10VA
Digital Output	Output type: Relay output (resistive load) Rated switching voltage: 250Vac(Overvoltage Category II)/30Vdc Rated switching current: 2A
Digital Input	24Vdc, 5mA
Analog Output	DC 4-20mA
Analog Input	Power output for PTC: 12Vdc,10mA
Analog Input	Pressure detection power output:24Vdc,100mA Pressure detection analog input: 4-20mA
RS485 Port, CAN Port	Signal level

ENVIRONMENTAL SPECIFICATIONS

Use (indoor) and store this product in areas that conform to the specified conditions.

Environmental Specifications	
Operating Temperature	-10℃ ~ +60℃
Storage Temperature	-20℃ ~+ 70℃
Protection Level	IP20 (whole equipment) Type 1 (front panel)
Humidity	5% ~ 95% No condensation
Operating Altitude	Less than 2000 meters
Pollution Degree	2

AIR QUALITY REQUIREMENTS

Do not operate or store the product where chemicals evaporate, or where chemicals are present in the air:

- Corrosive chemicals: Acids, alkalines, liquids containing salt.
- Flammable chemicals: Organic solvents.

CAUTION (ATTENTION À LA SÉCURITÉ)
INOPERATIVE EQUIPMENT
Do not allow water, liquids, metal, and wiring fragments to enter the panel case.

Failure to follow these instructions can result in injury or equipment damage.

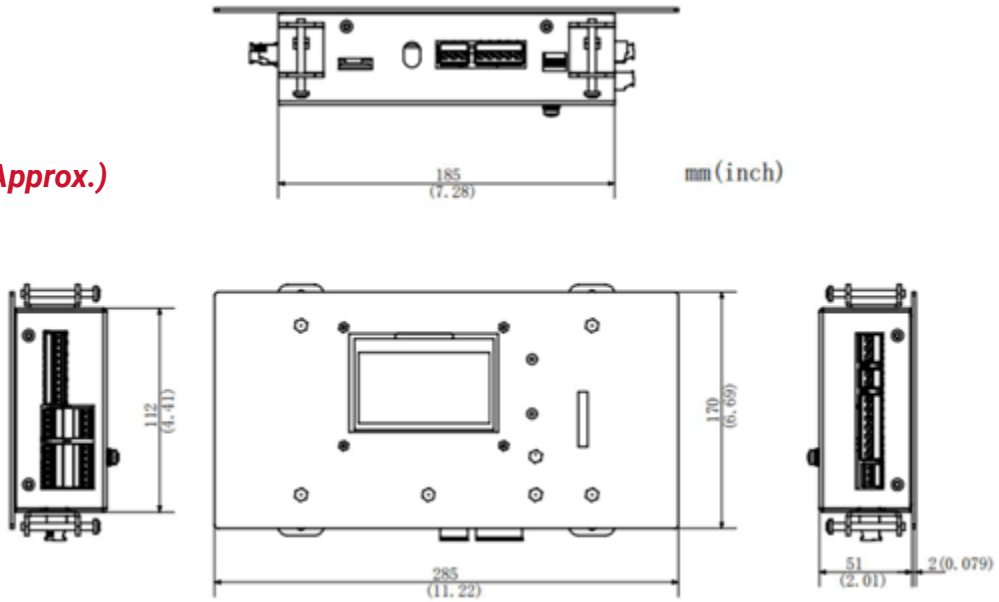
ÉQUIPEMENT INOPÉRANT
Ne laissez pas l'eau, le liquide, le métal et les débris de câblage entrer dans le boîtier du panneau.

Le non - respect de ces instructions peut entraîner des blessures corporelles ou des dommages à l'équipement.

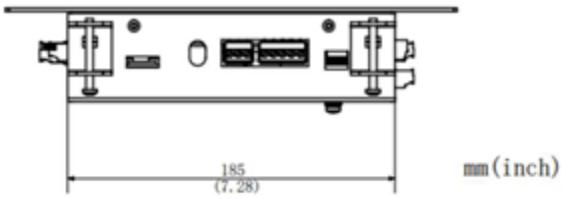
1.7 - STRUCTURAL SPECIFICATIONS

EXTERNAL DIMENSIONS - 1

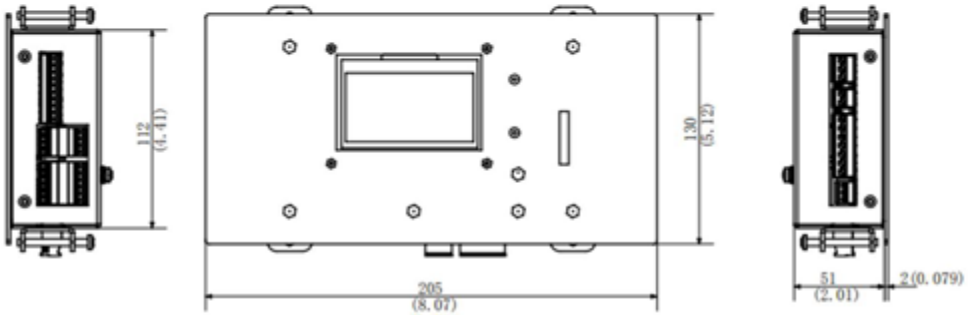
Weight: 1.6 Kg (Approx.)



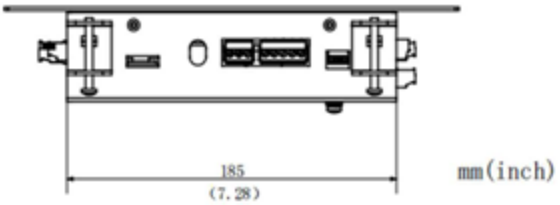
EXTERNAL DIMENSIONS - 2



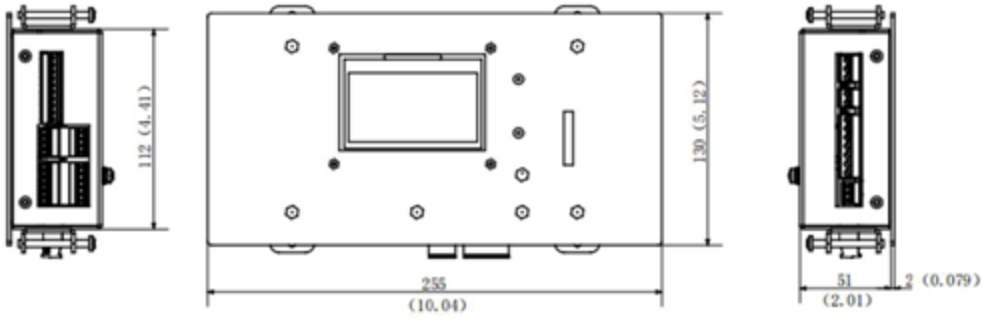
Weight: 1.50 Kg (Approx.)



EXTERNAL DIMENSIONS - 2



Weight: 1.55 Kg (Approx.)



Grounding(PE):Grounding resistance of 4 Ω or less, 2 mm^2 (AWG 14) or thicker wire,the necessary torque is 1.4 N•m (12.4 lb-in) or your country's applicable standard.

NOTICE!
STORAGE AND OPERATION OUTSIDE OF SPECIFICATIONS

- Store this product in areas where temperatures are within the product's specifications.

Failure to follow these instructions can result in equipment damage.

NOTIFICATION!
STOCKAGE ET EXPLOITATION HORS SPÉCIFICATIONS

- Entreposer le produit dans une zone où la température est conforme aux spécifications du produit.

Le non - respect de ces instructions peut causer des dommages à l'équipement.

1.8 - FUNCTIONAL SPECIFICATIONS

DISPLAY SPECIFICATIONS

- 128*64 dot matrix display, GWMS9016

INTERFACE SPECIFICATIONS

Interface Specifications

Terminal	Port	Name	Description	Remark
P1	1	AC1	AC Input 1/DC Input+	
	2	AC2	Input 2/DC Input-	
	3	FE	Earthing	

- Recommended cross section: 0.08...1.3 mm^2 (28...16 AWG)
- The necessary torque is 0.45 N•m (4 lb-in) for the Phoenix terminal, 0.19 N•m (1.7 lb-in) for the DINKLE terminal.

WARNING!

- Use copper wire rated for 300V.
- Minimum temperature rating of the cable to be connected to the field wiring terminals, 80 °C.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

AVERTISSEMENT!

- Utilisation de fils de cuivre d'une tension nominale de 300V
- La température minimale des câbles raccordés aux bornes de champ est de 80 °C.

Le non - respect de ces instructions peut entraîner la mort, des blessures graves ou des dommages à l'équipement.

Interface Specifications

Terminal	Port	Name	Description	Remark
P2	1	DO5	Digital output 5	
	2	DO4	Digital output 4	
	3	DO3	Digital output 3	
	4	DO2	Digital output 2	
	5	DO1	Digital output 1	
	6	DO0	Digital output 0	

- Recommended cross section: 0.2...1.3 mm^2 (24...16 AWG)
- The necessary torque is 0.56 N•m (5 lb-in) for the Phoenix terminal, 0.51N•m (4.5 lb-in) for the DINKLE terminal.

WARNING!

- Use copper wire rated for 300V.
- Minimum temperature rating of the cable to be connected to the field wiring terminals, 80 °C.

Failure to follow these instructions can result in equipment damage.

AVERTISSEMENT!

- Utilisation de fils de cuivre d'une tension nominale de 300V
- La température minimale des câbles raccordés aux bornes de champ est de 80 °C.

Le non - respect de ces instructions peut entraîner la mort, des blessures graves ou des dommages à l'équipement.

Interface Specifications

Terminal	Port	Name	Description	Remark
P3	1	DO6	Digital output 6	
	2	COM6	Digital output common 6	

- Recommended cross section: 0.2...1.3 mm^2 (24...16 AWG)
- The necessary torque is 0.56 N•m (5 lb-in) for the Phoenix terminal, 0.51N•m (4.5 lb-in) for the DINKLE terminal.

WARNING!

- Use copper wire rated for 300V.
- Minimum temperature rating of the cable to be connected to the field wiring terminals, 80 °C.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

AVERTISSEMENT!

- Utilisation de fils de cuivre d'une tension nominale de 300V
- La température minimale des câbles raccordés aux bornes de champ est de 80 °C.

Le non - respect de ces instructions peut entraîner la mort, des blessures graves ou des dommages à l'équipement.

Interface Specifications

Terminal	Port	Name	Description	Remark
P4	1	DO7NO	Digital output 7 NO	
	2	COM7	Digital output common 7	
	3	DO7NC	Digital output 7 NC	

- Recommended cross section: 0.2...1.3 mm^2 (24...16 AWG)
- The necessary torque is 0.56 N•m (5 lb-in) for the Phoenix terminal, 0.51N•m (4.5 lb-in) for the DINKLE terminal.

WARNING!

- Use copper wire rated for 300V.
- Minimum temperature rating of the cable to be connected to the field wiring terminals, 80 °C.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

AVERTISSEMENT!

- Utilisation de fils de cuivre d'une tension nominale de 300V
- La température minimale des câbles raccordés aux bornes de champ est de 80 °C.

Le non - respect de ces instructions peut entraîner la mort, des blessures graves ou des dommages à l'équipement.

Interface Specifications

Terminal	Port	Name	Description	Remark
P5	1	DI7	Digital input 7	
	2	DI6	Digital input 6	
	3	DI5	Digital input 5	
	4	DI4	Digital input 4	
	5	DI3	Digital input 3	
	6	DI2	Digital input 2	
	7	DI1	Digital input 1	
	8	DI0	Digital input 0	
	9	12V	DC 12V Power output (Only PTC use)	
	10	DCOM	Digital input common	

- Recommended cross section: 0.08...1.3 mm^2 (28...16 AWG)
- The necessary torque is 0.45 N•m (4 lb-in) for the Phoenix terminal, 0.19 N•m (1.7 lb-in) for the DINKLE terminal.

WARNING!

- Use copper wire rated for 300V.
- Minimum temperature rating of the cable to be connected to the field wiring terminals, 80 °C.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

AVERTISSEMENT!

- Utilisation de fils de cuivre d'une tension nominale de 300V
- La température minimale des câbles raccordés aux bornes de champ est de 80 °C.

Le non - respect de ces instructions peut entraîner la mort, des blessures graves ou des dommages à l'équipement.

Interface Specifications

Terminal	Port	Name	Description	Remark
P6 (Bottom)	1	XGND	1st RS485 port 0V (Isolation)	
	2	B1	1st RS485 port B (Isolation)	
	3	A1	1st RS485 port A (Isolation)	
	4	N.C	N.C	
P6 (Top)	5	GND	2nd RS485 port 0V (Non-isolation)	
	6	B2	2nd RS485 port B (Non-isolation)	
	7	A2	2nd RS485 port A (Non-isolation)	
	8	N.C	N.C	

- Recommended cross section: 0.08...1.3 mm^2 (28...16 AWG)
- The necessary torque is 0.45 N•m (4 lb-in) for the Phoenix terminal, 0.19 N•m (1.7 lb-in) for the DINKLE terminal (P6 top).
- The necessary torque is 0.23 N•m (2 lb-in) for the Phoenix terminal, 0.19 N•m (1.7 lb-in) for the DINKLE terminal (P6 bottom).

WARNING!

- Use copper wire rated for 300V.
- Minimum temperature rating of the cable to be connected to the field wiring terminals, 80 °C.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

AVERTISSEMENT!

- Utilisation de fils de cuivre d'une tension nominale de 300V
- La température minimale des câbles raccordés aux bornes de champ est de 80 °C.

Le non - respect de ces instructions peut entraîner la mort, des blessures graves ou des dommages à l'équipement.

Interface Specifications

Terminal	Port	Name	Description	Remark
P7 (Bottom)	1	FE	Earthing	
	2	AGND	Analog Input 0V	
	3	T1+	PT100/PT1000 input 1+	
	4	T2+	PT100/PT1000 input 2+	
	5	P1-	Pressure input 1-	
	6	P1+	Pressure input 1+	
P7 (Top)	7	FE	Earthing	
	8	AGND	Analog Input 0V	
	9	T1-	PT100/PT1000 input 1-	
	10	T2-	PT100/PT1000 input 2-	
	11	P2-	Pressure input 2-	
	12	P2+	Pressure input 2+	

- Recommended cross section: 0.08...1.3 mm^2 (28...16 AWG)
- The necessary torque is 0.45 N•m (4 lb-in) for the Phoenix terminal, 0.19 N•m (1.7 lb-in) for the DINKLE terminal (P7 Top).
- The necessary torque is 0.23 N•m (2 lb-in) for the Phoenix terminal, 0.19 N•m (1.7 lb-in) for the DINKLE terminal (P7 Bottom).

WARNING!

- Use copper wire rated for 300V.
- Minimum temperature rating of the cable to be connected to the field wiring terminals, 80 °C.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

AVERTISSEMENT!

- Utilisation de fils de cuivre d'une tension nominale de 300V
- La température minimale des câbles raccordés aux bornes de champ est de 80 °C.

Le non - respect de ces instructions peut entraîner la mort, des blessures graves ou des dommages à l'équipement.

Interface Specifications

Terminal	Port	Name	Description	Remark
P8	1	24V	DC24V power output +	
	2	GND	DC24V power output -	
	3	FE	Earthing	
	4	CANH	CAN Port +	
	5	CANL	CAN Port -	

- Recommended cross section: 0.2...1.3 mm^2 (24...16 AWG)
- The necessary torque is 0.56 N•m (5 lb-in) for the Phoenix terminal, 0.51N•m (4.5 lb-in) for the DINKLE terminal.

WARNING!

- Use copper wire rated for 300V.
- Minimum temperature rating of the cable to be connected to the field wiring terminals, 80 °C.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

AVERTISSEMENT!

- Utilisation de fils de cuivre d'une tension nominale de 300V
- La température minimale des câbles raccordés aux bornes de champ est de 80 °C.

Le non - respect de ces instructions peut entraîner la mort, des blessures graves ou des dommages à l'équipement.

Interface Specifications

Terminal	Port	Name	Description	Remark
P9	1	AO0	Analog output 0	
	2	AO1	Analog output 1	
	3	GND	Analog output common	

- Recommended cross section: 0.2...1.3 mm^2 (24...16 AWG)
- The necessary torque is 0.56 N•m (5 lb-in) for the Phoenix terminal, 0.51N•m (4.5 lb-in) for the DINKLE terminal.

WARNING!

- Use copper wire rated for 300V.
- Minimum temperature rating of the cable to be connected to the field wiring terminals, 80 °C.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

AVERTISSEMENT!

- Utilisation de fils de cuivre d'une tension nominale de 300V
- La température minimale des câbles raccordés aux bornes de champ est de 80 °C.

Le non - respect de ces instructions peut entraîner la mort, des blessures graves ou des dommages à l'équipement.

1.9 - INTERFACE CONNECTION - CABLE CONNECTIONS

WARNING!
EXPLOSION HAZARD

- Do not connect or disconnect equipment unless power has been switched off or the area is known to be non-hazardous. This applies to all interface connections.
- Never use unshielded/ungrounded cables in hazardous locations.
- Do not disconnect equipment while the circuit is live or unless the area is known to be free of ignitable concentrations.
- Remove power before attaching or detaching any connectors to or from this product.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

AVERTISSEMENT!
RISQUE D'EXPLOSION

- Ne branchez pas ou ne débranchez pas l'équipement à moins que l'alimentation électrique ne soit éteinte ou qu'il ne soit connu que la zone n'est pas dangereuse. Ceci s'applique à toutes les connexions d'interface.
- N'utilisez pas de câbles non blindés / non ancrés dans des endroits dangereux.
- Ne débranchez pas l'équipement lorsque le circuit est sous tension ou à moins que vous ne sachiez qu'il n'y a pas de concentration combustible dans cette zone.
- Avant de connecter ou de retirer des connecteurs de ce produit, débranchez l'alimentation électrique.

Le non - respect de ces instructions peut entraîner la mort, des blessures graves ou des dommages à l'équipement.

1.10 - INSTALLATION AND WIRING

WARNING!

- Equipment installation can only be carried out by the professional personnel of the manufacturer.

Failure to follow these instructions can result in injury or equipment damage.

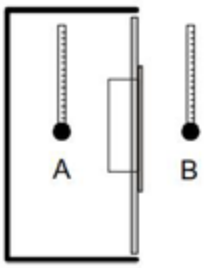
AVERTISSEMENT!

- L'installation de l'équipement ne doit être effectuée que par des professionnels du fabricant.

Le non - respect de ces instructions peut entraîner des blessures corporelles ou des dommages à l'équipement.

Installation Requirements

- Check that the ambient air temperature and the ambient humidity are within their specified ranges in Environmental Specifications. When installing this product in a cabinet or enclosure, the ambient air temperature is the cabinet's or enclosure's internal and external temperature.
- Be sure that heat from surrounding equipment does not cause this product to exceed its standard operating temperature.



A. Internal Temperature
B. External Temperature

Installation Procedure

DANGER!
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Unplug the power cable from both this product and the power supply prior to installing or removing the product.
- Always use a properly rated voltage sensing device to confirm power is off where and when indicated.
- Replace and secure all covers or elements of the system before applying power to this product.
- Use only the specified voltage when operating this product. Always check whether your device is properly powered before applying power.

Failure to follow these instructions will result in death or serious injury.

DANGER!
RISQUE DE CHOC ÉLECTRIQUE, D'EXPLOSION OU DE CLIGNOTEMENT D'ARC

- Débranchez toute l'alimentation électrique de l'équipement avant d'enlever tout couvercle ou composant du système et avant d'installer ou d'enlever tout accessoire, matériel ou câble.
- Avant d'installer ou de retirer le produit, débranchez le cordon d'alimentation du produit et de l'alimentation électrique.
- Toujours utiliser un capteur de tension convenablement nominal pour confirmer que l'alimentation électrique est éteinte à la position et au moment indiqués.

- Remplacer et sécuriser tous les couvercles ou composants du système avant de mettre ce produit sous tension.
- N'utilisez que la tension spécifiée lors du fonctionnement de ce produit. Assurez - vous de vérifier que votre appareil est correctement alimenté avant de l'alimenter.

Le non - respect de ces instructions peut entraîner la mort ou des blessures graves.

NOTICE!
EQUIPMENT DAMAGE

Keep this product stabilized in the panel cut while you are installing or removing the screw fasteners.

Failure to follow these instructions can result in equipment damage.

NOTIFICATION!
DOMMAGES MATÉRIELS

Lors de l'installation ou de l'enlèvement des attaches à vis, maintenir le produit stable dans l'entaille du panneau.

Le non - respect de ces instructions peut causer des dommages à l'équipement.

NOTICE!
BROKEN ENCLOSURE

Do not exert more torque than the amount specified.

Failure to follow these instructions can result in equipment damage.

NOTIFICATION!
BOÎTIER ENDOMMAGÉ

Le couple appliqué ne doit pas dépasser la quantité spécifiée.

Le non - respect de ces instructions peut causer des dommages à l'équipement.

1.11 - REMOVAL PROCEDURE

DANGER!
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Unplug the power cable from both this product and the power supply prior to installing or removing the product.
- Always use a properly rated voltage sensing device to confirm power is off where and when indicated.
- Replace and secure all covers or elements of the system before applying power to this product.
- Use only the specified voltage when operating this product. Always check whether your device is properly powered before applying power.

Failure to follow these instructions will result in death or serious injury.

DANGER!
RISQUE DE CHOC ÉLECTRIQUE, D'EXPLOSION OU DE CLIGNOTEMENT D'ARC

- Débranchez toute l'alimentation électrique de l'équipement avant d'enlever tout couvercle ou composant du système et avant d'installer ou d'enlever tout accessoire, matériel ou câble.
- Avant d'installer ou de retirer le produit, débranchez le cordon d'alimentation du produit et de l'alimentation électrique.
- Toujours utiliser un capteur de tension convenablement nominal pour confirmer que l'alimentation électrique est éteinte à la position et au moment indiqués.
- Remplacer et sécuriser tous les couvercles ou composants du système avant de mettre ce produit sous tension.
- N'utilisez que la tension spécifiée lors du fonctionnement de ce produit. Assurez - vous de vérifier que votre appareil est correctement alimenté avant de l'alimenter.

Le non - respect de ces instructions peut entraîner la mort ou des blessures graves.

CAUTION!
RISK OF INJURY

Do not drop this product when you remove it from the panel.

- Hold this product in place after removing the fasteners.
- Use both hands.

Failure to follow these instructions can result in injury or equipment damage.

ATTENTION À LA SÉCURITÉ!
RISQUE DE BLESSURE

Ne laissez pas tomber ce produit lorsque vous le retirez du panneau.

- Après avoir enlevé les attaches, fixer le produit en place.
- Avec les deux mains.

Le non - respect de ces instructions peut entraîner des blessures corporelles ou des dommages à l'équipement.

1.12 - WIRING THE POWER SUPPLY

POWER CORD PREPARATION

- Make sure the ground wire is either the same or heavier gauge than the power wires(Do not exceed the certified wire diameter range of the terminal block).
- Do not use aluminum wires in the power supply's power cord.
- To prevent the possibility of a terminal short, use a pin terminal that has an insulating sleeve.
- If the ends of the individual wires are not twisted correctly, the wires may create a short circuit.
- Use the SELV (Safety Extra-Low Voltage) circuit.
- Confirm the level of current supported by the wire.

CONNECTING THE POWER CORD

DANGER!
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Remove power before wiring this product's power terminals.
- Always use a properly rated voltage sensing device to confirm power is off where and when indicated.
- Replace and secure all covers or elements of the system before applying power to this product.
- Use only the specified voltage when operating this product. Always check whether your device is correctly powered before applying power.
- Be sure to ground this product's PE terminal.

Failure to follow these instructions will result in death or serious injury.

DANGER!
RISQUE DE CHOC ÉLECTRIQUE, D'EXPLOSION OU DE CLIGNOTEMENT D'ARC

- Débranchez toute l'alimentation électrique de l'équipement avant d'enlever tout couvercle ou composant du système et avant d'installer ou d'enlever tout accessoire, matériel ou câble.
- Avant de connecter le terminal d'alimentation de ce produit, débranchez l'alimentation.
- Toujours utiliser un capteur de tension convenablement nominal pour confirmer que l'alimentation électrique est éteinte à la position et au moment indiqués.
- Remplacer et sécuriser tous les couvercles ou composants du système avant de mettre ce produit sous tension.
- N'utilisez que la tension spécifiée lors du fonctionnement de ce produit. Assurez - vous de vérifier que votre appareil est correctement alimenté avant de l'alimenter.
- Assurez - vous que le terminal PE de ce produit est mis à la terre.

Le non - respect de ces instructions peut entraîner la mort ou des blessures graves.

POWER SUPPLY PRECAUTIONS

DANGER!
SHORT CIRCUIT, FIRE, OR UNINTENDED EQUIPMENT OPERATION

- Install and fasten this product in a cabinet prior to connecting power supply and communication lines.
- Securely attach power cables to an installation panel or cabinet.
- Avoid excessive force on the power cable.

Failure to follow these instructions will result in death or serious injury.

DANGER!
COURT - CIRCUIT, INCENDIE OU FONCTIONNEMENT IMPRÉVU DE L'ÉQUIPEMENT

- Installez et attachez ce produit dans l'armoire avant de connecter les lignes d'alimentation et de communication.
- Connectez solidement le câble d'alimentation au panneau de montage ou à l'armoire.
- Évitez d'appliquer une force excessive sur les câbles électriques.

Le non - respect de ces instructions peut entraîner la mort ou des blessures graves.

1.13 - IMPROVING NOISE/SURGE RESISTANCE

- This product's power cord should not be bundled with or kept close to main circuit lines (high voltage, high current), power lines, or input/output lines, and their various systems should be kept separate. When power lines cannot be wired via a separate system, use shielded cables for input/output lines.
- Make the power cord as short as possible, and be sure to twist the ends of the wires together (i.e. twisted pair cabling) from close to the power supply unit.
- If there is an excess amount of noise on the power supply line, reduce the noise with a noise filter before turning on the power.
- Connect a surge protection device to handle power surges.
- To increase noise resistance, attach a ferrite core to the power cable.

1.14 - MAINTENANCE - PERIODIC CHECK POINTS

1.14.1 - REPLACING THE BATTERY

Model:CR2032

When the system date or time display is abnormal, it indicates that a battery in the controller needs to be replaced, please inform the manufacturer to replace the battery in time.

WARNING!
RISK OF INJURY

- Replacing the Battery can only be operated by the manufacturer's personnel.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

AVERTISSEMENT!
RISQUE DE BLESSURE

- Le remplacement de la batterie ne doit être effectué que par le personnel du fabricant.

Le non - respect de ces instructions peut entraîner la mort, des blessures graves ou des dommages à l'équipement.

1.14.2 - OPERATION ENVIRONMENT

Is the ambient air temperature within the allowable range? Refer to Environmental Specifications. Are all power cords and cables connected properly? Are there any loose cables?

1.14.3 - CLEANING THIS PRODUCT

When this product gets dirty, wipe this product with a soft, dry cloth or a soft cloth soaked in only water and wrung tightly.

NOTE: When the product is very dirty, soak the soft cloth in water with a neutral detergent, wring the cloth tightly and wipe the product while avoiding the product label.

1.14.4 - UNIT DISPOSAL

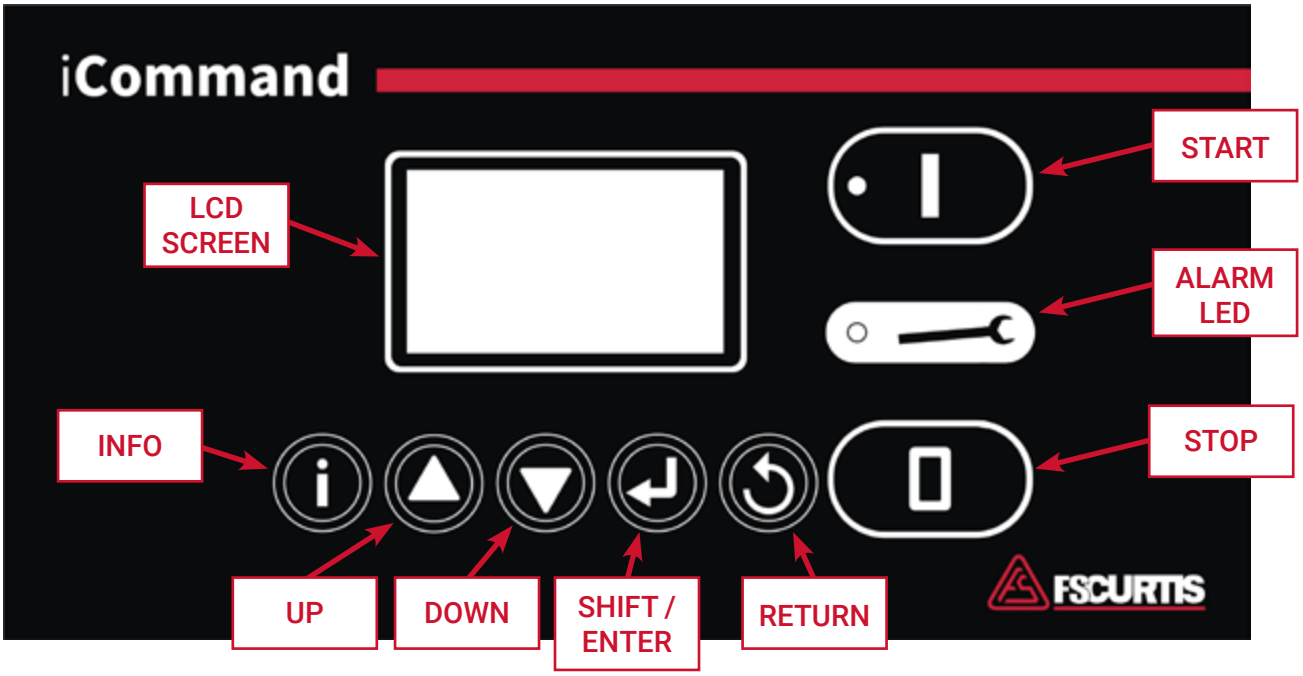
When disposing this product, dispose it in a manner appropriate to, and in accordance with, your country's industrial machinery disposal/recycling standards.

1.14.5 - AFTER-SALES SERVICE

For details on after-sales service. Please contact customer support.

02. USER PART

2.1 - OPERATION PANEL

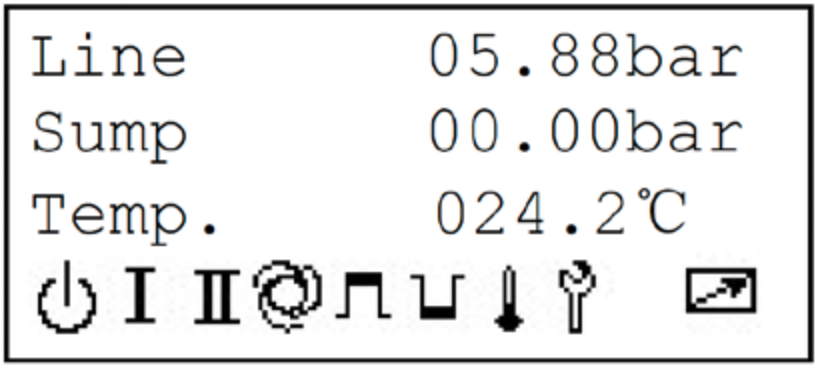


2.2 - DESCRIPTION OF THE INDIVIDUAL BUTTONS

Button	Function	Description
Start Button 	Turn the compressor on	The function depends on the operating mode, sump and line pressure.(Note: The compressor can not be started when the sump pressure is higher than the setting value of parameter “Sump press cut-in”) There are two operating modes to be selected. ***Automatic-operation:*** Once the cut-out pressure is reached, the system goes into idling mode for the duration of the "Idle time". The compressor shuts down after the "Idle time". As soon as the line pressure again falls below the cut-in pressure, the system restarts. ***Continuous-operation:*** The compressor switches between "Loaded" and "Idling" mode,i.e. it runs all the time. If the line pressure is lower than the cut-in pressure, the compressor switches to "Loaded" mode.
Stop Button 	Turn the compressor off	The compressor switches to idling mode from loaded mode and stop.

Return Button 	Return	Return to previous menu or cancel modification. Press Return key for at least 2 seconds to switch between "Loaded" and "Idling" mode forcedly.
Shift/Enter Button 	Enter into parameter selection	Shift cursor or enter into parameter selection. In the main screen, press and hold this key for 3 seconds to turn on / off the remote control mode.
Info Button 	Confirm parameter settings	By pressing the info key and the up key together, the parameter menu will be invoked. By pressing the info key and the down key together, the code menu can be invoked. After confirming parameter setting, press info key to save the setting.
Up Button 	Parameter and information selection	The up-key scrolls to the next information display, switches to the next menu or increases a parameter value.
Down Button 	Parameter and information selection	The down-key scrolls to the previous information display, switches to the previous menu or decreases a parameter value.
Running LED 	Operating status	The running LED signalizes that the compressor is operating or in stand-by mode.
Alarm LED 	Fault or warning information	A blinking red LED indicates a warning signal. A continuously lit red LED indicates a fault signal and the compressor has/will shut down.

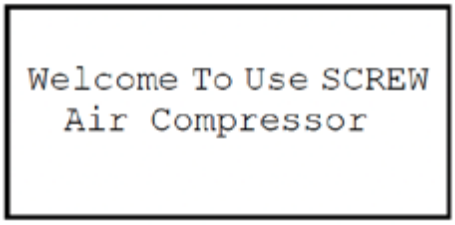
2.3 - DISPLAY



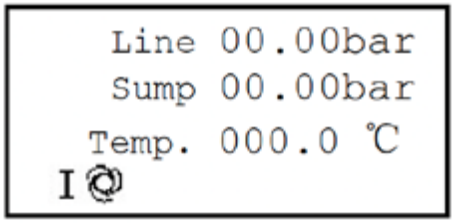
Display Symbol	Signification	Function
	Stand-By	Compressor is in stand-by mode.
	1st Band Pressure	This symbol appears when the 1st Band is active.
	2nd Band Pressure	This symbol appears when the 2nd Band is active.
	External Unload Or Load Switch	This symbol appears when the External Switch is active.
	Load Operation	Compressor is in loaded mode.
	Idle Operation	Compressor is in idling mode.
(5)	Count Down	The number between brackets shows a countdown timer. (E.g. the driver time between star and delta mode.)
	Air End	A lighting symbol signalized Continuous mode. A blinking symbol signalized Automatic mode.
	Service	This symbol appears when the service time arrives.

	Temperature	This symbol appears when temperature reaches upper/lower limit.
	Remote Start	Compressor start via digital input.

2.4 - OPERATING THE SCREW COMPRESSOR



After the power is on, the welcome screen is shown.

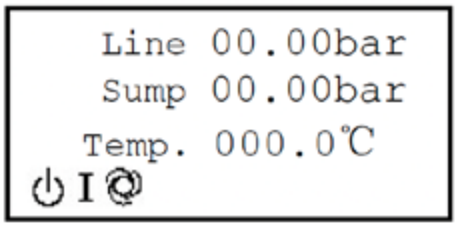


A short time after power-on, the main screen is displayed. The line pressure (behind pressure maintaining valve), the sump pressure and the air-end temperature will be displayed.

If the compressor is in automatic operation mode, the symbol will flash.

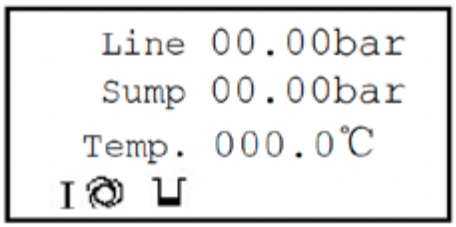
In continuous operation mode the symbol is on permanently.

The I and II symbol indicate the actual pressure band.

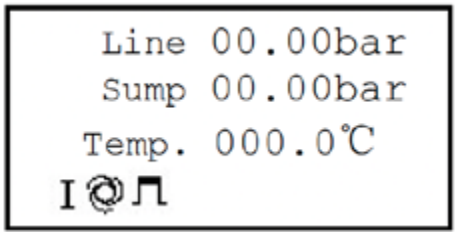


If the line pressure is higher than cut-out pressure, the compressor will stay in stand-by-mode when the start key is pressed. Stand-by-mode is indicated by the symbol .

If “Sump pres Sensor” is activated and the symbol flashes, which means the sump pressure is still too high, the compressor can’t start at once until the pressure is lower than the setting value of the parameter “Sump press cut-in”.

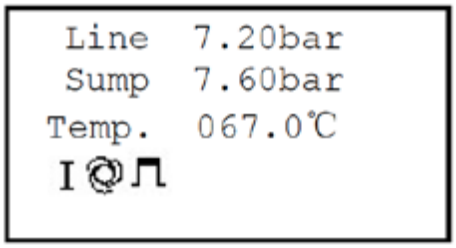


If the compressor is in idle-mode (the pressure is higher than the cut-out pressure or forced into idle operation after start-up) the symbol ⊔ is displayed.



If the line pressure is lower than the cut-in pressure the compressor switches to loaded mode, indicated by the symbol ⊓.

2.5 - DATA OVERVIEW

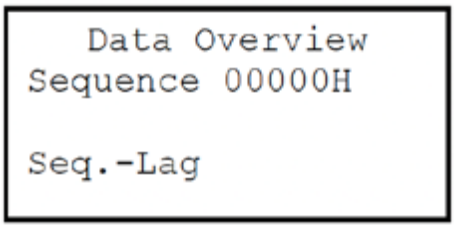


Main Screen

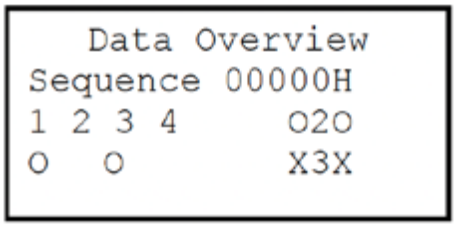
In the main screen display, pressing the down button ▼ the parameter display (Data overview) will show up. Following parameters are shown here:

- Sequence time
- Counter
- Time and date
- Fault and service
- History log
- Service interval remaining time.

Pressing the up button ▲ or down button ▼ to switch the previous or next parameter screen.



Communication Status Page



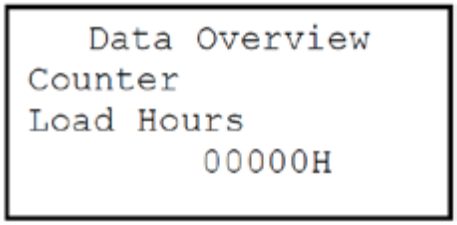
Sequence Signal Status

In the main screen, after pressing the down button for the first time, the first parameter screen is displayed where the interlock control is shown.

When the parameter “Remote Mode” is set “Lag” , the first state page will be displayed.

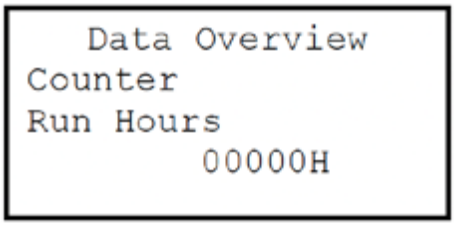
When the parameter “Remote Mode” is set “Lead” and this mode starts to work, the second type of state page will be displayed.

The number in the 3rd row is the interlock control machine number connected with this controller, the following O2O indicates the next to start is #2 machine. The 4th row " O " indicates the status of the machine above, " O " indicates the machine is in operation, no display indicates stopping, and the following X3X indicates the next to stop is the #3 machine.



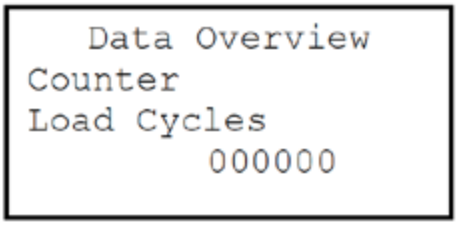
Load Operating Times

Pressing the down button again, will display the load hours.



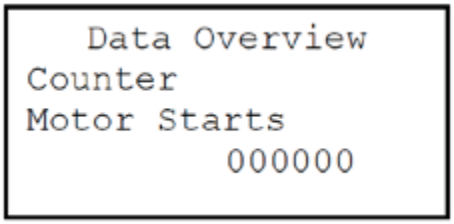
Total Operating Times

Pressing the down button again will display the total running hours (including the load and idle hours), stand-by times are not included.



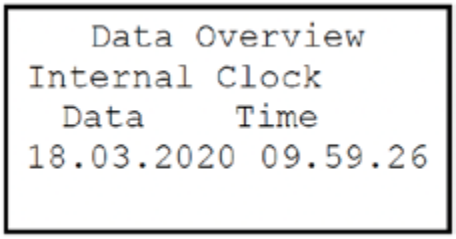
Number Off–Load Change Counter

Pressing the down button again will display the number off-load cycles. The counter indicates how many times the compressor has changed between load and idle operation.



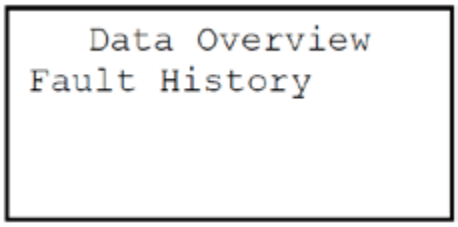
Number of Motor Starts

Pressing the down button again will display the number of motor starts.



Date / Time

Pressing the down button again will display the actual time and date.



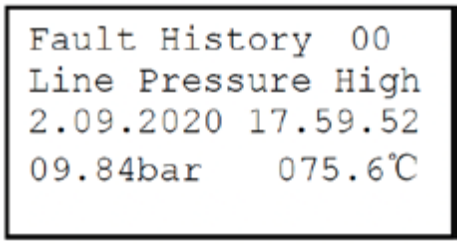
Error Record Main Page

Pressing the down button again will display the Error History log.

Press the shift button to view the "most recent" fault. “00” is always the "most recent" log. The arrow keys can be used to scroll through the 30 items of the fault history.

Press the shift button to view the related parameter status upon occurrence of the fault.

If no faults are logged, the display is ignored.

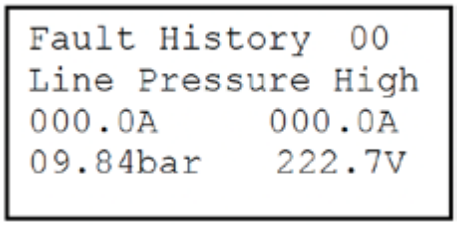


Error Record Subpage

Pressing the shift button will show the page shown below.

- The 1st line display fault history number.
- The 2nd line display fault content.
- The 3rd line display time and date.
- The 4th line display line pressure and Temperature.

Press the shift button may see more state of compressor upon occurrence of the fault.

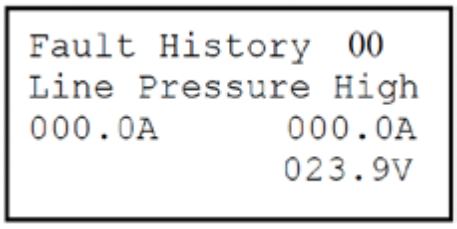


Subpage Appendix 1 Page

Pressing the shift button again on the previous page, shows the page below.

- The 1st line display fault history number.
- The 2nd line display fault content.
- The 3rd line display motor current.
- The 4th line display sump pressure and Bus Voltage.

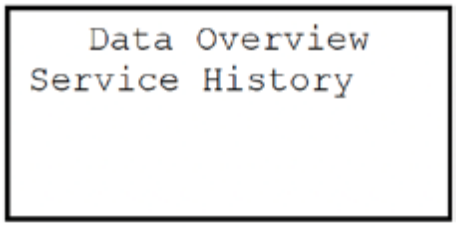
Pressing the shift button may see more state of compressor upon occurrence of the fault.



Subpage Appendix 2 Page

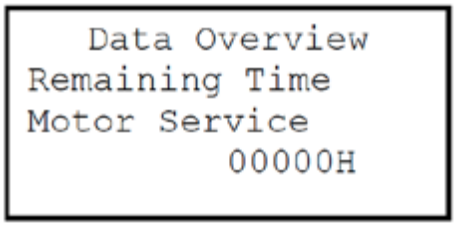
Pressing the shift button again on the previous page, the below page shows.

- The 1st line display fault history number.
- The 2nd line display fault content.
- The 3rd line display the fan current.
- The 4th line display the controller voltage.



In the Error record main page, pressing the down button again will display the service history log. The last 30 service history times are displayed.

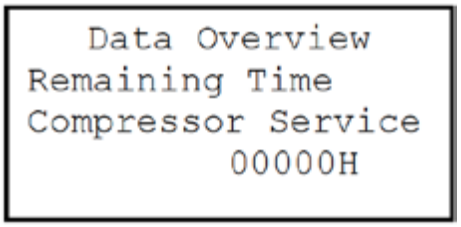
If no messages are logged, the display is ignored. “29” indicating the first log, “28” second log…“00” is always the "most recent" log.



Remaining Time of Motor Service

Pressing the down button ▼ again will display the remaining time until the next service. Firstly the remaining time of the next motor service is displayed. (unit: hour)

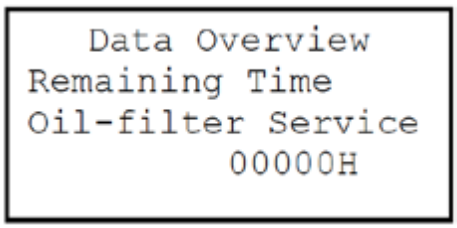
Note: If the parameter "Motor service" is set **OFF** in the Service Menu (user password permission cannot access this parameter), this display is hidden.



Remaining Time of Compressor Service

Pressing the down button ▼ again will display the remaining time of the next compressor service. (unit: hour)

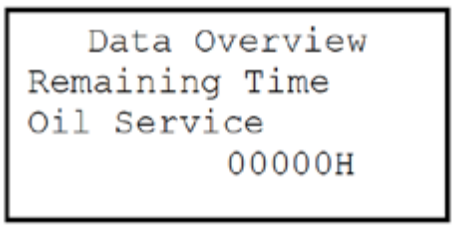
Note: If the parameter "Compressor service" is set **OFF** in the Service Menu (user password permission cannot access this parameter), this display is hidden.



Remaining Time of Oil-filter Service

Pressing the down button ▼ again will display the remaining time of the next oil-filter service. (unit: hour)

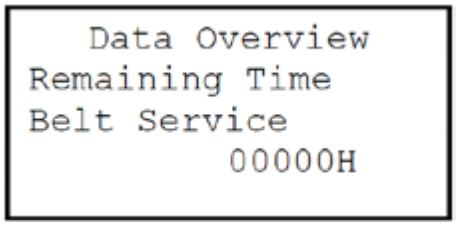
Note: If the parameter "Oil-filter service" is set **OFF** in the Service Menu (user password permission cannot access this parameter), this display is hidden.



Remaining Time of Oil Service

Pressing the down button ▼ again will display the remaining time of the next oil service. (unit: hour)

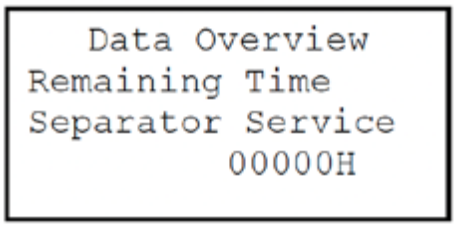
Note: If the parameter "Oil service" is set **OFF** in the Service Menu (user password permission cannot access this parameter), this display is hidden.



Remaining Time of Belt Service

Pressing the down button ▼ again will display the remaining time of the next belt service. (unit: hour)

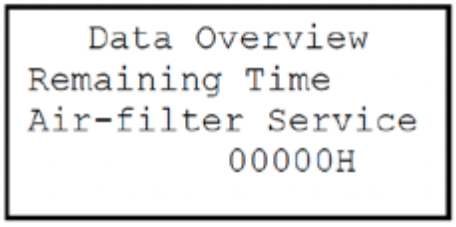
Note: If the parameter "Belt service" is set **OFF** in the Service Menu (user password permission cannot access this parameter), this display is hidden.



Remaining Time of Separator Service

Pressing the down button ▼ again will display the remaining time of the next separator service. (unit: hour)

Note: If the parameter "Separator service" is set **OFF** in the Service Menu (user password permission cannot access this parameter), this display is hidden.



Remaining Time of Air Filter Service

Pressing the down button ▼ again will display the remaining time of the next air-filter service. (unit: hour)

Note: If the parameter "Air-filter service" is set **OFF** in the Service Menu (user password permission cannot access this parameter), this display is hidden

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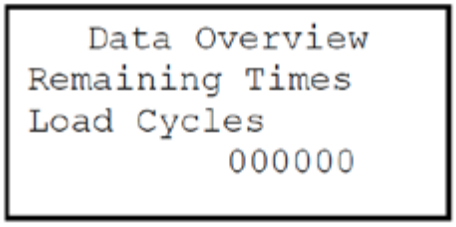
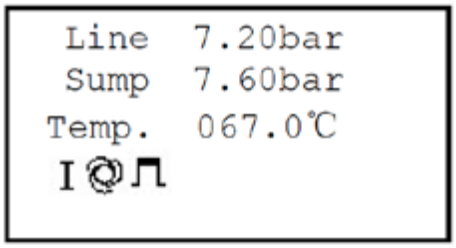


Remaining Times of Load-Idle Switch

Pressing the down button ▼ again will display the remaining times of load-idle switch.

Note: If the parameter "Cycle counter" is set **OFF** in the Service Menu (user password permission cannot access this parameter), this display is hidden.

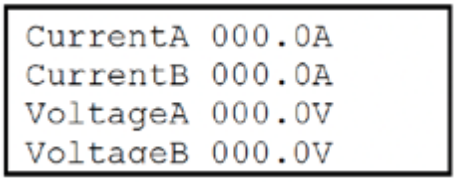
2.6 - QUERY INTERFACE



Main Screen

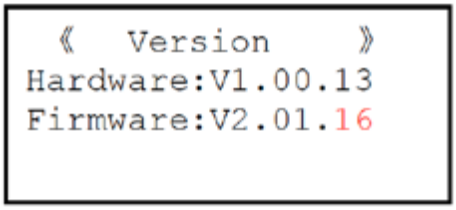
Pressing the up button , display as follows:

1. Voltage and current of motor.
2. Hardware and Firmware Version.
3. Real-time record of warning,error and maintenance.
4. Relevant status of the motor and fan. (Some parameters can be viewed after turning on the frequency function of the motor and fan. See the related parameter configuration in the Inverter Menu. User password permission cannot access this parameter menu.)



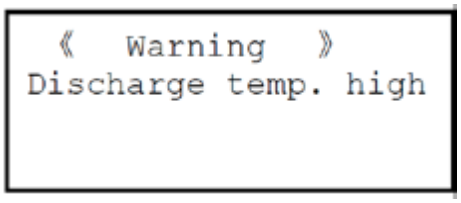
Motor Status

Pressing the up button for the first time will display the Current A, Current B, Phase A, and Phase B voltage.



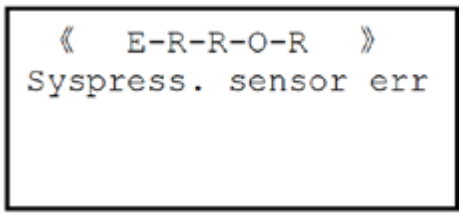
Hardware and Firmware Version

Pressing the up button again will display the version number of Controller hardware and firmware.



Warning Real-Time Record Page

Pressing the up button again will display warning real-time record page. Skip this screen when there is no warning.



Fault Real-Time Record Page

Pressing the up button again will display fault real-time record page. Skip this screen when there is no fault.

Communication Info 1

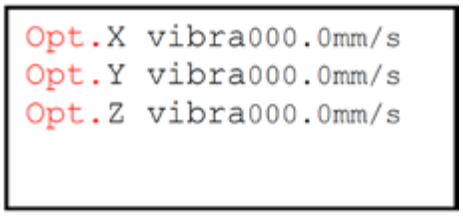
Pressing the up button again will display wireless communication information 1.

- IMEI: international mobile device identification code, commonly known as "mobile phone serial number".
- ICCD: integrated circuit card identification code, i.e. SIM card number.
- IP: IP address.

Pressing the up button again will display wireless communication information 2.

Communication Info 2

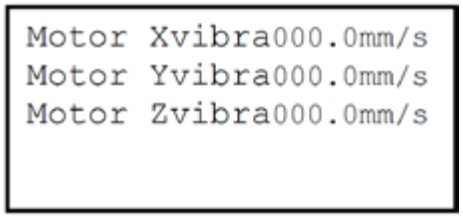
- STAG: Indicates the signal strength. [1-5 gradually stronger]
- STAT: The state starts from 1, then 2, 3, 4, 5, and finally cycle between 4-5.
    1. Wireless communication is normal.
    2. The SIM card is connected to the wireless base station normally.
    3. Enter the wireless data communication status, obtain the dynamic IP address.
    4. A connection has been established with the server and no data has been sent.
    5. Sending data.
- LONG: Longitude
- LATI: Latitude



Fan Vibration Status

Pressing the up button again will display the vibration value of the X / Y / Z direction of the **Opt.**.

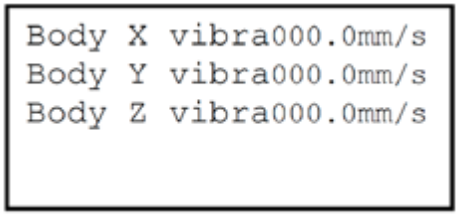
Note: If the parameter "**Opt.**vibration meter" is set **OFF**, the values and units will not be displayed.



Motor Vibration Status

Pressing the up button again will display the vibration value of the X / Y / Z direction of the Motor.

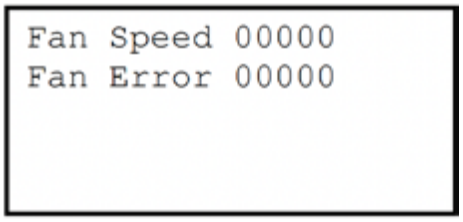
Note: If the parameter "Motor vibration meter" is set **OFF**, the values and units will not be displayed.



Body Vibration Status

Pressing the up button again will display the vibration value of the X / Y / Z direction of the Body.

Note: If the parameter "Body vibration meter" is set **OFF**, the values and units will not be displayed.

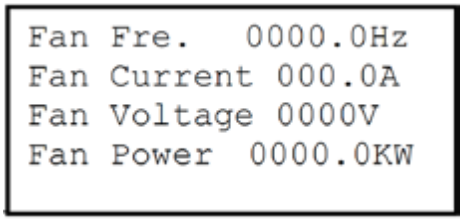


Fan Inverter Status 2

Pressing the up button again will display Fan speed and Fan Error. (Fan means the fan motor.)

Note:

1. If the parameter "Fan Inverter Control" is set **OFF** in the Inverter Menu, the number and the unit can't be shown here.
2. Relevant settings can be set in the Inverter Menu. User password permission cannot access this parameter menu.

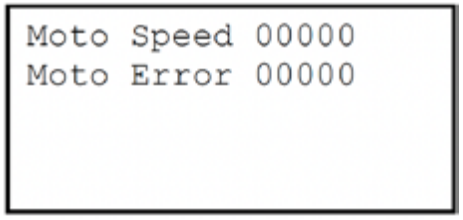


Fan Inverter Status 1

Pressing the up button again will display Fan Frequency, Fan Current, Fan Voltage, and Fan Power.

Note:

1. If the parameter "Fan Inverter Control" is set **OFF** in the Inverter Menu, the number and the unit can't be shown here.
2. Relevant settings can be set in the Inverter Menu. User password permission cannot access this parameter menu.

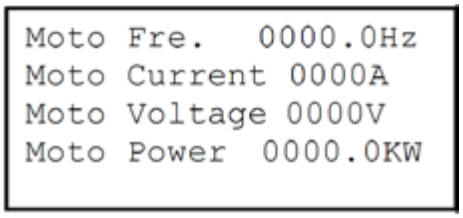


Motor Inverter Status 2

Pressing the up button again will display Motor speed and Motor Error. (Moto means the main motor.)

Note:

1. If the parameter "Motor Inverter Control" is set **OFF** in the Inverter Menu, the number and the unit can't be shown here.
2. Relevant settings can be set in the Inverter Menu. User password permission cannot access this parameter menu.

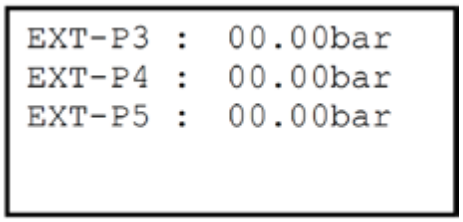


Motor Inverter Status 1

Pressing the up button again will display Motor Frequency, Motor Current, Motor Voltage and Motor Power. (Moto means the main motor.)

Note:

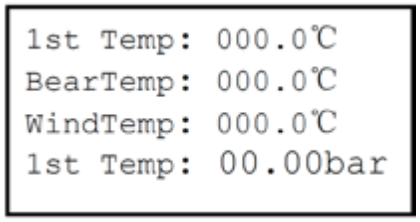
1. If the parameter "Motor Inverter Control" is set **OFF** in the Inverter Menu, the number and the unit can't be shown here.
2. Relevant settings can be set in the Inverter Menu. User password permission cannot access this parameter menu.



Ext. Module Pressure Temperature 3

Pressing the up button again will display the EXT-P3, EXT-P4, EXT-P5 values.

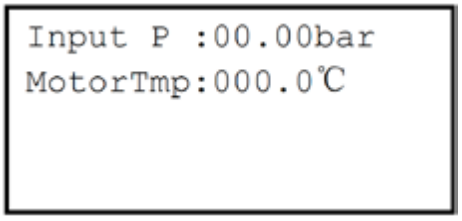
Note: Display this screen only when the parameter "EXT MODULE TYPE3" is set **ON**. User password permission cannot access this parameter.



Ext. Module Pressure Temperature 2

Pressing the up button again will display the 1st temperature, bearing temperature, winding temperature, and 1st pressure value.

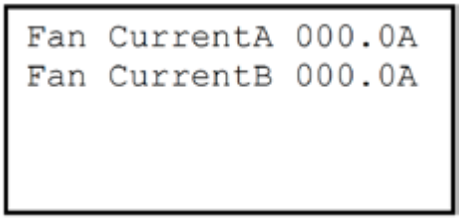
Note: Display this screen only when the parameter "EXT MODULE TYPE3" is set **ON**. User password permission cannot access this parameter.



Ext. Module Pressure Temperature 1

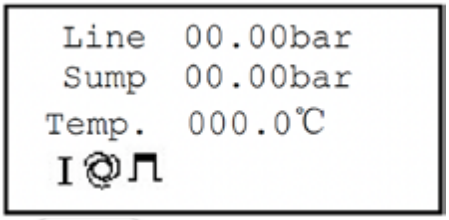
Pressing the up button again will display the values of intake pressure, motor temperature, etc.

Note: Display this screen only when the parameter "EXT MODULE TYPE3" is set **ON**. User password permission cannot access this parameter.



Pressing the up button again to view fan current phase A, fan current phase B.

2.7 - WARNING AND FAULT MESSAGES

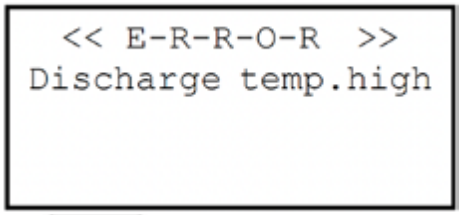


Red Message LED

The flashing red LED indicates a warning signal.

The main screen is still displayed and the compressor is still in operation.

To see the warning message, press the up button and scroll to the warning history.



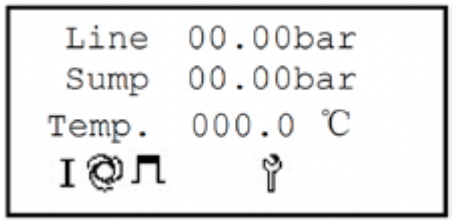
Red Message LED

Permanent red LED indicates a system fault and fault message is displayed on the screen. The compressor shuts down immediately.

If more than one error occurred simultaneously, it is possible to switch between the messages with the arrow keys.

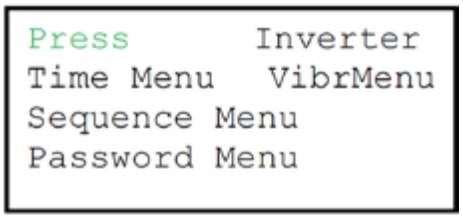
After acknowledging the fault message and pressing the return button , the message disappears, but still can be shown in the info display by pressing the up key and scrolling to the fault history.

If a warning and fault occurs at the same time, the fault message is displayed.



The symbol in the main screen indicates a service message. The type of service message is shown in the information display and the compressor is still in operation.

2.8 - USER PARAMETERS QUERY

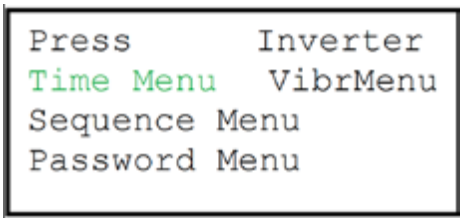


Pressure Menu

Controller User Parameters Query Page can be invoked in the main screen by pressing the info button and the up button at the same time.

The Pressure menu option is in flashing after entering, pressing the shift button at this time to enter the menu and check pressure parameters.

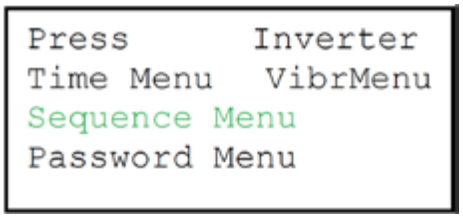
After viewing, press the return button to return to the Controller User Parameters Query Page.



Time Menu

Pressing the down button will switch to the Time Menu option and it's also in flashing.

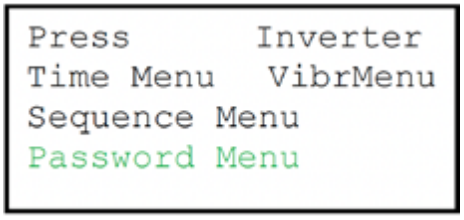
At this time, pressing the shift button to enter the Time Menu and check time and date parameters.



Sequence Control

Pressing the down button will switch to the Time Menu option and it's also in flashing.

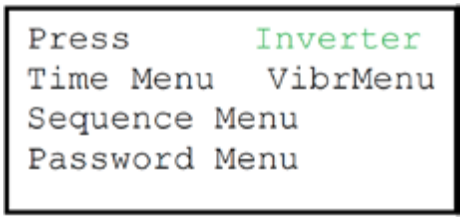
At this time, pressing the shift button to enter the Time Menu and check time and date parameters.



Password Menu

Pressing the down button will switch to Password Menu option and it's in flashing.

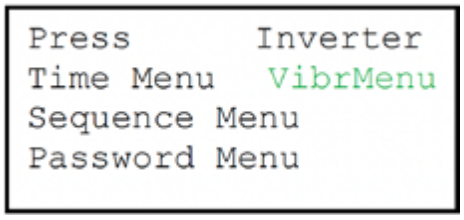
At this time, you can view the user password by pressing the shift button to enter the password menu.



Inverter

Pressing the down button will switch to Password Menu option and it's in flashing.

At this time, you can view the user password by pressing the shift button to enter the password menu.

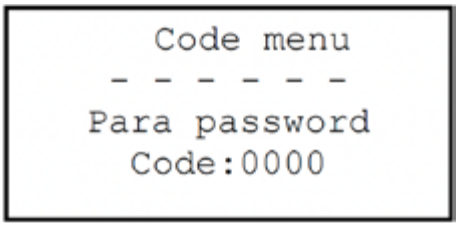


Vibr Menu

Pressing the down button will switch to the Vibr Menu option and its in flashing.

At this time, pressing the shift button to enter the menu and check the related parameters.

2.9 - CODE INPUT (PARAMETER PASSWORD)



Parameter Password

In the main screen,pressing the info button and the down button at the same time, the Code menu will be displayed.

Press the down button or the up button to switch between the parameter password page (default) and the code page.

Press the return button to return to the main screen.

Code input steps:
Press the shift button repeatedly to select the value to be modified, flashing on the screen.

Press the up button to increase value.

Press the down button to decrease value.

After the correct value is displayed, press the shift button to save the value. The flashing number will automatically jump to the next number. Continue to use the up button or the down button to get the desired value.

After the parameter password input is completed, pressing the info button ⓘ to switch to the corresponding password parameter menu.

When the additional code input is completed, pressing the info button ⓘ to activate the corresponding additional function, see the description of "Additional Code List" below for details.

Additional Code List	
0101	Switch to English screen
0102	Switch to Traditional Chinese screen
0103	Switch to Simplified Chinese screen
0104	Switch to Portuguese screen
0105	Switch to Spanish screen
0201	Clear error history messages
0202	Clear service history messages
0301	Clear warning and service message on the operation panel (After troubleshooting, enter this code to switch off the ALARM LED on the operation panel)
0302	Clear error message on the operation panel (After troubleshooting, enter this code to switch off the ALARM LED on the operation panel)

Password List	
User password (default)	1111

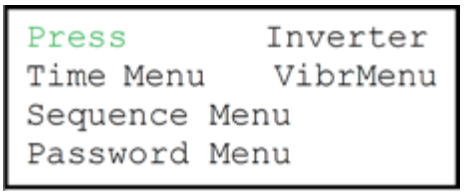
2.10 - USER PARAMETER MODIFICATION

The user password must be entered before the parameters can be changed. Input the correct user password in the "Code menu" screen, then enter the user parameter menu to modify the user parameters, see also "User parameters details".

After entering the parameter menu option, first press the shift button, the parameter value will lash. At this time, press the up button and down to edit the value, press the info button to save, press the return button to reject the new value and the original parameter value will be displayed on the screen. Press the return button to exit.

The units for pressure and temperature have been set before selling. The pressure unit can be set as bar, psi or MPa via the parameter “Pressure Unit ”.

2.10.1 - USER PARAMETER MENU

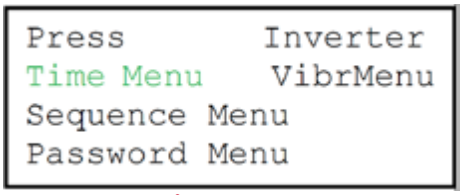


Pressure Menu

Entering the user password in the code menu, Pressing the info button to enter user parameter menu.

The Pressure menu option is flashing after entering.

At this time by pressing the shift button to enter the Pressure menu option to modify related parameters. Press the return button to exit.



Time Menu

Pressing the down button will switch to the Time menu option which is flashing.

At this time by pressing the shift button to enter the Time menu option to modify time and date.

Press the return button to exit.

Sequence Menu

Pressing the down button will switch to the Sequence Control option which is flashing.

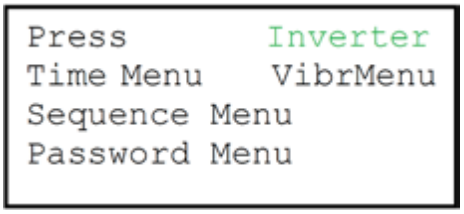
At this time by pressing the shift button to enter the Sequence Control option to modify related parameters.

Press the return button to exit.

Password Menu

Press the down button and switch to the Password Menu option which is flashing.

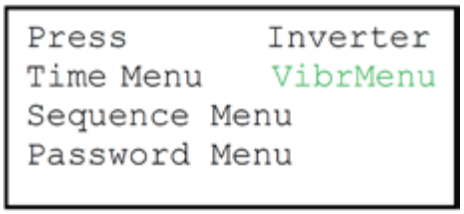
At this time, you can enter the password menu to set the user password by pressing the shift button .



Inverter

Press the down button to switch to the Inverter option which is flashing.

At this time, pressing the shift button to enter the Inverter option to set the inverter pressure value.



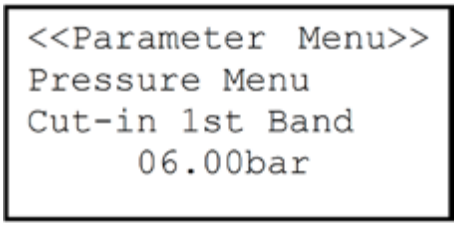
Vibr Menu

Press the down button to switch to the Vibr Menu option which is flashing.

At this time, pressing the shift button to enter the Vibr Menu option to set the related parameters.

2.11 - USER PARAMETER DETAILS

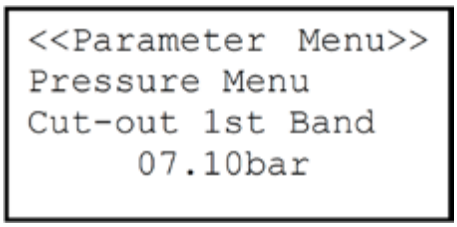
2.11.1 - PRESSURE MENU



Parameter 1

Cut-in pressure of the 1st pressure range.

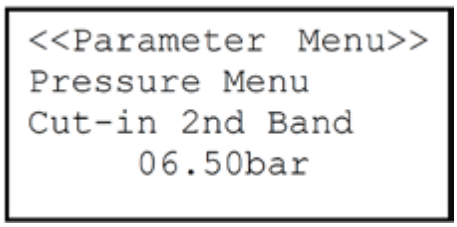
Setting range: (1.0 ~ Cut-out 1st Band - 0.5)



Parameter 2

Cut-out pressure of the 1st pressure range.

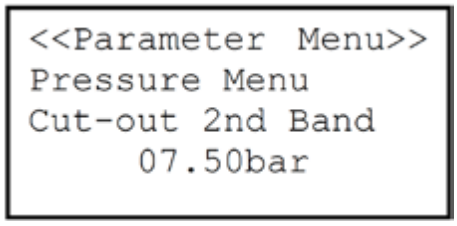
Setting range: (Cut-in 1st Band + 0.5 ~ Max Pressure-0.5)



Parameter 3

Cut-in pressure of the 2nd pressure range.

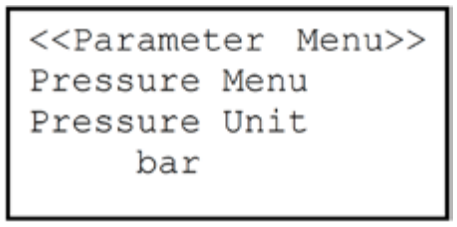
Setting range: (1.0 ~ Cut-out 2nd Band – 0.5)



Parameter 4

Cut-out pressure of the 2nd pressure range.

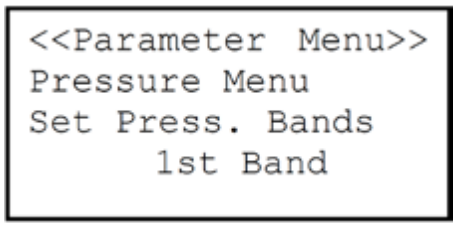
Setting range: (Cut-in 2nd Band + 0.5 ~ Max Pressure - 0.5)



Parameter 5

The unit for the pressure values.

Setting range: (bar, psi, MPa).

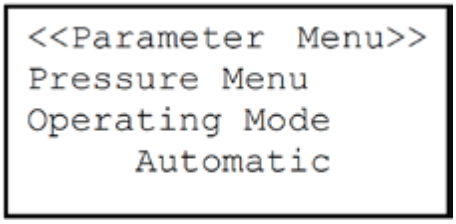


Parameter 6

Pressure range selection.

Setting range: (1st Band, 2nd Band, External Switch)

If the 1st Band is active, the symbol Ⅰ is displayed on the screen; if the 2nd Band range is active, the symbol Ⅱ is displayed on the screen; if the External Switch is active, the symbol Ⅲ is displayed on the screen.

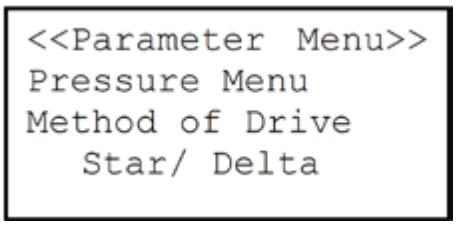


Parameter 7

The operating mode can be changed here.

Manual = Continuous-operation mode (compressor does not shut down after "Idle time").

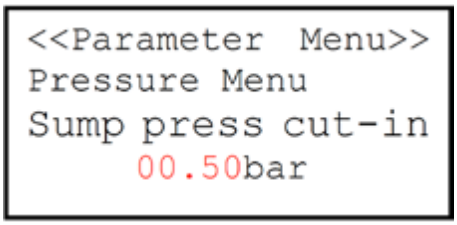
Automatic = Automatic-operation mode (In idle mode, compressor shuts down after "Idle time").



Parameter 8

This parameter defines the method of drive.

Star/Delta, Direct = (Direct start), Inverter, Pulse.



Parameter 9

This parameter defines the sump pressure protection value. The compressor cannot be started when the sump pressure is higher than the setting value.

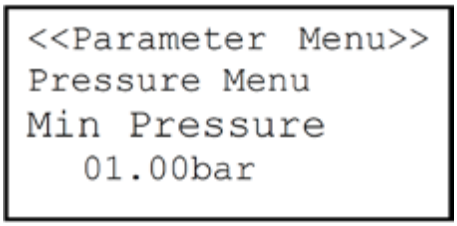
Setting range: (0.30~12 bar).

Parameter 10

This parameter defines the high pressure protection value.

If the pressure exceeds the setting value, the compressor will shut down.

Setting range: (1~Pressure Sensor Range-0.5).

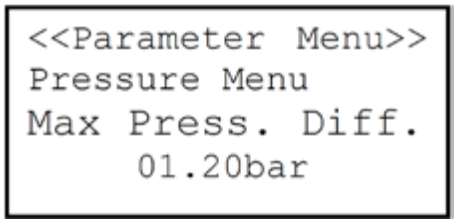


Parameter 11

This parameter defines a sump pressure minimum limit.

If the sump pressure has not reached the setting value within the "Min Press Delay" time after the compressor starts, the compressor will shut down.

Setting range: (0.5~4 bar).

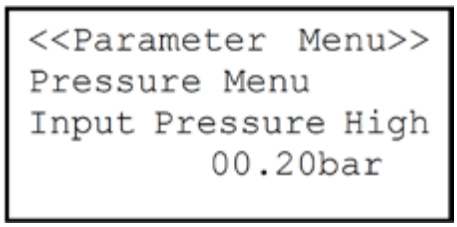


Parameter 12

This parameter defines the maximum allowable difference pressure between sump pressure and line pressure (Monitoring of separator element ΔP).

Setting range: (0.5~2.5 bar)

Note: The parameter “Max DP Dlay” sets the difference delay time.

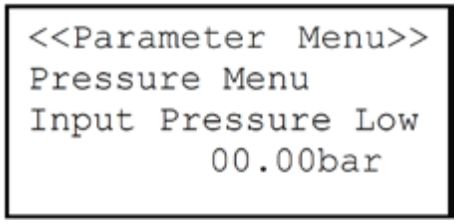


Parameter 13

This parameter defines the upper limit of the intake pressure.

Setting range: (0.1~1.0 bar).

Note:This parameter page setting is displayed when the parameter “EXT MODULE TYPE3” is set "ON"(User password can not access it).

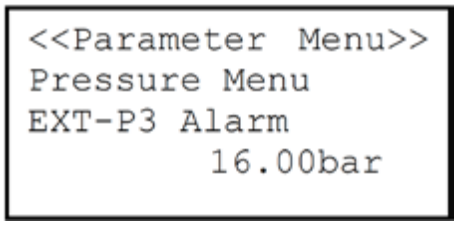


Parameter 14

This parameter defines the lower limit of the intake pressure.

Setting range: (-1.0~0.0 bar).

Note: This parameter page setting is displayed when the parameter “EXT MODULE TYPE3” is set "ON"(User password can not access it).

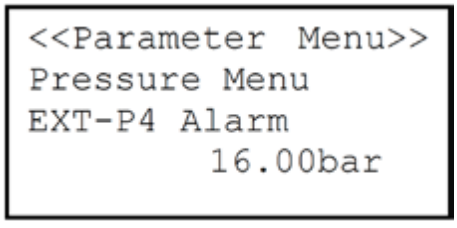


Parameter 15

This parameter defines the EXT-P3 protection value.

Setting range: (1.0~16.0 bar).

Note: This parameter page setting is displayed after the parameter “EXT MODULE TYPE3” is set "ON" (User password can not access it).

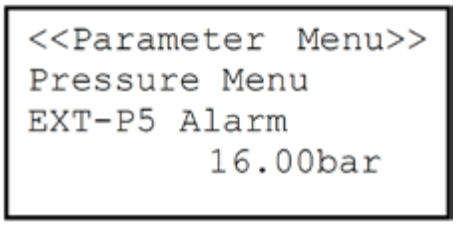


Parameter 16

This parameter defines the EXT-P4 protection value.

Setting range: (1.0~16.0 bar).

This parameter page setting is displayed when the parameter “EXT MODULE TYPE3” is set "ON" (User password can not access it).



Parameter 17

This parameter defines the EXT-P5 protection value.

Setting range: (1.0~16.0 bar).

This parameter page setting is displayed when the parameter “EXT MODULE TYPE3” is set "ON"(User password can not access it).

DUAL PRESSURE RANGE INTERLOCK CONTROL INSTRUCTIONS

The air compressors operate independently of each other, and there is no need to connect each other by wires. In order to switch the main and auxiliary machines to switch continuously, the two air compressors must be set to different pressure ranges, and the interlock control program should be set by manual or cycle operation parameters. For example, if the air compressor A is set as the leader, the air compressor B is the lag machine, and vice versa.

For example

Air compressor A: (pressure range 1 = 6.5-7.0 bar; pressure range 2 = 6.0-6.5 bar)

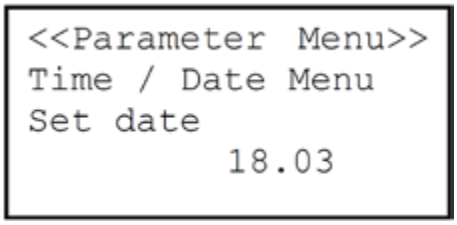
Monday > Pressure Range 1
Tuesday > Pressure Range 2
Wednesday > Pressure Range 1

Air compressor B: (pressure range 1 = 6.5-7.0 bar; pressure range 2 = 6.0-6.5 bar)

Monday > Pressure Range 2
Tuesday > Pressure Range 1
Wednesday > Pressure Range 2

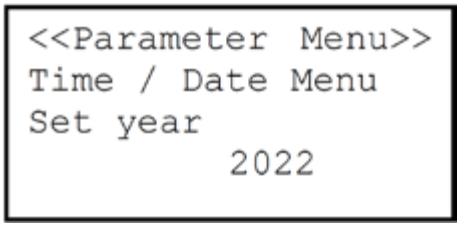
In the above example, the pressure range 2 is defined as the joint control unit because of setting a lower pressure range.

2.11.2 - TIME/DATE MENU



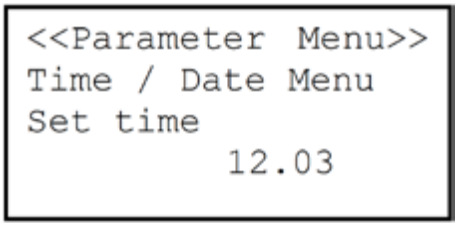
Parameter 1

Set the current date. The day (left) and the month (right).



Parameter 2

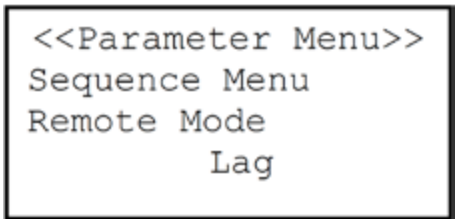
Set the current year.



Parameter 3

Set the current time. The hour (left) and the minute (right).

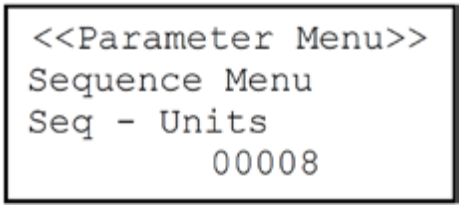
2.11.3 - SEQUENCE MENU



Parameter 1

This parameter defines the controller run as Lag or Lead mode via RS485-Bus.

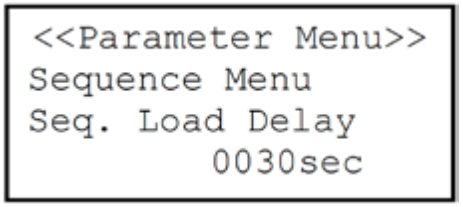
This parameter is available for port 1.



Parameter 2

This parameter sets the number of joint controls. It was only available when the parameter “Remote Mode” is set "Lead".

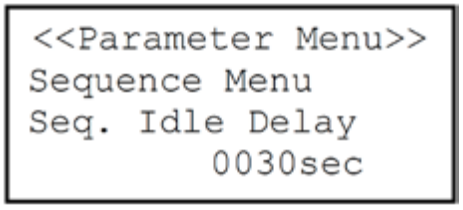
Setting range: (1~8)



Parameter 3

Set sequence control load delay.

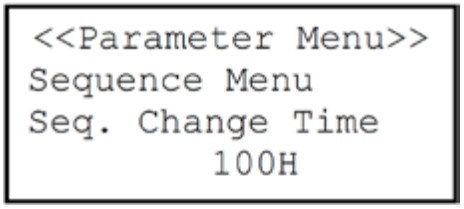
Setting range: (1~120 sec)



Parameter 4

Set sequence control idle delay.

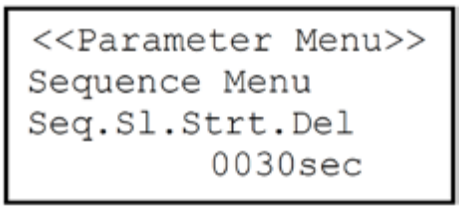
Setting range: (1~120 sec)



Parameter 5

Set the operating interval changing from one compressor to another via auto-sequencing method.

Setting range: (0~600 hour)



Parameter 6

Set sequence control start interval.

Setting range: (1~120 sec)

2.12 - CONTROLLER BROADCAST MODE

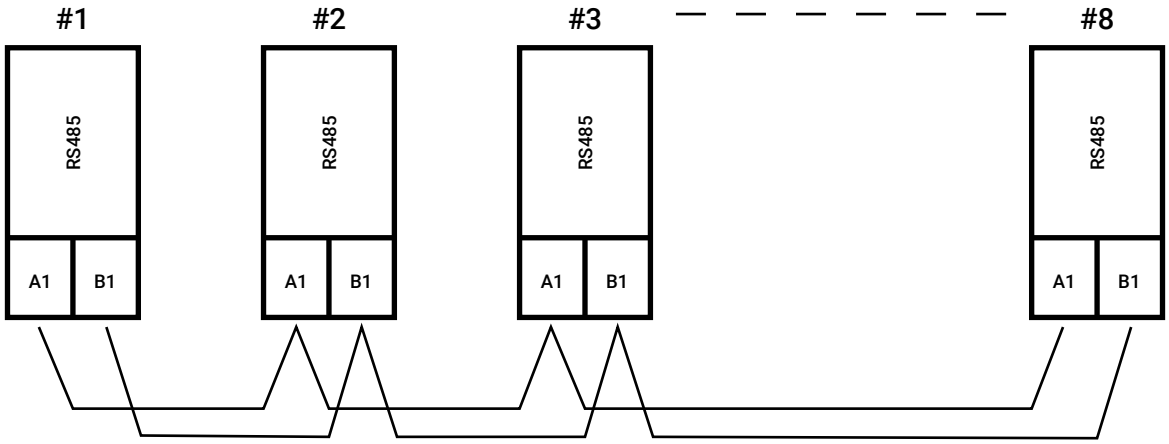
2.12.1 - SELF INTERLOCK CONTROL OVERVIEW

Air Compressor self interlock control method, from 1~8 set(Up to 8 set)air compressor connection form of a bus, through the RS485 communication port and connect the control network, all machines to the network in order to send and receive messages, and process the messages, make every machine work status and other operating parameters the information publicly available on the network. Any one machines operating on a network, all working condition of the entire network can be monitored. A machine can easily join and exit control network, and don't affect the work of other machines on the network. Self interlock control network advantage is simple and reliable , the connection easy and low cost. Control methods to stabilize the pressure, satisfy the balance work between all air compressor, make multiple machines operation in stable balance working state, keep the pipeline pressure between the upper and lower limits in the set pressure of the pipeline, improve the working efficiency and lifetime of the machines.

2.12.2 - CONNECTION METHOD

Will need to be interlock controlled of the first air compressor controller communication port, with two cores shield twisted pair wire connect, ex: A1, B1. According to the situation as far as machines of parallel terminal resistor 330Ω (Don't necessarily need).

Note: Internal control limit 8 set



2.12.3 - PARAMETER SETTING:

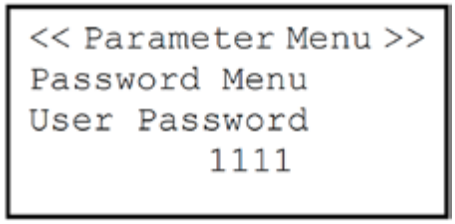
- According to the actual situation will air compressor individual number (PORT1),will machine number input controllers, in the interlock control can only be set to 1-8, refer to the Remote control menu " PORT1 RS458 Address".
- Remote Mode setting: "Lead" method, refer to the Hardware Menu " Remote mode".
- Sequence start time setting : when pressure is low, the all machine set in accordance with the order of start (or load) time intervals.
- Sequence unload time setting : when high pressure all machine set in accordance with the order of unload time intervals.
- Sequence change time: When stable for a long time operation, operation the rotation of machine set and spare set operation time interval, the initial default value is setting to 100 hours.
- The interlock control operation time is defined as, after the switch machine set to the remote control mode of operation time. The time automatic zero resetting is powered down, or exit the network. In the time included in the broadcast message.
- Selection of control pressure with the highest exhaust pressure in interlock control machine set as standard, require all machine set to load /unload pressure must be setting to the same.

2.12.4 - OPERATION STEPS AND OPERATING CONDITION:

- That will be ready for interlock control of air compressor set to "remote control", communication mode is set to " Lead" and in accordance with the sequential number of the machine set (Range:1~8), no duplicates.
- Press the start button of any air compressor, started immediately.
- When controlled pressure (highest discharge pressure in the entire machine set for pipe network pressure) still less than loading pressure +0.02MPa, then interlocking operation time shortest machine set first start; If the control operation the same time, to start in the minimum number of machine set. First machine set started after the "Seq. Sl. Strt. Del" delayed start,and so on.
- When controlled pressure greater than the unload pressure -0.02mpa, the longest operation in interlocking control machine set priority unload; If operation the same time, to follow the largest number to unload.
- In interlocking control system of pipe network pressure adjustment range is native of unload pressure
- -0.02 mpa ~ native of load pressure +0.02 mpa, when pipe network pressure be in this range, operation status of the machine set unchanged, when outside this range adjust the machine set.
- When the user's air consumption for stability, there is no switching machine set for a long time, for the balance the interlock control system of the air compressor operation time, when the largest interlock control of operating time and minimum interlock control of operating time difference greater than "Seq. Change Time", and interlock control operating time the smallest machine set, when the state was in stop, will be smallest interlock control operating time machine set to join the operating.
- When press the stop button of any machine set, this air compressor immediately unload and shut down. And then the all machine set in accordance with the order shut down, until all air compressor stopped operating.
- If the machine set malfunction or in the single control state, the network will ignore this machine set and

will not affect the operation of the other machine set. Make control system with good shielding failure of the machine set features. In addition, if the communication cable fracture occurred, the whole network is divided into two unrelated Child Network. For the whole network machine set operation should not have a big impact. Even if only one machine set, should still be able to stable operation.

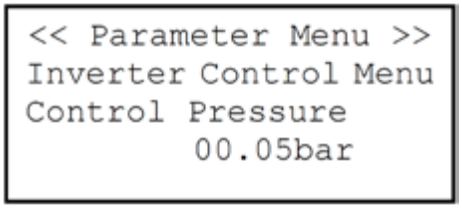
2.13 - PASSWORD MENU



Parameter 1

Set user password.

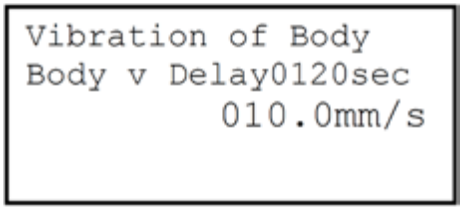
2.14 - INVERTER MENU



Parameter 1

Set user password.

2.15 - VIBR MENU



Parameter 1

Set the warning delay time.

Setting range: (Off ~ 180sec)
Default: 120

Set vibration warning value.
Setting range: (5.0 ~ 30.0mm/s)
Default: 10

When the vibration value of the axial / horizontal / vertical direction of the body reaches the setting vibration warning value for at least the setting delay time, the controller will give a warning of "vibration of Body".

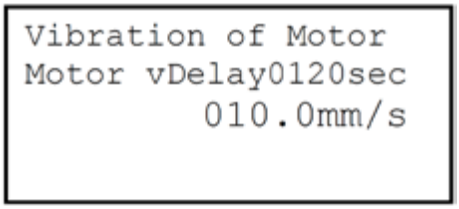
Set the warning delay time.

Setting range: (Off ~ 180sec)
Default: 120

Set vibration warning value.

Setting range: (5.0 ~ 30.0mm/s)
Default: 10

When the vibration value of the axial / horizontal / vertical direction of the motor reaches the setting vibration warning value for at least the setting delay time, the controller will give a warning of "vibration of Motor".



Parameter 2

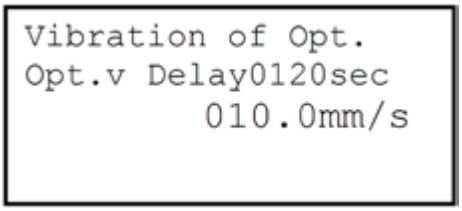
Set the warning delay time.

Setting range: (Off ~ 180sec)
Default: 120

Set vibration warning value.

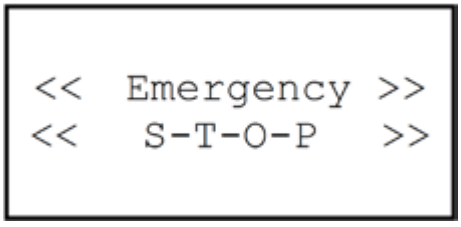
Setting range: (5.0 ~ 30.0mm/s)
Default: 10

When the vibration value of the axial / horizontal / vertical direction of the Opt. reaches the setting vibration warning value for at least the setting delay time, the controller will give a warning of "vibration of Opt.".



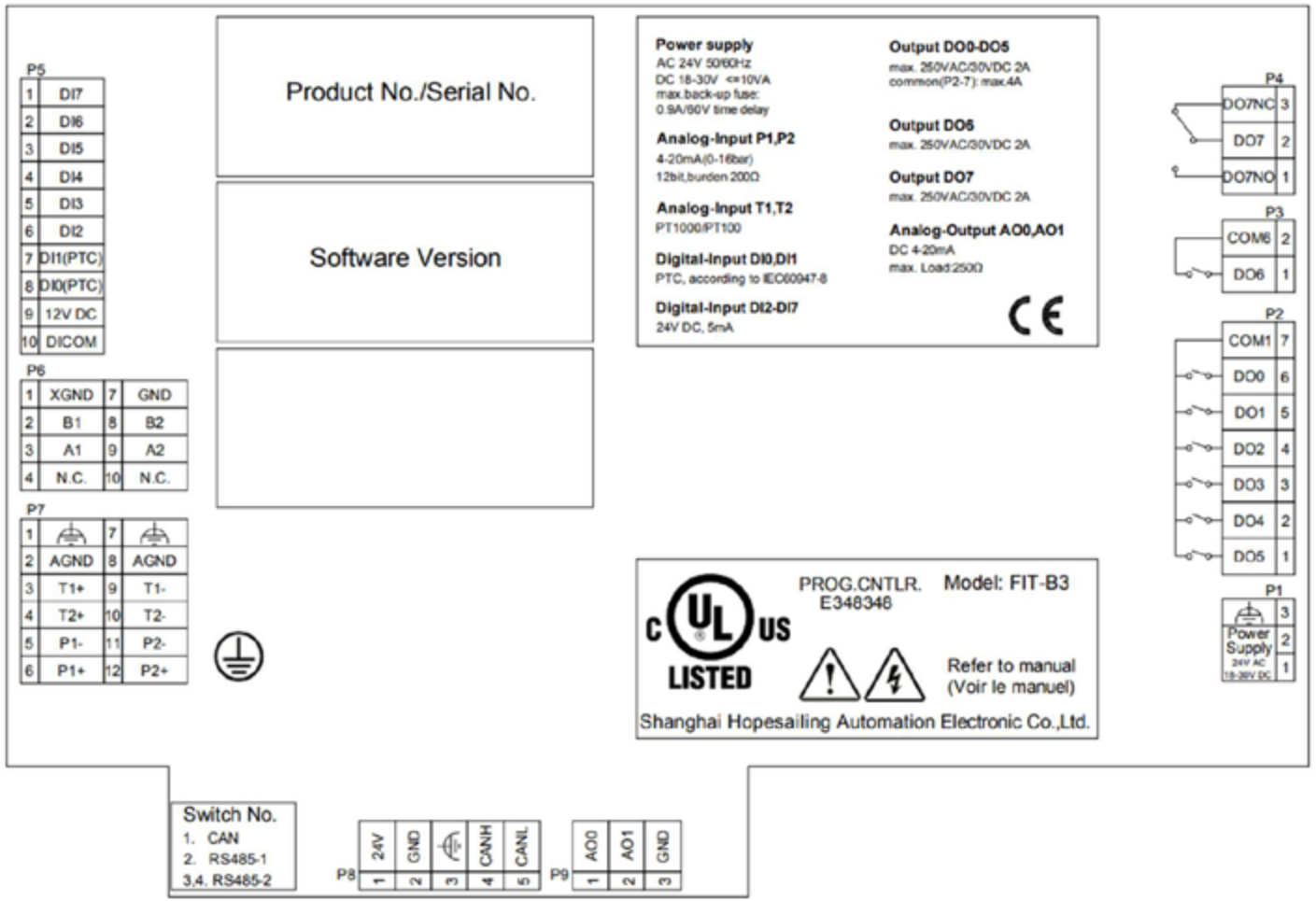
Parameter 3

2.16 - EMERGENCY STOP



If Emergency Stop is activated, the display shows “Emergency stop” and the compressor stopped immediately. The compressor can’t be started now. After release (pull Emergency Stop switch), the controller switches to the normal operating mode.

2.17 - TERMINAL ASSIGNMENT



2.17.1 - P1 TERMINAL ASSIGNMENT

Pin	Designation	Function
1	24V AC / 18-30V DC	Control supply system
2	0V AC / 0V DC	
3		Functional earth (EMC)

2.17.2 - P2 TERMINAL ASSIGNMENT

Pin	Designation	Function
1	DO5	Relay output 5
2	DO4	Relay output 4
3	DO3	Relay output 3
4	DO2	Relay output 2
5	DO1	Relay output 1
6	DO0	Relay output 0
7	COM1	Relay output0-5 COM

2.17.3 - P3 TERMINAL ASSIGNMENT

Pin	Designation	Function
1	DO6	Relay output 6
2	COM6	Relay output6 COM

2.17.4 - P4 TERMINAL ASSIGNMENT

Pin	Designation	Function
1	DO7 NO	Relay output 7 Normally open contact
2	DO7	Relay output 7 Common
3	DO7 NC	Relay output 7 Normally closed contact

2.17.5 - P5 TERMINAL ASSIGNMENT

Pin	Designation	Function
1	DI7	Digital Input 7
2	DI6	Digital Input 6
3	DI5	Digital Input 5
4	DI4	Digital Input 4
5	DI3	Digital Input 3
6	DI2	Digital Input 2
7	DI1 (PTC)	Digital Input 1
8	DI0 (PTC)	Digital Input 0
9	12V DC	12V DC (PTC)
10	DICOM	Com for Digital Input

2.17.6 - P6 TERMINAL ASSIGNMENT

Pin	Designation	Function
1	XGND	
2	B1	RS-485 B (-)
3	A1	RS-485 A (+)
4	N.C.	Not used
7	GND	
8	B2	RS-485 B (-)
9	A2	RS-485 A (+)
10	N.C.	Not used

2.17.7 - P7 TERMINAL ASSIGNMENT

Pin	Designation	Function
1		Functional earth
2	AGND	Ground for PT100/PT1000 inputs (T1G/T2G)
3	Analogue input T1+	PT100/PT1000 input 1+ (T1+)
4	Analogue input T2+	PT100/PT1000 input 2+ (T2+)
5	Analogue input P1-	Analog input 4 – 20 mA (P1-)
6	P1+	24V DC (P1+)
7		Functional earth
8	AGND	Ground for PT100/PT1000 inputs (T1G/T2G)
9	T1-	PT100 input 1- (T1-)
10	T2-	PT100 input 2- (T2-)
11	P2-	Analog input 4–20 mA (reserved pressure)
12	P2+	24V DC (P2+)

2.17.8 - P8 TERMINAL ASSIGNMENT

Pin	Designation	Function
1	24V	24V DC
2	GND	0V DC
3		Functional earth
4	CANH	Can communication (H)
5	CANL	Can communication (L)

2.17.9 - P9 TERMINAL ASSIGNMENT

Pin	Designation	Function
1	AO0	Analogue output 0
2	AO1	Analogue output 1
3	GND	Analogue output COM

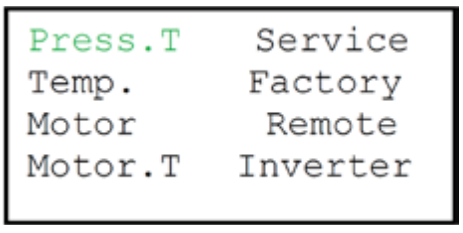
03. ADVANCED PART

There are four different passwords in the system (User/Service/Factory/Voltage), they have different parameter modification authority. In the "Code menu" screen, enter service or factory password to modify the parameters of the corresponding authority.

Additional Code List	
0101	Switch to English screen
0102	Switch to Traditional Chinese screen
0103	Switch to Simplified Chinese screen
0104	Switch to Portuguese screen
0105	Switch to Spanish screen
0201	Clear fault history messages
0202	Clear alarm history messages
0301	Clear alarm and service message on the operation panel (After troubleshooting, enter this code to switch off the ALARM LED on the operation panel)
0302	Clear fault message on the operation panel (After troubleshooting, enter this code to switch off the ALARM LED on the operation panel)
0541	All parameters are restored to the factory defaults

Password List	
User password (default)	1111

3.1 - FACTORY PARAMETERS QUERY

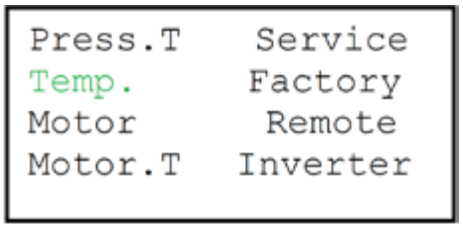


Press.T

In the Controller User Parameters Query Page, pressing the info button to enter factory parameter menu.

The Press.T menu option is flashing after entering. At this time, pressing the shift button to enter the Press.T option to view the pressure related parameters.

Press the return button to exit.

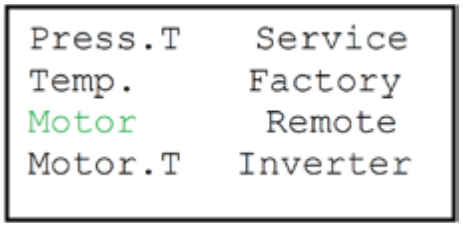


Temp.

Pressing the down button will switch to the Temp. option which is flashing.

At this time, pressing the shift button to enter the temperature menu option to view the temperature related parameter.

Press the return button to exit.

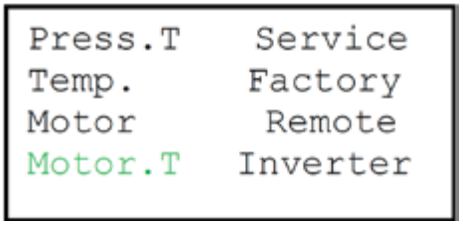


Motor

Pressing the down button will switch to the Motor menu option which is flashing.

At this time, pressing the shift button to enter the Motor option to view the motor related parameters.

Press the return button to exit.

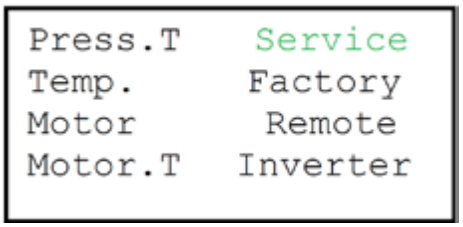


Motor T.

Pressing the down button will switch to the Motor.T menu option which is flashing.

At this time, pressing the shift button to enter the Motor.T option to view the motor time related parameters.

Press the return button to exit.

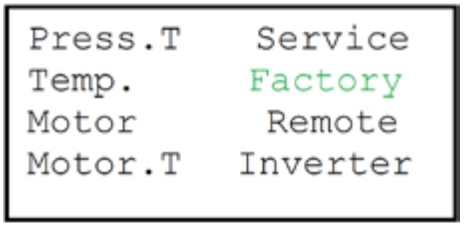


Service

Pressing the down button will switch to the Service menu option which is flashing.

At this time, pressing the shift button to enter the Service option to view the service related parameters.

Press the return button to exit.

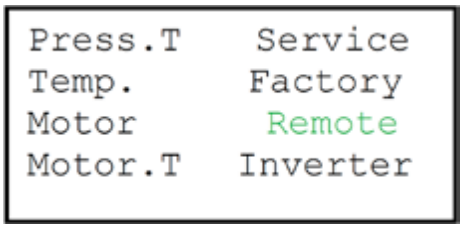


Factory

Pressing the down button will switch to the Factory menu option which is flashing.

At this time, pressing the shift button to enter the Factory option to view the factory related parameters.

Press the return button to exit.

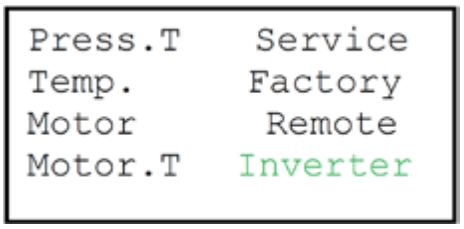


Remote

Pressing the down button will switch to the Remote menu option which is flashing.

At this time, pressing the shift button to enter the Remote option to view remote control related parameters.

Press the return button to exit.



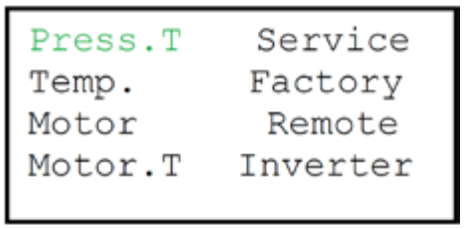
Inverter

Pressing the down button will switch to the Inverter menu option which is flashing.

At this time, pressing the shift button to enter the Inverter option to view inverter control related parameters.

Press the return button to exit.

3.2 - FACTORY PARAMETER MODIFICATION

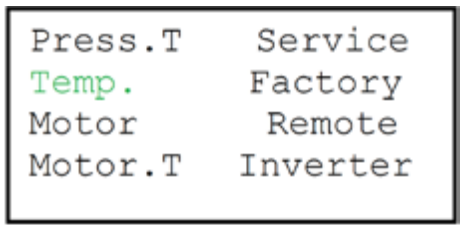


Press.T

In Code menu, enter the corresponding password and press the info button to enter the factory parameter menu).

The Press.T menu option is flashing after entering.

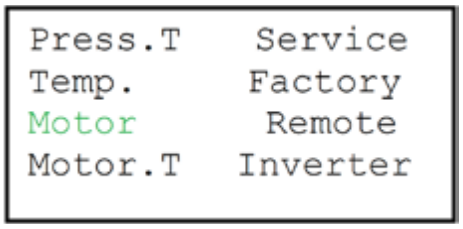
At this time, pressing the shift button to enter the Press.T option to modify related parameters.



Temp.

Pressing the down button will switch to the Temp. option which is flashing.

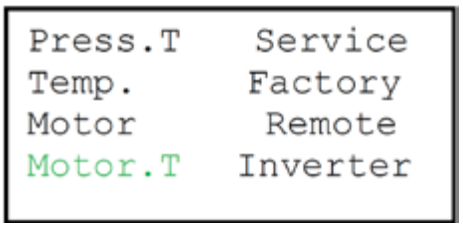
At this time, pressing the shift button to enter the temperature menu option to modify temperature parameter.



Motor

Pressing the down button will switch to the Motor menu option which is flashing.

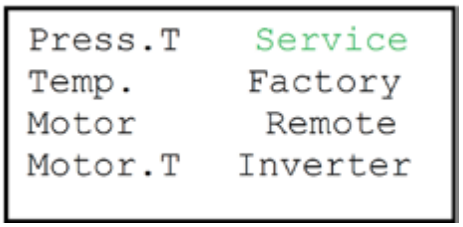
At this time, pressing the shift button to enter the Motor option to modify related parameters.



Motor T.

Pressing the down button will switch to the Motor.T menu option which is flashing.

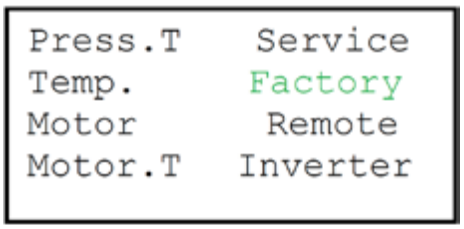
At this time, pressing the shift button to enter the Motor.T option to modify related parameters.



Service

Pressing the down button will switch to the Service menu option which is flashing.

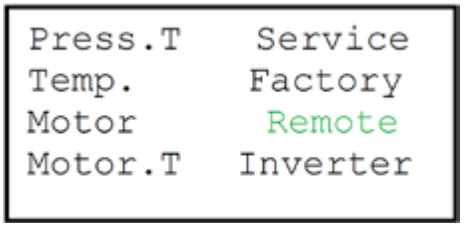
At this time, pressing the shift button to enter the Service option to modify related parameters.



Factory

Pressing the down button will switch to the Factory menu option which is flashing.

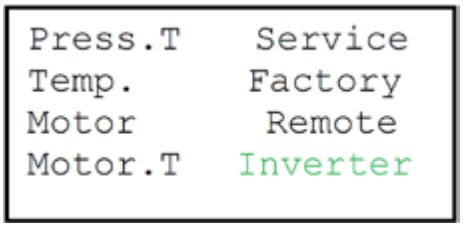
At this time, pressing the shift button to enter the Factory option to modify related parameters.



Remote

Pressing the down button will switch to the Remote menu option which is flashing.

At this time, pressing the shift button to enter the Remote option to modify related parameters.



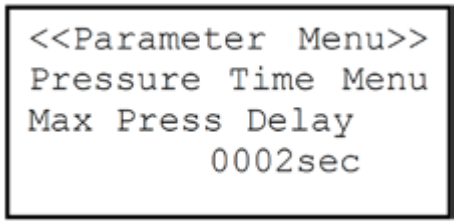
Inverter

Pressing the down button will switch to the Inverter menu option which is flashing.

At this time, pressing the shift button to enter the Inverter option to modify related parameters.

3.3 - FACTORY PARAMETER DETAILS

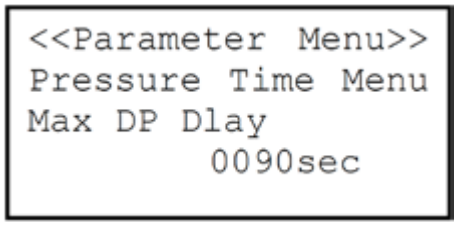
3.3.1 - PRESSURE TIME MENU



Parameter 1

This parameter defines the shut-down delay time because of high sump pressure. This function can prevent the compressor from shutting down when the sump pressure exceeds the parameter “Max Pressure” setting value within a short time.

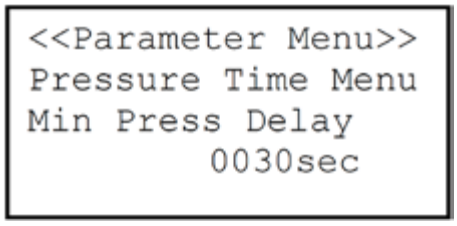
Setting range: (2 ~ 20s)



Parameter 2

This parameter defines the time-delay for difference pressure oil separator warning. (The parameter “Max Press. Diff.” sets the maximum difference pressure value.)

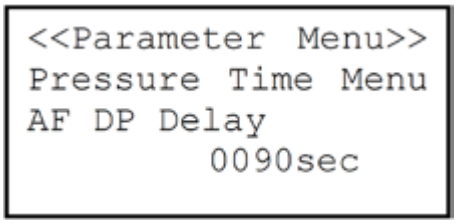
Setting range: (2 ~ 300s).



Parameter 3

If the system pressure has not reached the parameter "Min Pressure" setting value within the “Min Press Delay” time after the compressor starts, the compressor will shut down.

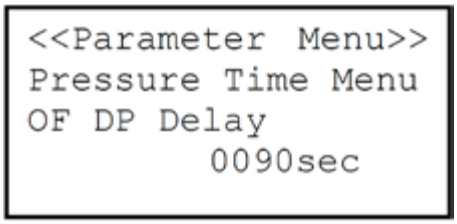
Setting range: (2 ~ 99s).



Parameter 4

This parameter defines the time-delay for Air Filter Block warning.

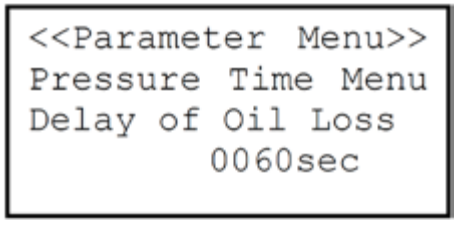
Setting range: (2 ~ 300s)



Parameter 5

This parameter defines the time-delay for Oil Filter Block warning.

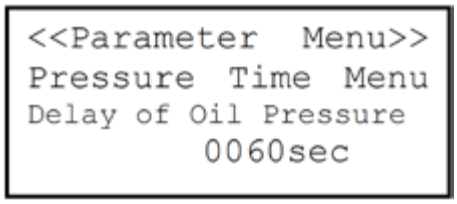
Setting range: (2 ~ 300s)



Parameter 6

This parameter defines the time-delay for oil loss fault.

Setting range: (5 ~ 90s).

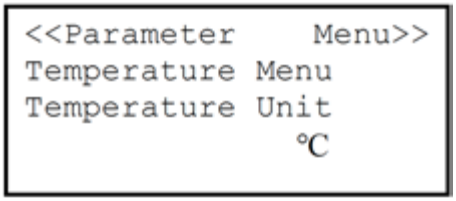


Parameter 7

This parameter defines the time-delay for lubricant oil pressure switch.

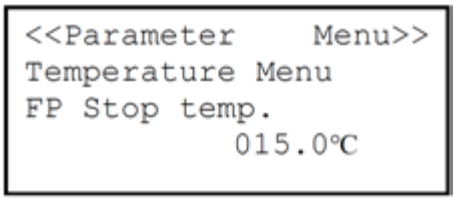
Setting range: (5 ~ 90s).

3.3.2 - TEMPERATURE MENU



Parameter 1

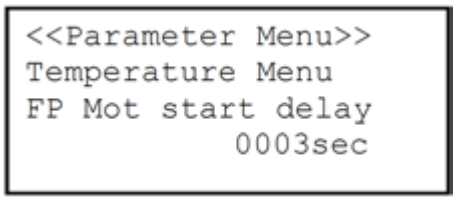
Set the unit of temperature. (℃ / ℉)



Parameter 2

This parameter defines the switch-off temperature of frost-protection. At this temperature, the compressor will stop the heat up mode.

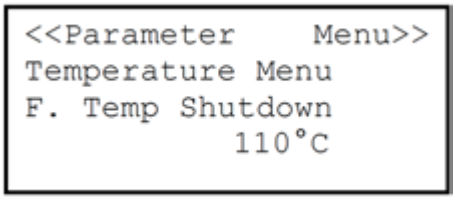
Setting range: (10 ~ 30℃)



Parameter 3

This parameter defines the time-delay for starting the compressor at frost-protection temperature (Reserved).

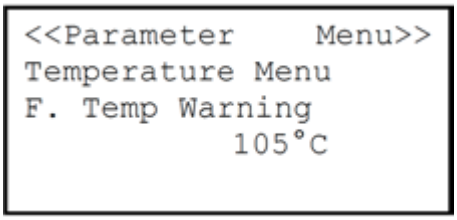
Setting range: (2 ~ 99s)



Parameter 4

This parameter defines the upper temperature shut-down limit.
If the compressor temperature reaches this limit it will shut-down.

Setting range: (85 ~ 110℃)



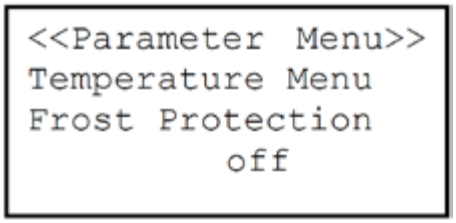
Parameter 5

This parameter defines the upper temperature warning limit. If the compressor temperature reaches this limit it will give out a warning and the compressor is still in operation.

Setting range: (85 ~ 110℃)

Set frost protection On/Off

Default: Off

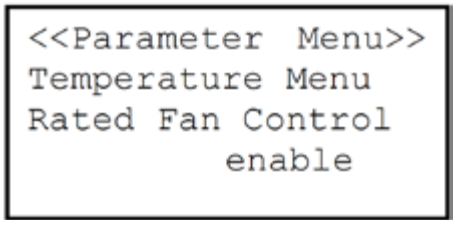


Parameter 6

Note 1: When the "Frost Protection" is set "ON", if the temperature falls below the parameter “FP Start temp.” threshold, the compressor cannot be started. If you want to start the compressor when the temperature is lower than the “FP Start temp.” setting value, you need to set “Frost Protection” to “Off”.

Note2: When the compressor is in shutdown state after the "Idling time", once the temperature is lower than "FP Start temp.", the compressor will automatically start the idle operation until the temperature is higher than the parameter "FP Stop temp." setting value (during this period, all parts of the compressor will be preheated to prevent the compressor from freezing).

This parameter is to define whether the operation of the fan is affected by temperature.



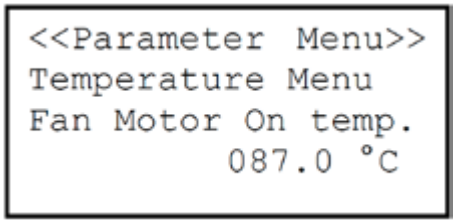
Parameter 7

Disable: The fan output function follows the main motor to start and stop. Generally, the inverter fan or water cooling should be set to "disable"

Enable:The fan output function follows the exhaust temperature to start and stop.

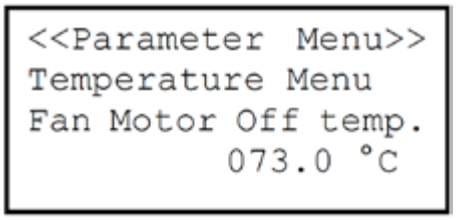
Set fan output (Digital Output Function Setting) starting temperature (Parameter(9) +10 ~ 110℃)

When the "Rated Fan Control" is set "disable", this setting has no relationship with the operation of the fan.



Parameter 8

When the “Rated Fan Control” is set “enable”, this setting takes effect,the fan will only operate normally if the exhaust temperature rises to the setting value.

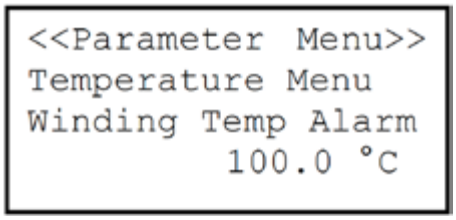


Parameter 9

Set fan output (Digital Output Function Setting) stop temperature (25 ~ Parameter (8) -10℃)

When the "Rated Fan Control" is set "disable", this setting has no relationship with the operation of the fan.

When the "Rated Fan Control" is set "enable", this setting takes effect and the fan will stop running only when the exhaust temperature falls below the setting value.



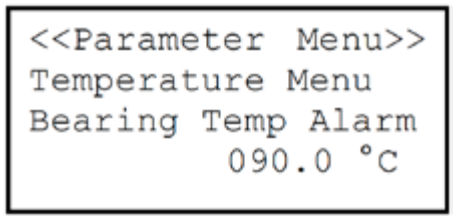
Parameter 10

This parameter defines the winding temperature alarm value.

Setting range: (90 ~ 200℃)

Compressor will shut down when winding temperature reaches the setting value.

This function works only when EXT MODULE TYPE3 is set "ON".

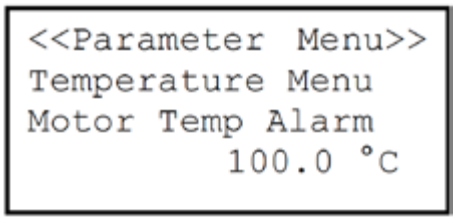


Parameter 11

This parameter defines the bearing temperature alarm value.

Setting range: (50 ~ 140 ℃)

Compressor will shut down when bearing temperature reaches the setting value. This function works only when EXT MODULE TYPE3 is set "ON".



Parameter 12

This parameter defines the motor temperature alarm value.

Setting range: (50 ~ 140 ℃)

Compressor will shut down when motor temperature reaches the setting value. This function works only when EXT MODULE TYPE3 is set "ON".

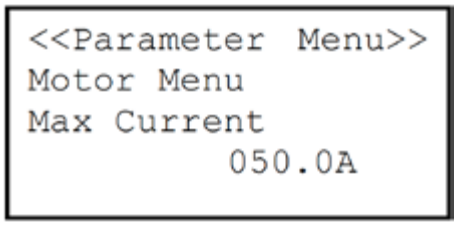
Frost protection function additional description. (Not fully applicable to the current software version, only for the users reference with the lower software version.)

The controller is equipped with automatic anti-freeze protection function, you can open this feature dealer password, when the air compressor temperature is lower than the antifreeze start temperature, the air compressor will automatically start heating the internal components, the temperature exceeds the antifreeze protection shutdown temperature, air compressor will continue empty operation.

Note 1: If the temperature is lower than the setting value, the air compressor will not start, the temperature must be increased beyond this value to start the air compressor; authorized to maintain this parameter can be modified or at temperatures below The air compressor is activated under the extreme low temperature (Temperature Menu - Parameter 6). The above actions are only allowed when there is no external heating equipment to prevent the air compressor from being damaged due to the low temperature freezing (such as low viscosity of lubricating oil)

Note 2: The air compressor will start automatically when the air compressor is under power supply (controller is in standby mode). When the air compressor temperature is lower than the limit low temperature, after the antifreeze start delay time (Temperature Menu - Parameter 3) Heating internal components. When you press the stop button on the panel, you can turn off frost protection.

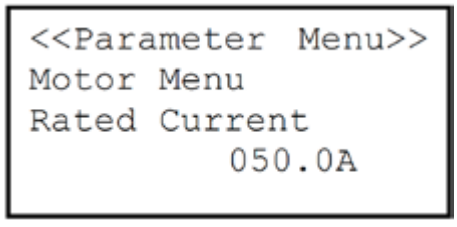
3.3.3 - MOTOR MENU



Parameter 1

This parameter defines allowable max. current of main motor.

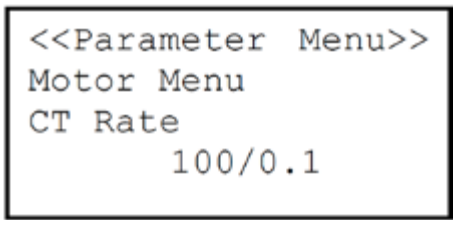
Setting range: (3 ~ 800A)



Parameter 2

This parameter defines rated current of main motor.

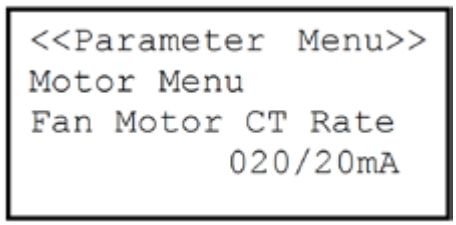
Setting range: (3 ~ 800A)



Parameter 3

This parameter defines main motor transmission ratio of current transformer.

Setting range: (20 ~ 800)

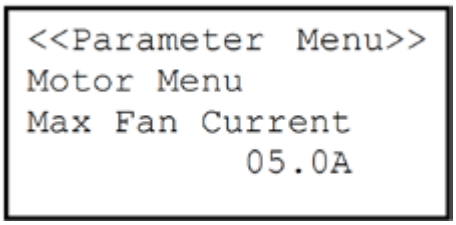


Parameter 4

This parameter defines fan motor transmission ratio of current transformer.

Setting range: (5 ~ 50)

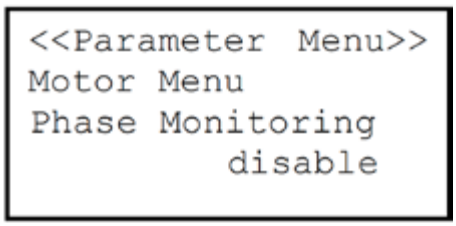
This setting is automatically hidden and has no effect when EXT MODULE TYPE2 is set "ON".



Parameter 5

This parameter defines allowable max. current of fan motor.

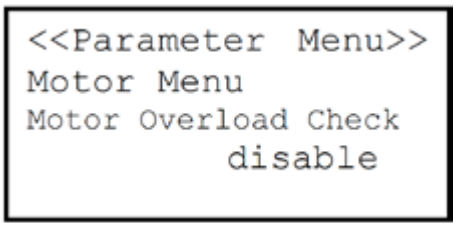
Setting range: (1 ~ 30A)



Parameter 6

This parameter defines whether to enable the phase sequence protection function of the main motor.

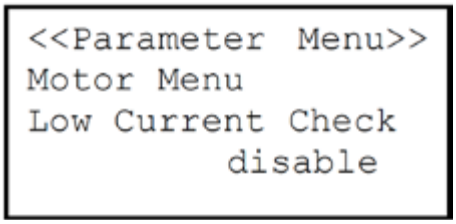
Setting range: (disable/enable)



Parameter 7

This parameter defines whether to enable the overload protection function of the main motor.

Setting range: (disable/enable)

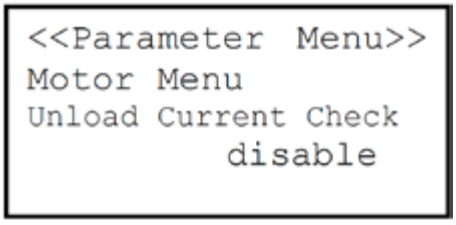


Parameter 8

This parameter defines whether to enable the low current protection function of the main motor.

Setting range: (disable/enable)

When it is set to "enable", if the main motor current is less than 5% of the "Max Current" and lasts 10 seconds when the compressor starts, the controller will report a "Low Current Protection" fault.

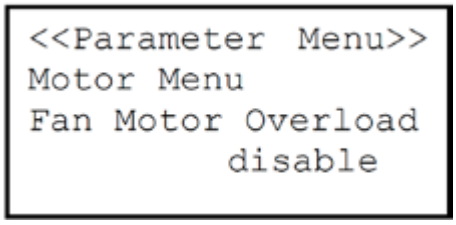


Parameter 9

This parameter defines whether to enable the unloading current protection function of the main motor.

Setting range: (disable/enable)

When it is set to "enable" and the compressor is in idle mode, if the main motor current is greater than the "Max Current" * "Max Current at Uload" (default 80%) for 10 seconds, the controller will report a "Unload current protection" fault .

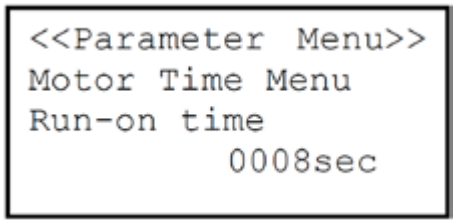


Parameter 10

This parameter defines whether to enable overload protection of the fan motor.

Setting range: (disable/enable)

3.3.4 - MOTOR TIME MENU



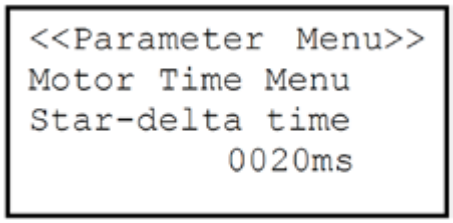
Parameter 1

This parameter defines the run-on time of the main motor before switching from star to delta.

Setting range: (2 ~ 20s)

When using the inverter, the “Run-on time” setting should satisfy the formula:

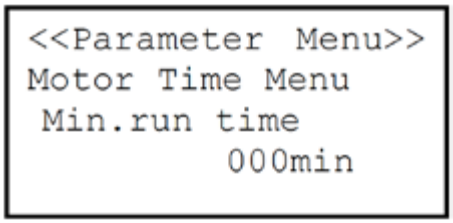
Run-on time >= Motor Min. Frequency*35s / Motor Max. Frequency



Parameter 2

This parameter defines the Y-Δ switch over time. (time between switching star off and delta on.)

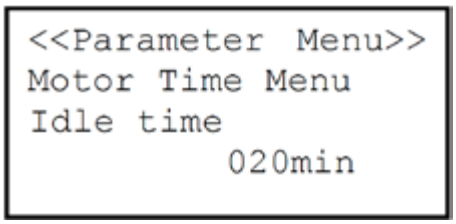
Setting range: (20...99ms)



Parameter 3

This parameter defines the minimum motor run time between motor's start and motor's stop.

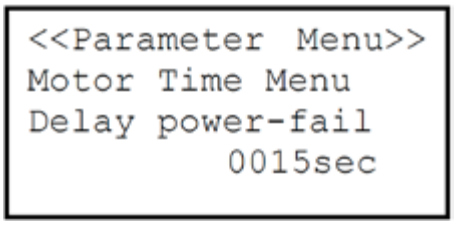
Setting range: (0...30 min)



Parameter 4

This parameter defines the IDLE time before shut-down (Idling-time).

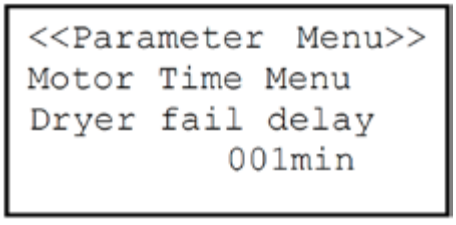
Setting range: (0 ~ 50min)



Parameter 5

This parameter defines the delayed power up time after power failure.

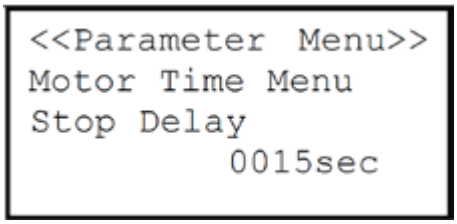
Setting range: (off,1 ~ 60s)



Parameter 6

This parameter defines the time-delay for Dryer Err warning.

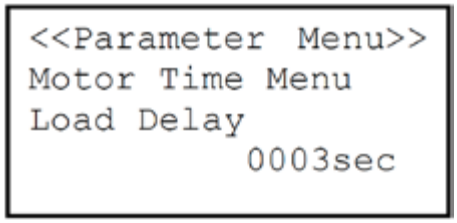
Setting range: (0 ~ 20min)



Parameter 7

This parameter defines the run time-delay after manual stop.

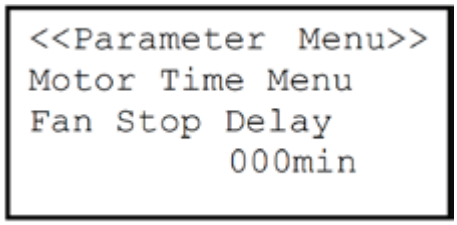
Setting range: (1 ~ 250s)



Parameter 8

This parameter defines the idle time between motor start-up and first load.

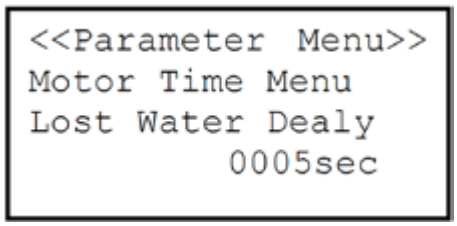
Setting range: (1 ~ 30s)



Parameter 9

This parameter defines the fan's stop time after motor's stop.

Setting range: (1 ~ 20min)

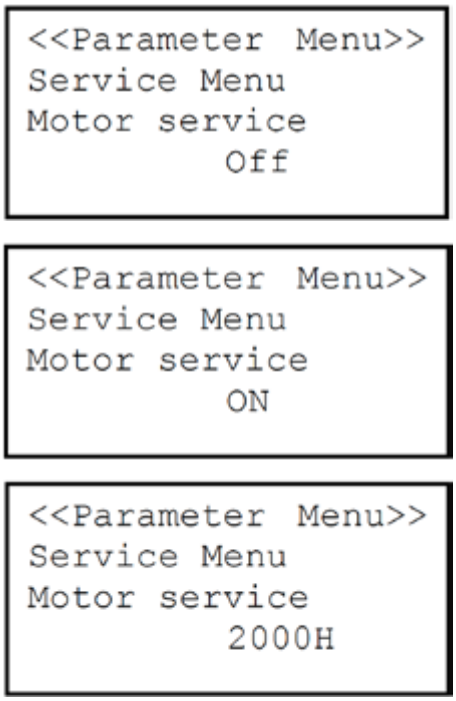


Parameter 10

This parameter defines the effective delay time of the water loss input signal.

Setting range: (0 ~ 8 s)

3.3.5 - SERVICE MENU



Parameter 1

Turn on/off the motor maintenance and set the service interval

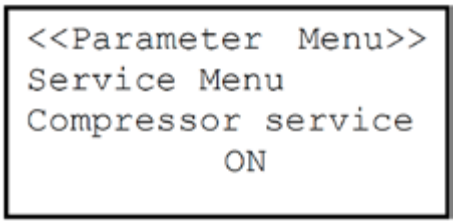
Setting range:(100 ~ 30000h)

Off = disable motor service

On = enable motor service

If the service interval is reached, the controller stops counting and on the 4th line “Reset” is visible, pressing the info button about 2 seconds to reset the interval to the preset value.

If the interval is set “ON”, after pressing the info button , a countdown of the interval is displayed on the screen, then use shift button to change the service interval.

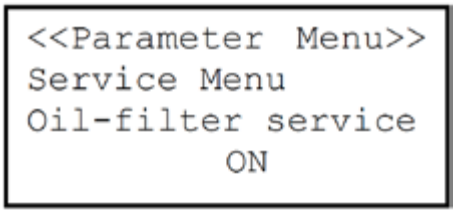


Parameter 2

Turn on/off the compressor maintenance and set the service interval.

Setting range: (100 ~ 20000h)

To change the value, see ***Parameter 1***.

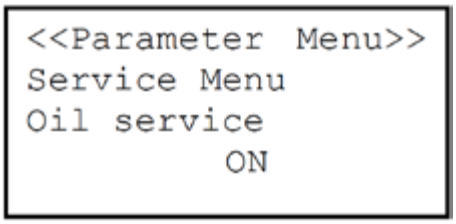


Parameter 3

Turn on/off the oil-filter maintenance and set the service interval.

Setting range: (100 ~ 10000h)

To change the value, see ***Parameter 1***.



Parameter 4

Turn on/off the lubrication oil maintenance and set the service interval.

Setting range: (100 ~ 16000h)

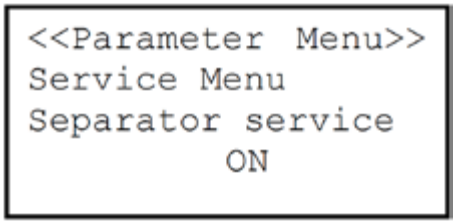
To change the value, see ***Parameter 1***.

Parameter 5

Turn on/off the belt maintenance and set the service interval.

Setting range: (100 ~ 25000h)

To change the value, see ***Parameter 1***.

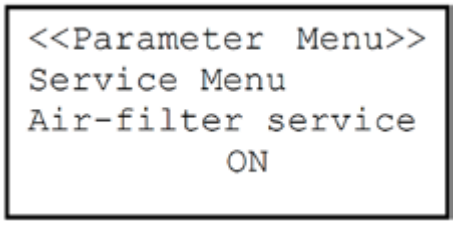


Parameter 6

Turn on/off the separator maintenance and set the service interval.

Setting range: (100 ~ 10000h)

To change the value, see ***Parameter 1***.

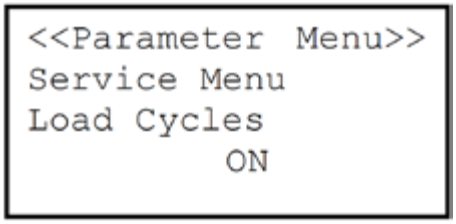


Parameter 7

Turn on/off the air-filter maintenance and set the service interval.

Setting range: (100 ~ 10000h)

To change the value, see ***Parameter 1***.



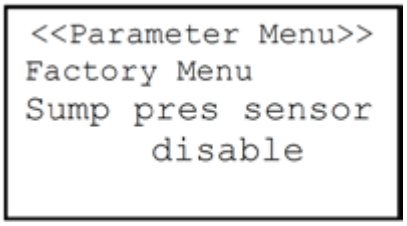
Parameter 8

Turn on/off the loaded/idling cycle counter maintenance and set the service interval.

Setting range: (10000 ~ 2000000)

To change the value, see ***Parameter 1***.

3.3.6 - FACTORY MENU



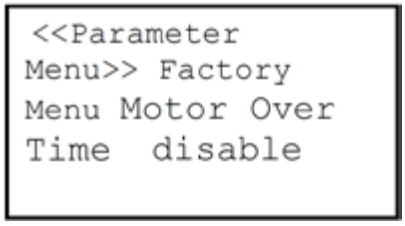
Parameter 1

Set whether to use sump pressure sensor.

Disable = without sump pressure sensor

Enable = with sump pressure sensor

If there is a sump pressure sensor in the system, it can be set “enable”.

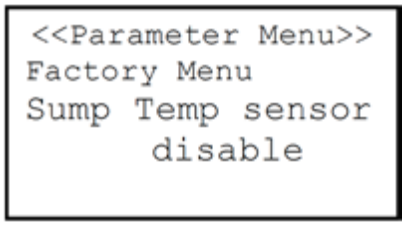


Parameter 2

Enable/disable the Motor Overtime function.

Disable = Turn off

Enable = Turn on

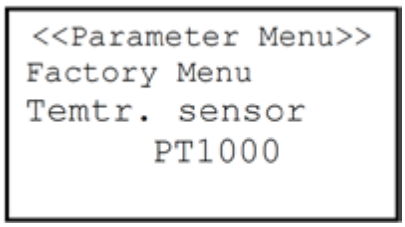


Parameter 3

Set whether to use sump temperature sensor.

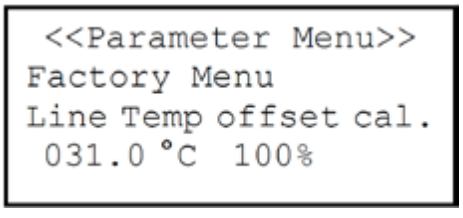
Disable = without sump temperature sensor

Enable = with sump temperature sensor



Parameter 4

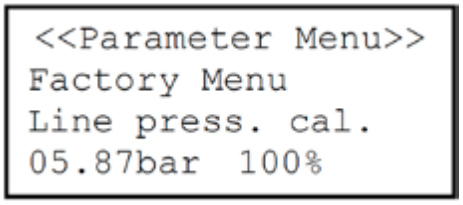
Select PT100 or PT1000 sensor.



Parameter 5

Line Temperature offset calibration.

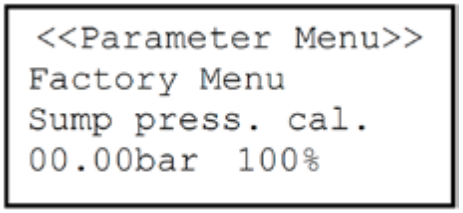
Setting range: (90 ~ 110%)



Parameter 6

Line pressure gain calibration.

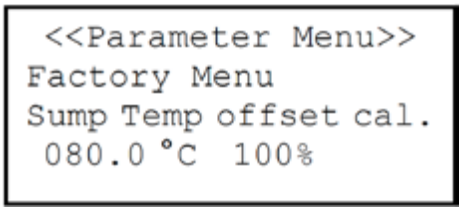
Setting range: (90 ~ 110%)



Parameter 7

Sump pressure gain calibration.

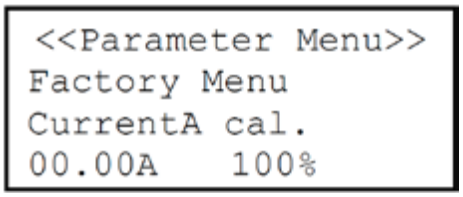
Setting range: (90 ~ 110%)



Parameter 8

Sump temperature offset calibration.

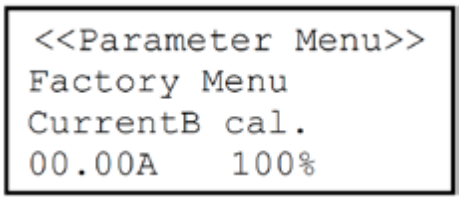
Setting range: (90 ~ 110%)



Parameter 9

Main motor Phase A current calibration.

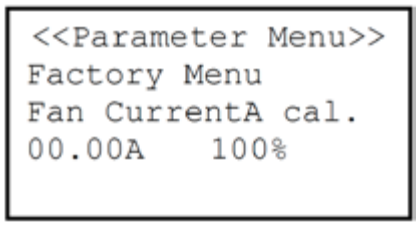
Setting range: (90 ~ 110%)



Parameter 10

Main motor Phase B current calibration.

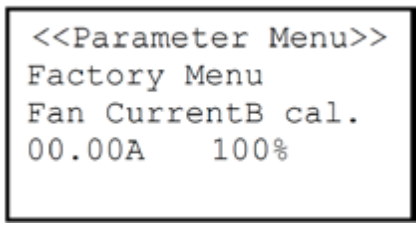
Setting range: (90 ~ 110%)



Parameter 11

Fan motor Phase A current calibration.

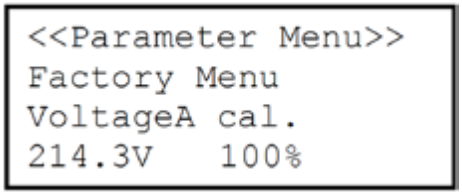
Setting range: (90 ~ 110%)



Parameter 12

Fan motor Phase B current calibration.

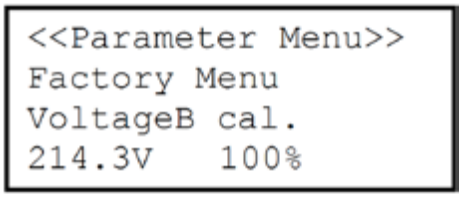
Setting range: (90 ~ 110%)



Parameter 13

VoltageA calibration.

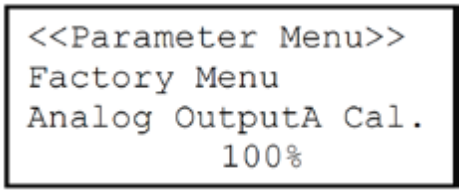
Setting range: (90 ~ 110%)



Parameter 14

VoltageB calibration.

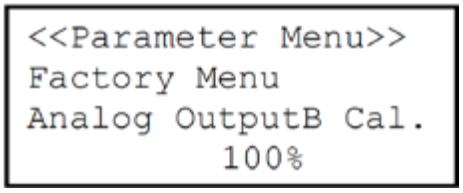
Setting range: (90 ~ 110%)



Parameter 15

Analog output A calibration.

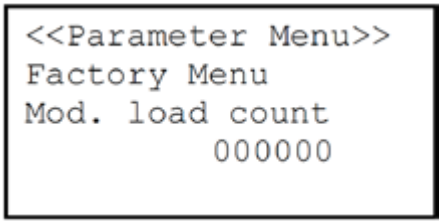
Setting range: (90 ~ 110%)



Parameter 16

Analog output B calibration.

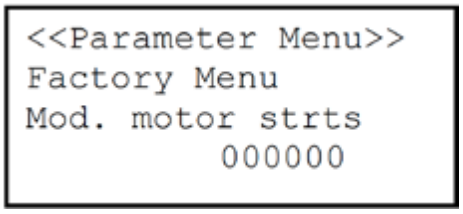
Setting range: (90 ~ 110%)



Parameter 17

Modify the cumulative times of loading and unloading switching.

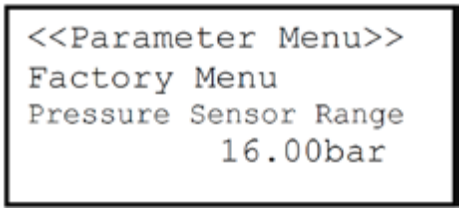
Setting range: (0 ~ 60000)



Parameter 18

Modify the cumulative times of motor starts.

Setting range: (0 ~ 800000)

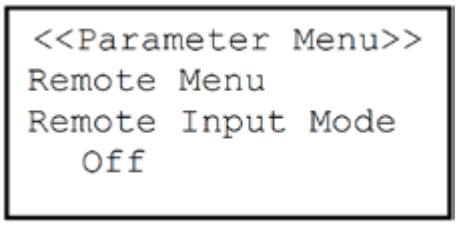


Parameter 19

Modify maximum pressure sensor range.

Setting range: (2 ~ 25bar)

3.3.7 - REMOTE MENU

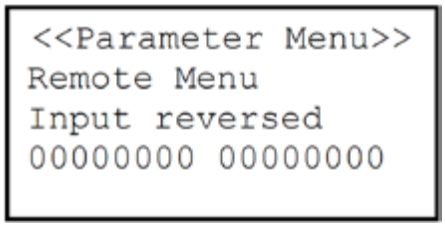


Parameter 1

This parameter defines the remote-mode.

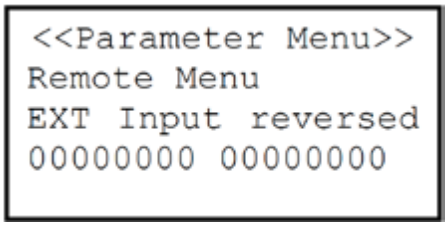
OFF = Remote is deactivated (Local operation)

ON = Remote is activated.



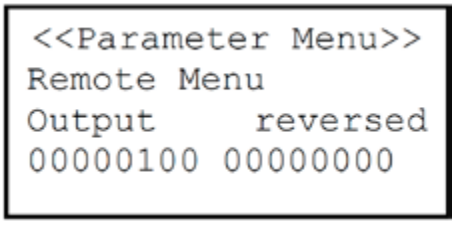
Parameter 2

Reversed bit for Input port.



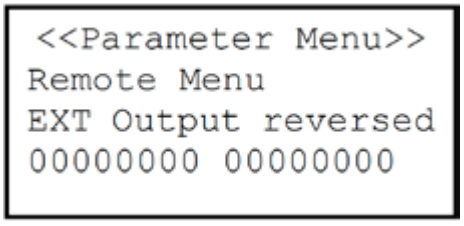
Parameter 3

Reversed bit for Extended Input port.



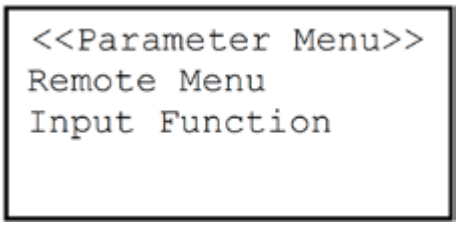
Parameter 4

Reversed bit for output port.



Parameter 5

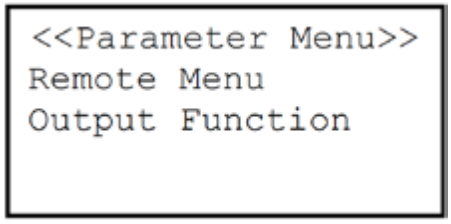
Reversed bit for Extended Output port.



Parameter 6

Set digital input function.

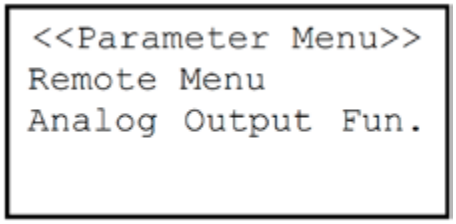
Set Extended Digital input function.



Parameter 7

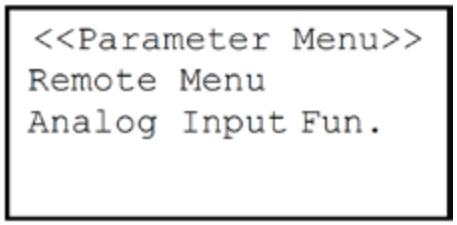
Set Digital output function.

Set Extended Digital output function.



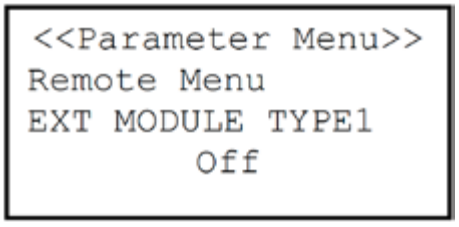
Parameter 8

Set Analog output function.



Parameter 9

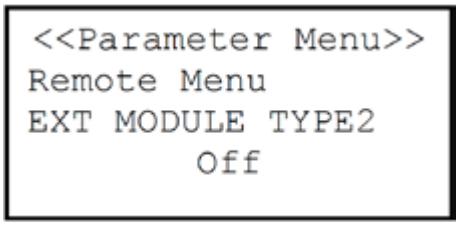
Set Analog input function.



Parameter 10

On: Extended Module Type1 is activated.

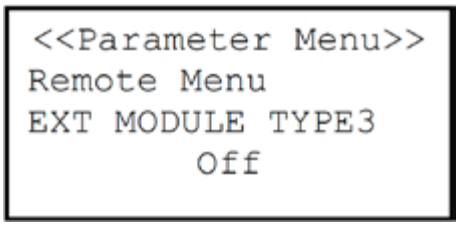
Off: Extended Module Type1 is deactivated.



Parameter 11

On: Extended Module Type2 is activated.

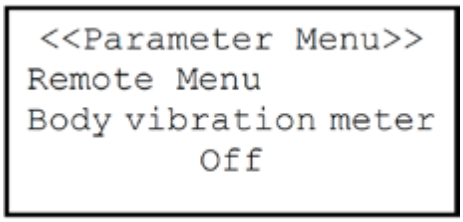
Off: Extended Module Type2 is deactivated.



Parameter 12

On: Extended Module Type3 is activated.

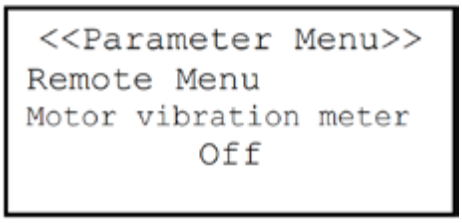
Off: Extended Module Type3 is deactivated.



Parameter 13

On: Body vibration meter is activated.

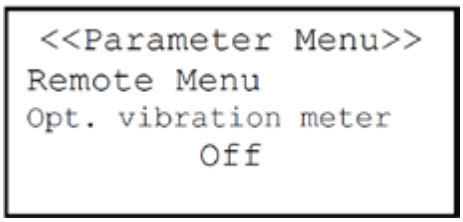
Off: Body vibration meter is deactivated.



Parameter 14

On: Motor vibration meter is activated.

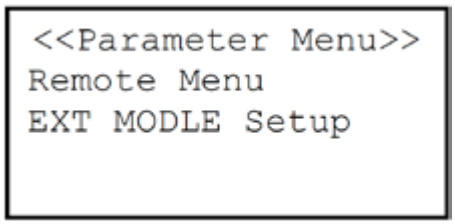
Off: Motor vibration meter is deactivated.



Parameter 15

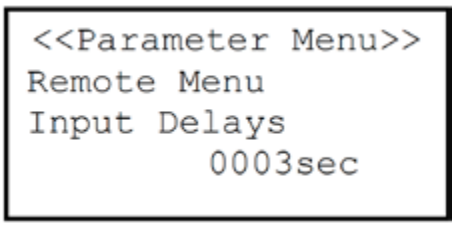
On: Opt. vibration meter is activated.

Off: Opt. vibration meter is deactivated.



Parameter 16

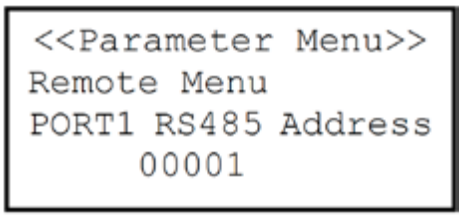
You can manually set the "Module No", "Parameter Address", "Parameter Data", etc. Refer to “supplementary screen” below for details.



Parameter 17

This Parameter defines the signal delay of digital inputs. If the duration of digital input signal is less than the set value, it is ignored by the controller.

Setting range: (off,1 ~ 60s)



Parameter 18

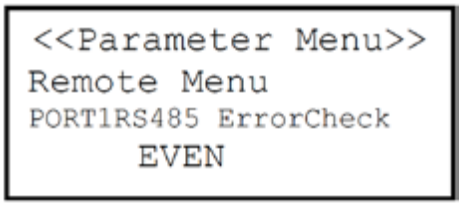
This Parameter defines the controller address for the RS485-1.

Setting range: (1 ~ 127)

Parameter 19

This Parameter defines the data transfer speed (Baudrate) of RS485-1.

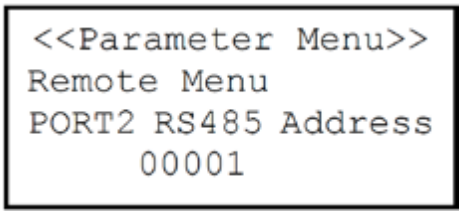
Setting range: (4800/9600/14400/19200bps)



Parameter 20

This Parameter defines the parity bit of RS485-1.

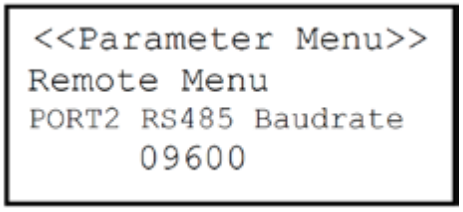
Setting range: (EVEN/ODD/NONE)



Parameter 21

This Parameter defines the controller address for the RS485-2.

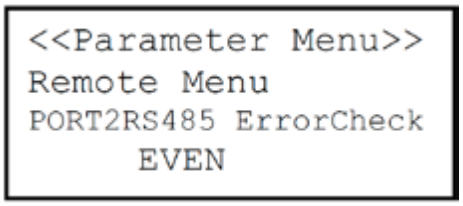
Setting range: (1 ~ 127)



Parameter 22

This Parameter defines the data transfer speed (Baudrate) of RS485-2.

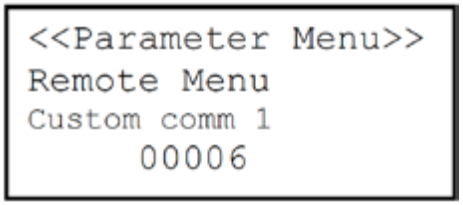
Setting range: (4800/9600/14400/19200bps)



Parameter 23

This Parameter defines the check bit of RS485-2.

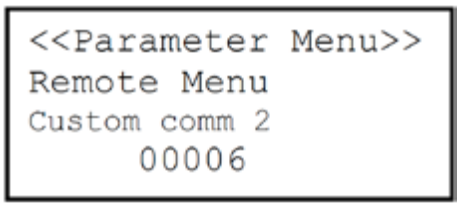
(EVEN/ODD/NONE)



Parameter 24

Set communication address 40553 dynamic optional function.

Setting range: 1 ~ 50

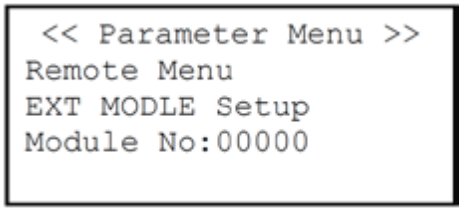


Parameter 25

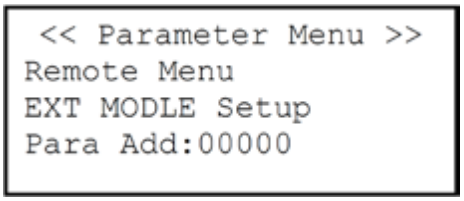
Set communication address 40562 dynamic optional function.

Setting range: 1 ~ 50

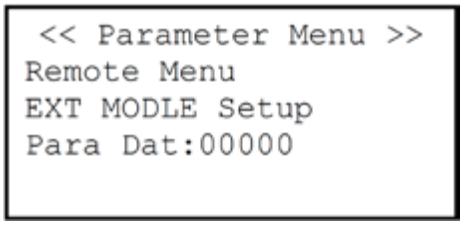
3.3.8 - SUPPLEMENTARY SCREEN



Page on the left appears after pressing the shift button on the "EXT MODLE Setup" page. The module station number of the extension module can be modified.

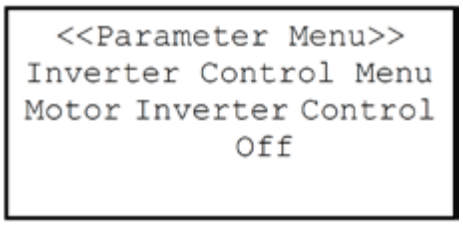


Press down button again to enter this page. The parameter address of the extension module can be modified.



Press down button again to enter this page. The parameter data of the extension module can be modified.

3.3.9 - INVERTER MENU



Parameter 1

Activate the main motor variable frequency control function.

OFF = Inverter control de-activated

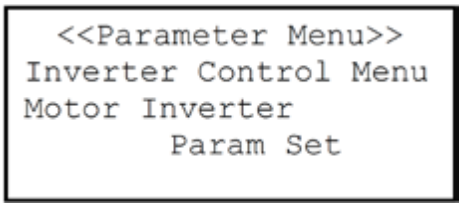
ON = Inverter control activated

When this parameter is set "ON", A2-B2PORT(RS485(INV)) is defined as the communication port with frequency converter.

Default setting: 9600Baud Rate

Data format: 8 data bits/1 stop bit/EVEN parity/

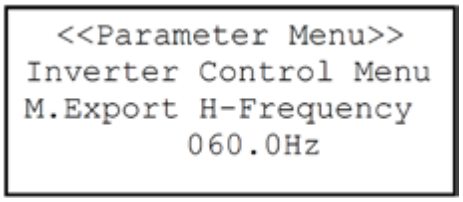
These settings can be modified in “Remote Menu”.



Parameter 2

Motor inverter parameters setting.

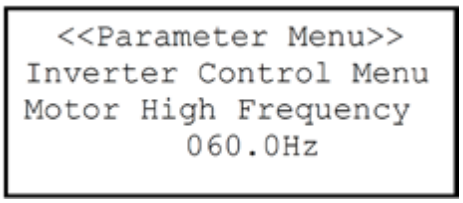
In this screen,pressing the shift button to enter “Motor Inverter Param Set” subpage and set the relevant parameters.



Parameter 3

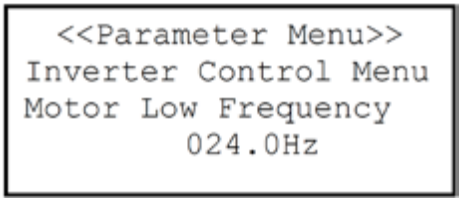
This parameter sets the maximum output frequency for the main motor when the controller outputs 20mA (40 ~ 600Hz).

It takes about 30s from the min. frequency (0Hz) up to the “M.Export H-Frequency”.



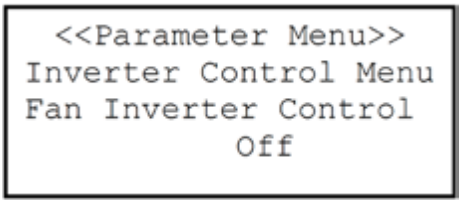
Parameter 4

The allowable highest frequency of main motor operating. (If analog output function is set 6 (Inverter motor), the frequency should be set as same as ***Parameter 3***.) (30 ~ 600Hz)



Parameter 5

The allowable lowest frequency of main motor operating. (10 ~ 100Hz)



Parameter 6

Activate fan motor variable frequency control function.

OFF = Inverter control de-activated

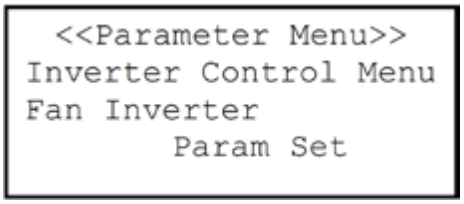
ON = Inverter control activated

When this parameter is set "ON", A2-B2 PORT(RS485(INV)) is defined as the communication port with frequency converter.

Default setting: 9600Baud Rate

Data format: 8 data bits/1stop bit/EVEN parity/

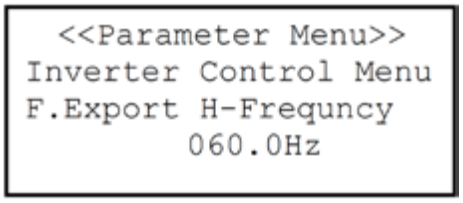
These settings can be modified in the Remote Menu.



Parameter 7

Fan inverter parameters setting.

In this screen,pressing the shift button to enter “Fan Inverter Param Set” subpage and set the relevant parameters.

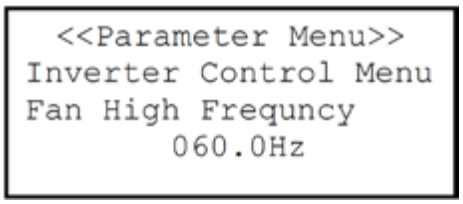


Parameter 8

This parameter sets the maximum output frequency for the fan motor when the controller outputs 20mA.

Setting range: (40 ~ 400Hz)

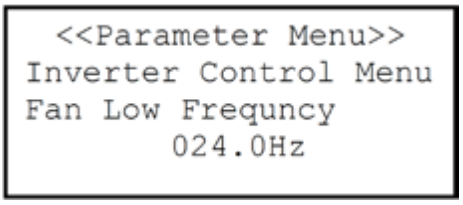
It takes about 30s from the min. frequency (0Hz) up to the “F.Export H-Frequency”.



Parameter 9

The allowable highest frequency of fan motor operating.

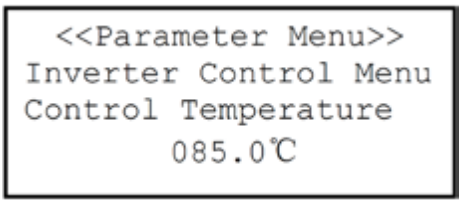
Setting range: (10 ~ 400Hz)



Parameter 10

The allowable lowest frequency of fan motor operating.

Setting range: (10 ~ 100Hz)

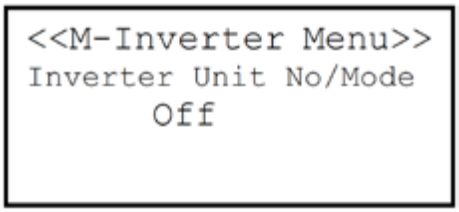


Parameter 11

The target temperature value for a fan variable frequency control.

Setting range: (Fan Motor Off temp. ~ Fan Motor On temp.)

3.3.10 - M-INVERTER MENU



Parameter 1

Device address and control mode of VFD.

Inverter NO. Range: (Off,1 ~ 255)

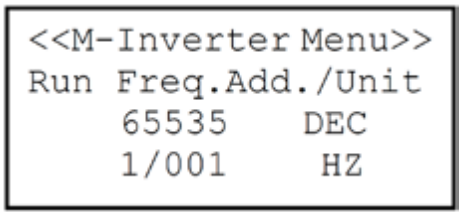
Mode range: (Controller PID,Inverter PID)

In this screen, pressing the shift button for the first time to change the Inverter NO.

After the modification is completed, press the info button to save. Then press the shift button again to change the Inverter Mode, after the modification is completed, press the info button to save.

It indicates the buffer address of the run frequency data stored in Inverter and the run frequency data unit.

Address range: (0 ~ 65534)



Parameter 2

Default: 65535 (This function is invalid) 65535 means that the controller will not send any read/write instructions to inverter at this situation.

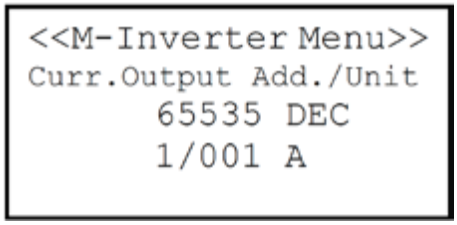
Unit range: (1/1,1/10,1/100)

In this screen, pressing the shift button for the first time to change the Inverter NO.

After the modification is completed, press the info button to save. Then press the shift button again to change the Inverter Mode, After the modification is completed, press the info button to save.

It indicates the buffer address of the Current Output data stored in Inverter and the Current Output data unit.

Address range: (0 ~ 65534)



Parameter 3

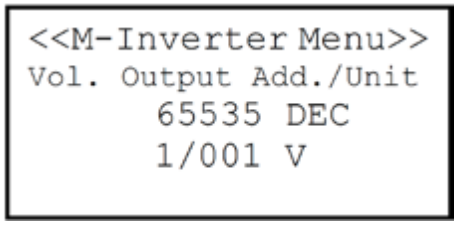
Default: 65535 (This function is invalid). 65535 means the controller will not send any read/write instructions to inverter at this situation.

Unit range: (1/1,1/10,1/100)

The setting method of Address and unit refer to ***Parameter 2***.

It indicates the buffer address of the Voltage Output data stored in Inverter and the Voltage Output data unit.

Address range: (0 ~ 65534)

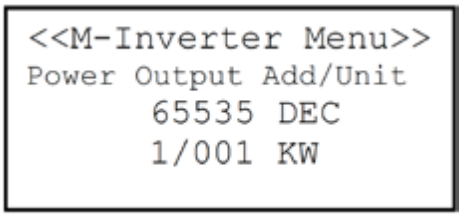


Parameter 4

Default: 65535 (This function is invalid) 65535 means the controller will not send any read/write instructions to inverter at this situation.

Unit range: (1/1,1/10,1/100)

The setting method of Address and unit refer to ***Parameter 2***.



Parameter 5

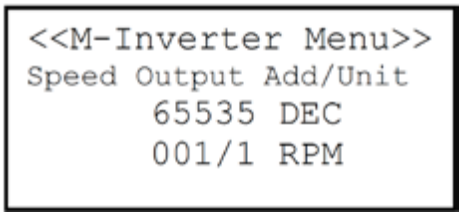
It indicates the buffer address of the Power Output data stored in Inverter and the Power Output data unit.

Address range: (0 ~ 65534)

Default: 65535 (This function is invalid) 65535 means the controller will not send any read/write instructions to inverter at this situation.

Unit range: (1/1,1/10,1/100)

The setting method of Address and unit refer to ***Parameter 2.***



Parameter 6

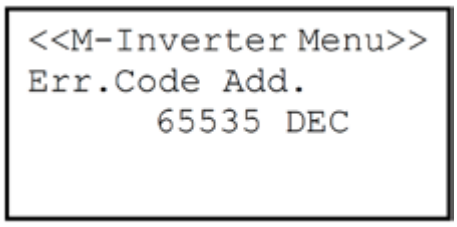
It indicates the buffer address of the Speed Output data stored in Inverter and the Speed Output data unit.

Address range: (0 ~ 65534)

Default: 65535 (This function is invalid) 65535 means controller will not send any read/write instructions to inverter at this situation.

Unit range: (1/1,1/10,1/100)

The setting method of Address and unit refer to ***Parameter 2***.



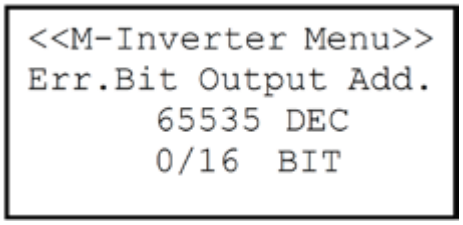
Parameter 7

It indicates the buffer address of the Error Code data stored in Inverter.

Address range: (0 ~ 65534)

Default: 65535 (This function is invalid) 65535 means the controller will not send any read/write instructions to inverter at this situation.

The setting method of Address refer to ***Parameter 2***.



Parameter 8

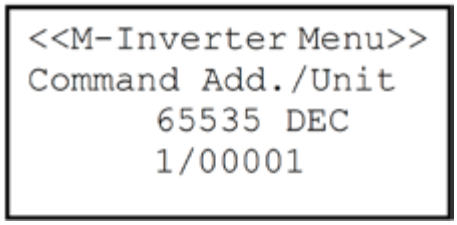
It indicates the buffer address of the Error Bit Output data stored in Inverter and the Bit of Error.

Address range: (0 ~ 65534)

Default: 65535 (This function is in valid) 65535 means the controller will not send any read/write instructions to inverter at this situation.

Bit range: (0 ~ 15)

The setting method of Address and Bit refer to ***Parameter 2.***



Parameter 9

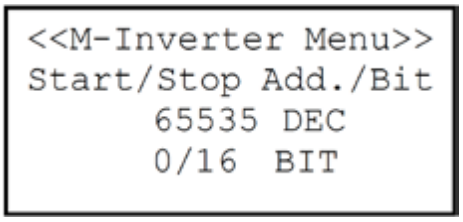
It indicates the buffer address of the Command data stored in Inverter and the Command data unit

Address range: (0 ~ 65534)

Default: 65535 (This function is invalid) 65535 means the controller will not send any read/write instructions to inverter at this situation.

Unit range: (1/1,1/10,1/100,1/1000,1/10000)

The setting method of Address and unit refer to ***Parameter 2***.



Parameter 10

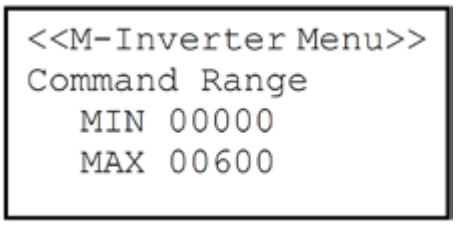
It indicates the buffer address of the Start/Stop data stored in Inverter and the Bit of Start/Stop.

Address range: (0 ~ 65534)

Default: 65535 (This function is invalid) 65535 means the controller will not send any read/write instructions to inverter at this situation.

Bit range: (0 ~ 15)

The setting method of Address and Bit refer to ***Parameter 2***.



Parameter 11

The minimum and maximum value of the VFD command.

MIN range: (0 ~ 65535)

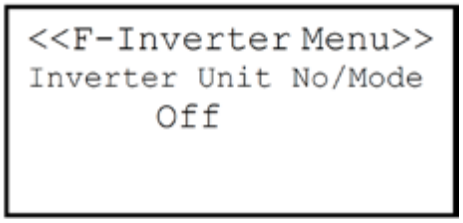
MAX range: (0 ~ 65535)

The decimal digits depend on the Command data unit (***Parameter 9***).

When the unit is 1, no decimal; When the unit is 1/10, 1 decimal places; When the unit is 1/100, 2 decimal places; When the unit is 1/1000, 3 decimal places; When the unit is 1/10000, 4 decimal places.

The setting method of MIN and MAX refer to ***Parameter 2***.

3.3.11 - F-INVERTER MENU



Parameter 1

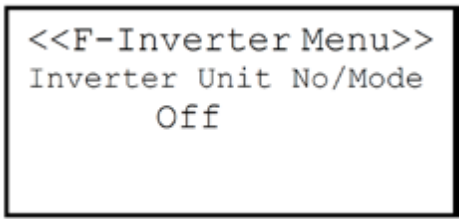
Device address and control mode of VFD.

Inverter NO. Range: (Off,1 ~ 255)

Mode range: (Controller PID,Inverter PID)

In this screen, pressing the shift button for the first time to change the Inverter NO.

After the modification is completed, press the info button to save. Then press the shift button again to change the Inverter Mode, after the modification is completed, press the info button to save.



Parameter 2

It indicates the buffer address that Inverter stores the Run Frequency data and the Run Frequency data unit.

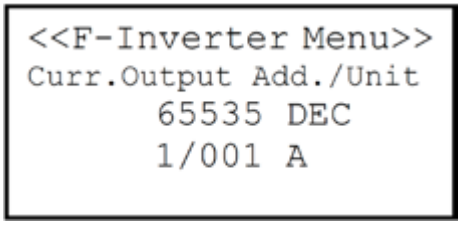
Address range: (0 ~ 65534)

Default: 65535 (This function is invalid) 65535 means the controller will not send any read/write instructions to inverter at this situation.

Unit range: (1/1,1/10,1/100)

In this screen, pressing the shift button for the first time to change the Inverter NO.

After the modification is completed, press the info button to save. Then press the shift button again to change the Inverter Mode, After the modification is completed, press the info button to save.



Parameter 3

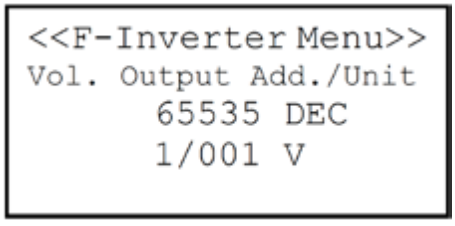
It indicates the buffer address that Inverter stores the Current Output data and the Current Output data unit.

Address range: (0 ~ 65534)

Default: 65535 (This function is invalid) 65535 means controller will not send any read/write instructions to inverter at this situation.

Unit range: (1/1,1/10,1/100)

The setting method of Address and unit refer to ***Parameter 2***.



Parameter 4

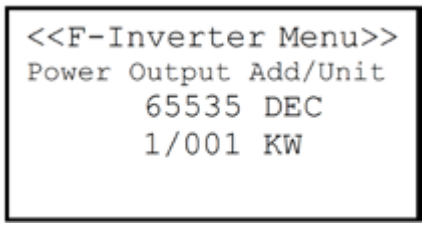
It indicates the buffer address that Inverter stores the Voltage Output data and the Voltage Output data unit.

Address range: (0 ~ 65534)

Default: 65535 (This function is invalid) 65535 means the controller will not send any read/write instructions to inverter at this situation.

Unit range: (1/1,1/10,1/100)

The setting method of Address and unit refer to ***Parameter 2***.



Parameter 5

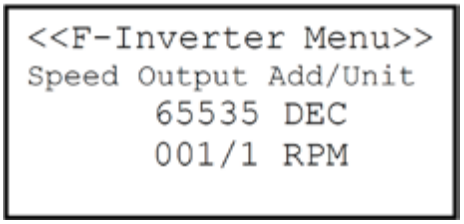
It indicates the buffer address that Inverter stores the Power Output data and the Power Output data unit.

Address range: (0 ~ 65534)

Default: 65535 (This function is invalid) 65535 means the controller will not send any read/write instructions to inverter at this situation.

Unit range: (1/1,1/10,1/100)

The setting method of Address and unit refer to ***Parameter 2***.



Parameter 6

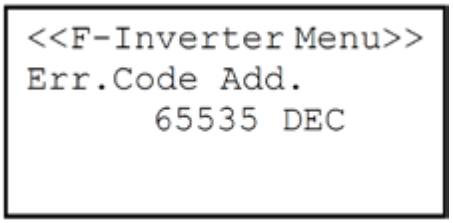
It indicates the buffer address that Inverter stores the Speed Output data and the Speed Output data unit.

Address range: (0 ~ 65534)

Default: 65535 (This function is invalid) 65535 means the controller will not send any read/write instructions to inverter at this situation.

Unit range: (1/1,1/10,1/100)

The setting method of Address and unit refer to ***Parameter 2***.



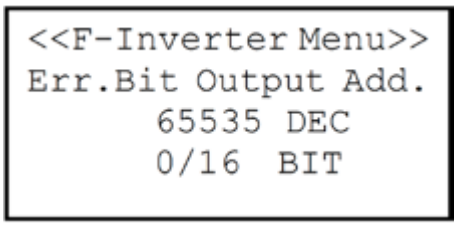
Parameter 7

It indicates the buffer address that Inverter stores the Error Code data.

Address range: (0 ~ 65534)

Default: 65535 (This function is invalid) 65535 means the controller will not send any read/write instructions to inverter at this situation.

The setting method of Address refer to ***Parameter 2***.



Parameter 8

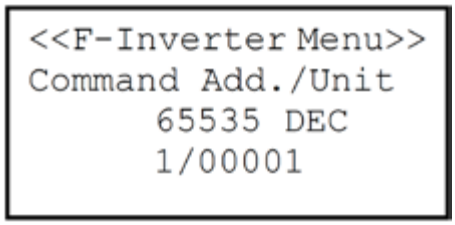
It indicates the buffer address that Inverter stores the Error Bit Output data and the Bit of Error.

Address range: (0 ~ 65534)

Default: 65535 (This function is invalid) 65535 means the controller will not send any read/write instructions to inverter at this situation.

Bit range: (0 ~ 15)

The setting method of Address and Bit refer to ***Parameter 2***.



Parameter 9

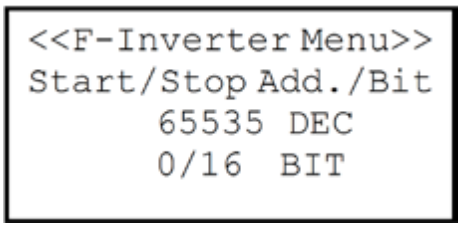
It indicates the buffer address that Inverter stores the Command data and the Command data unit.

Address range: (0 ~ 65534)

Default: 65535 (This function is invalid) 65535 means the controller will not send any read/write instructions to inverter at this situation.

Unit range: (1/1,1/10,1/100,1/1000,1/10000)

The setting method of Address and unit refer to ***Parameter 2***.



Parameter 10

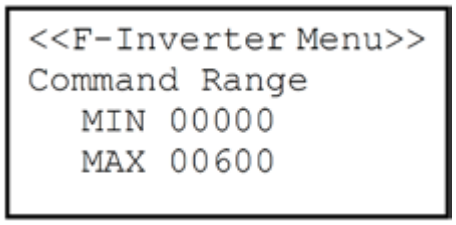
It indicates the buffer address that Inverter stores the Start/Stop data and the Bit of Start/Stop.

Address range: (0 ~ 65534)

Default: 65535 (This function is invalid) 65535 means the controller will not send any read/write instructions to inverter at this situation.

Bit range: (0 ~ 15)

The setting method of Address and Bit refer to ***Parameter 2***.



Parameter 11

The minimum and maximum value of the VFD command.

MIN range: (0 ~ 65535)

MAX range: (0 ~ 65535)

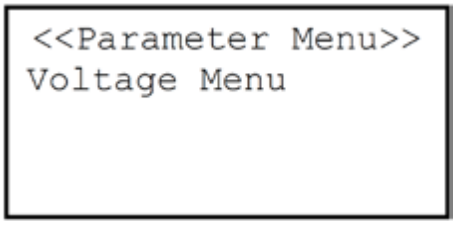
The decimal digits depend on the Command data unit (***Parameter 9***).

When the unit is 1, no decimal; When the unit is 1/10, 1 decimal places; When the unit is 1/100, 2 decimal places; When the unit is 1/1000, 3 decimal places; When the unit is 1/10000, 4 decimal places

The setting method of MIN and MAX refer to ***Parameter 2***.

3.4 - VOLTAGE PARAMETER MODIFICATION

3.4.1 - VOLTAGE MENU

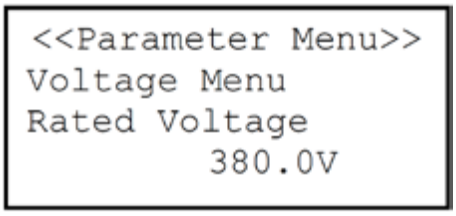


Voltage Menu

In Code menu,enter the corresponding password and press the info button to enter the Voltage Menu).

At this time, pressing the shift button to enter the Voltage option to modify related parameters.

3.4.2 - VOLTAGE PARAMETER DETAILS

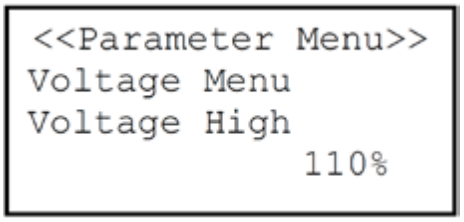


Parameter 1

This parameter defines rated voltage of the main motor .

Setting range: (90 ~ 470V),when EXT MODULE TYPE2 is set Off.

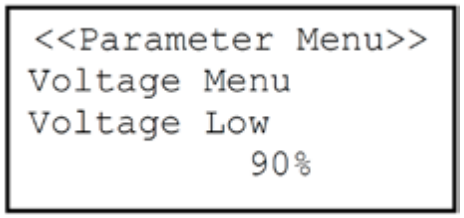
Setting range: (90 ~ 700V),when EXT MODULE TYPE2 is set ON.



Parameter 2

This parameter defines allowable highest percentage of main motor voltage.

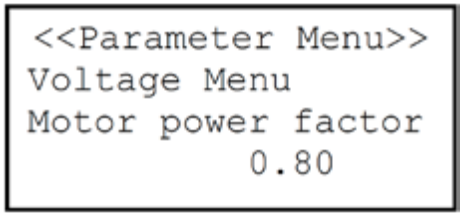
Setting range: (100 ~ 115%)



Parameter 3

This parameter defines allowable lowest percentage of main motor voltage.

Setting range: (85 ~ 100%)

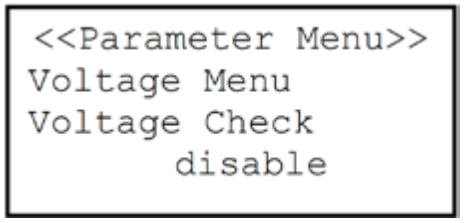


Parameter 4

This parameter defines the ratio of active power to apparent power.

Setting range: (0.70~ 1.00)

Note: The value detected by the VI board is regarded as the apparent power. The detection value of CP1300-VA expansion module is the active power. The power value from the frequency converter is the active power.



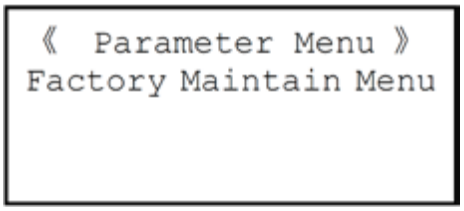
Parameter 5

This parameter defines whether to enable the voltage protection function of the main motor.

Setting range: (disable/enable)

3.5 - FACTORY MAINTAIN PARAMETER MODIFICATION

3.5.1 - FACTORY MAINTAIN MENU

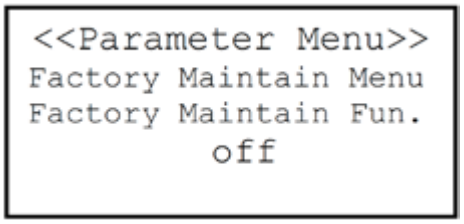


Factory Maintain Menu

In Code menu,enter the corresponding password and press the info button to enter the Factory Maintain Menu.

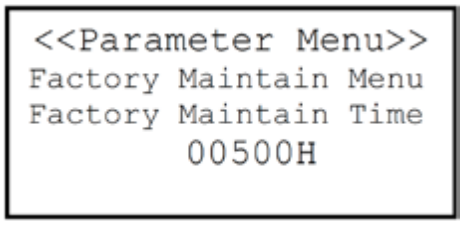
At this time, pressing the shift button to enter the Factory Maintain option to modify related parameters.

3.5.2 - FACTORY MAINTAIN PARAMETER DETAILS



Parameter 1

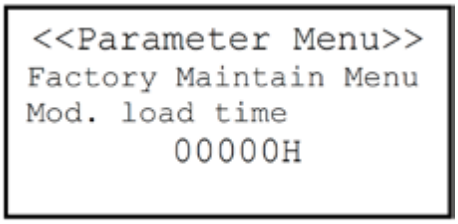
Set vendor maintenance function ON/Off.



Parameter 2

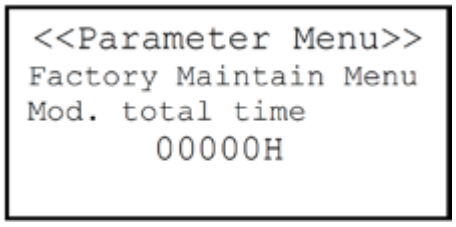
Set factory maintenance time.

When “Factory Maintain Fun.” is set “On”, the controller will display “Contact the vendor” if the factory maintain time reaches the setting value. Please contact the service personnel, and once the machine is shut down, it will not be able to be started until the Factory Maintain Time is released.



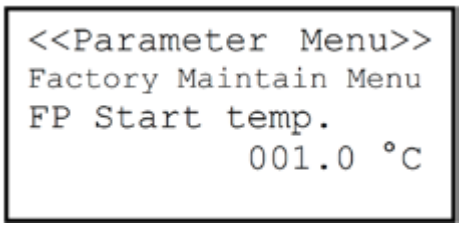
Parameter 3

Set the hours under load.



Parameter 4

Set the total operating hours.

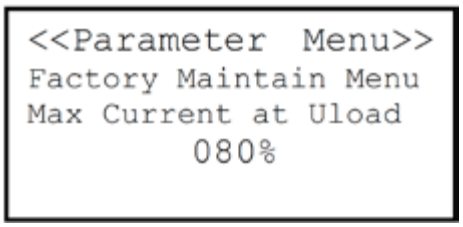


Parameter 5

This parameter defines the frost-protection temperature limit.

Setting range: (-20 ~ 1℃)

See also the parameter ***Frost Protection***.



Parameter 6

Set the maximum unloading current value.

When the “Unload Current Check” is set to "enable"and the compressor is in the idle mode, if the main motor current is greater than the "Max Current" * "Max Current at Uload" (default 80%) for 10 seconds, the controller will report a "Unload current protection" fault .

Setting range: (80 ~ 100%)

3.6 - CONTROLLER PARAMETERS SUMMARY

Pressure Menu				
Item	Sub-Menu	Range	Default	Description
1	Cut-in 1st Band	1~(2)-0.5 bar	6.0 bar	Cut-in pressure of the 1st pressure range: (1.0~Cut-out 1st Band-0.5)
2	Cut-out 1st Band	(1)+0.5~(10)-0.5 bar	7.1 bar	Cut-out pressure of the 1st pressure range: (Cut-in 1st Band+0.5~Max Pressure-0.5)
3	Cut-in 2nd Band	1~(4)-0.5 bar	6.5 bar	Cut-in pressure of the 2nd pressure range: (1.0~Cut-out 2nd Band-0.5)
4	Cut-out 2nd Band	(3)+0.5~(10)-0.5 bar	7.5 bar	Cut-out pressure of the 2nd pressure range: (Cut-in 2nd Band+0.5~Max Pressure-0.5)
5	Pressure Unit	bar/psi/MPa	bar	Pressure unit selection
6	Set Press. Bands	1st Band/2nd Band/External switch	1st Band	Pressure range selection
7	Operating Mode	Automatic/Manual	Automatic	In idle mode, compressor shuts down after “Idle time”
8	Method of Drive	Star/Delta, Direct, Inverter, Pulse	Star/Delta	Define compressor drive method
9	Sump Press Cut-In	0.30~12 bar	0.50 bar	The compressor can not be started if the sump pressure is higher than this parameter setting.
10	Max Pressure	1~ Pressure Sensor Range - 0.5 bar	9.0 bar	This parameter defines the high pressure protection value.
11	Min Pressure	0.5~4 bar	1.0 bar	This parameter defines a sump pressure minimum limit.
12	Max Press. Diff.	0.5~2.5 bar	1.2 bar	This parameter is the maximum allowable pressure difference between sump pressure and line pressure.
13	Input Pressure High	0.1~1bar	0.2 bar	Inlet pressure upper limit
14	Input Pressure Low	-1~0 bar	0.0 bar	The lower limit of the intake pressure.
15	EXT-P3 Alarm	1.0~16.0 bar	16.0 bar	EXT-P3 protection setting
16	EXT-P4 Alarm	1.0~16.0 bar	16.0 bar	EXT-P4 protection setting
17	EXT-P5 Alarm	1.0~16.0 bar	16.0 bar	EXT-P5 protection setting

Pressure-Time Menu				
Item	Sub-Menu	Range	Default	Description
1	Max Press Delay	02~20 Sec	02 Sec	This parameter defines the shut-down delay time because of high pressure.
2	Max DP Delay	02~300 Sec	90 Sec	This parameter defines the delay time for difference pressure oil separator warning.
3	Min Press Delay	02~99 Sec	30 Sec	This parameter defines the time in which the compressor has to reach a pre-set Min. pressure after the compressor starts.
4	AF DP Delay	02~300 Sec	90 Sec	This parameter defines the time-delay for Air Filter difference pressure warning.
5	OF DP Delay	02~300 Sec	90 Sec	This parameter defines the time-delay for Oil Filter difference pressure warning.
6	Delay of Oil Loss	05~90 Sec	60 Sec	This parameter defines the time-delay for oil loss fault.
7	Delay of Oil Pressure	05~90 Sec	60 Sec	This parameter defines the time-delay for lubricant oil pressure switch.

Temperature Menu				
Item	Sub-Menu	Range	Default	Description
1	Temperature Unit	℃/℉	℃	Temperature unit selection.
2	FP Stop Temp.	10~30℃	15℃	Define the warm-up temperature of frost-protection. At this temperature, the compressor will stop the heat up mode.
3	FP Mot Start Delay	02~99 Sec	03 Sec	This parameter defines the time-delay for starting the compressor at frost-protection temperature.
4	F. Temp Shutdown	85~110℃	110℃	This parameter defines the upper temperature shut-down limit.
5	F. Temp Warning	85~110℃	105℃	This parameter defines the upper temperature warning limit.
6	Frost Protection	ON/OFF	OFF	Frost protection function activation.
7	Rated Fan Control	Enable/Disable	Enable	Temperature control option for fan motor operation.
8	Fan Motor On Temp.	(9)+10~110℃	87℃	Temperature of fan motor start.
9	Fan Motor Off Temp.	25~(8)-10℃	73℃	Temperature of fan motor stop.
10	Winding Temp Alarm	90~200℃	100℃	This parameter defines the motor winding temperature alarm value.

11	Bearing Temp Alarm	50~140℃	90℃	This parameter defines the motor bearing temperature alarm value.
12	Motor Temp Alarm	50~140℃	100℃	This parameter defines the motor temperature alarm value.

Time/Date Menu				
Item	**Sub-Menu**	**Range**	**Default**	**Description**
1	Set Date		05.06	Set the current date.
2	Set Year		2022	Set the current year.
3	Set Time		09.45	Set the current time.

Motor Menu				
Item	**Sub-Menu**	**Range**	**Default**	**Description**
1	Max Current	3~800A	50A	Set allowable max. current of main motor.
2	Rated Current	3~800A	50A	Set rated current of main motor.
3	CT Rate	20~800	100/0.1	Set main motor transmission ratio of current transformer.
4	Fan Motor CT Rate	5~50/5mA	30/5mA	Set fan motor transmission ratio of current transformer.
5	Max Fan Current	1~30A	5.0A	Set maximum fan motor current.
6	Phase Monitoring	Disable/Enable	Disable	Disable/Enable Phase-Sequence protection.
7	Motor Overload Check	Disable/Enable	Disable	Disable/Enable Motor Overload Check protection.
8	Low Current Check	Disable/Enable	Disable	Disable/Enable low current protection.
9	Unload Current Check	Disable/Enable	Disable	Disable/Enable the unloading current protection function.
10	Fan Motor Overload	Disable/Enable	Disable	Disable/Enable Fan Motor Overload protection.

Motor-Time Menu				
Item	**Sub-Menu**	**Range**	**Default**	**Description**
1	Run-On Time	2~20 sec	8 Sec	This parameter defines the run-on time of the main motor before switching from star to delta.
2	Star-Delta Time	20~99 ms	20 ms	This parameter defines the star delta switch over time.

3	Min. Run Time	0~30 min	0 min	This parameter defines the minimum motor run time between motor's start and motor's stop.
4	Idle Time	0~50 min	20 min	This parameter defines the IDLE time before shut-down (idling-time).
5	Delay Power-Fail	Off, 1~60 s	15 s	This parameter defines the delayed power up time after power failure.
6	Dryer Fail Delay	0~20 min	1 min	This parameter defines the time-delay for Dryer Err warning.
7	Stop Delay	1~250 sec	15 Sec	This parameter defines the run time-delay after manual stop.
8	Load Delay	1~30 sec	3 Sec	This parameter defines the idle time between motor start-up and first load.
9	Fan Stop Delay	0~20 min	0 min	This parameter defines the fan's stop time after motor's stop.
10	Lost Water Delay	0~8 sec	5 Sec	Dehydration input signal effective delay setting.

Service Menu				
Item	**Sub-Menu**	**Range**	**Default**	**Description**
1	Motor Service	100~30000	2000 Hr	Enable/disable motor service and modify the service interval.
2	Compressor Service	100~20000	20000 Hr	Enable/disable compressor service and modify the service interval.

Service Menu				
Item	**Sub-Menu**	**Range**	**Default**	**Description**
1	Motor Service	100~30000	2000 Hr	Enable/disable motor service and modify the service interval.
2	Compressor Service	100~20000	20000 Hr	Enable/disable compressor service and modify the service interval.
3	Oil-Filter Service	100~10000	500 Hr	Enable/disable oil filter service and modify the service interval.
4	Oil Service	100~16000	500 Hr	Enable/disable belt service and modify the service interval.
5	Belt Service	100~25000	4000 Hr	Enable/disable oil fine separator service and modify the service interval.
6	Separator Service	100~10000	4000 Hr	Enable/disable air filter service and modify the service interval.

7	Air-Filter Service	100~10000	2000 Hr	Enable/disable loaded/idling Cycle counter service interval and modify the service cycles.
8	Load Cycles	10000~200000	200000	Enable/disable loaded/idling Cycle counter service interval and modify the service cycles.

Factory Menu				
Item	**Sub-Menu**	**Range**	**Default**	**Description**
1	Sump Pres Sensor	Disable/Enable	enable	Enable/disable sump pressure sensor.
2	Motor Over Time	Disable/Enable	disable	Enable/disable the Motor Overtime function.
3	Sump Temp Sensor	Disable/Enable	disable	Enable/disable sump temperature sensor.
4	Temtr. Sensor	PT100/PT1000	PT1000	Select PT100 or PT1000 sensor.
5	Line Temp Offset Cal.	90~110%	100%	Correct temperature sensor error within 10%.
6	Line Press. Cal.	90~110%	100%	Correct line pressure sensor error within 10%.
7	Sump Press. Cal.	90~110%	100%	Correct sump pressure error within 10%.
8	Sump Temp Offset Cal.	90~110%	100%	Correct can temperature sensor error within 10%.
9	CurrentA Cal.	90~110%	100%	Correct main motor Phase A current error within 10%.
10	CurrentB Cal.	90~110%	100%	Correct main motor Phase B current error within 10%.
11	Fan CurrentA Cal.	90~110%	100%	Correct fan motor Phase A current error within 10%.
12	Fan CurrentB Cal.	90~110%	100%	Correct fan motor Phase B current error within 10%.
13	VoltageA Cal.	90~110%	100%	Correct voltageA transformer measurement error within 10%.
14	VoltageB Cal.	90~110%	100%	Correct voltageB transformer measurement error within 10%.
15	Analog Output A Cal.	90~110%	100%	Analog output A calibration.
16	Analog Output B Cal.	90~110%	100%	Analog output B calibration.
17	Mod. Load Count	0~60000	0	Preset the counting of load/unload.
18	Mod. Motor Strts	0~800000	0	Preset the motor start times.
19	Pressure Sensor Range	2~25 bar	16 bar	Set pressure sensor range.

Remote Menu				
Item	Sub-Menu	Range	Default	Description
1	Remote Input Mode	On/Off	Off	Remote / Local control switches.
2	Input Reversed	0000 0000~1111 1111	0000 0000	Enable/disable the Motor Overtime function.
3	EXT Input Reversed	0000 0000~1111 1111	0000 0000	Set reverse bit of EXT input port.
4	Output Reversed	0000 0000~1111 1111	0000 0000	Set reverse bit of output port.
5	EXT Output Reversed	0000 0000~1111 1111	0000 0000	Set reverse bit of EXT output port.
6	Input Function	IN 0~7 (0~29) EXT IN 0~7	IN0:0 IN1:1 IN2:2 IN3:3 IN4:4 IN5:5 IN6:6 IN7:15	Set digital input function. Set Extended Digital input function.
7	Output Function	OUT 0~7 (0~10) EXT OUT 0~7	OUT0:3 OUT1:4 OUT2:5 OUT3:6 OUT4:7 OUT5:8 OUT6:0 OUT7:1	Set Digital output function. Set Extended Digital output function.
8	Analog Output Fun.	0~12	12	Set Analog output function.
9	Analog Input Fun.			Set Analog input function.
10	EXT MODULE TYPE1	Off/On	Off	Extended Module Type1 function Off/On.
11	EXT MODULE TYPE2	Off/On	Off	Extended Module Type2 function Off/On.
12	EXT MODULE TYPE3	Off/On	Off	Extended Module Type3 function Off/On.
13	Body Vibration Meter	Off/On	Off	Body vibration meter is activated/deactivated.
14	Motor Vibration Meter	Off/On	Off	Motor vibration meter is activated/deactivated.
15	Opt. Vibration Meter	Off/On	Off	Opt. vibration meter is activated/deactivated.
16	EXT MODLE Setup	Module station number Parameter address Parameter data		Set the module station number, parameter address and parameter data.
17	Input Delays	off~60 Sec	3 Sec	The digital input signal is ignored if it lasts less than the setting value.

18	PORT1 RS485 Address	1~127	1	Set the controller address for the RS485-1.
19	PORT1 RS485 Baud Rate	4800/9600/14400/19200 BPS	9600	Set RS485-1 Baud Rate.
20	PORT1 RS485 Error Check	EVEN/ODD/ NONE	EVEN	Set RS485-1 parity bit.
21	PORT2 RS485 Address	1~127	1	Set the controller address for the RS485-2.
22	PORT2 RS485 Baud Rate	4800/9600/14400/19200 BPS	9600	Set RS485-2 Baud Rate.
23	PORT2 RS485 Error Check	EVEN/ODD/ NONE	EVEN	Set RS485-2 parity bit.
24	Custom Comm 1	1~50	6	Set communication address 40553 dynamic optional function.
25	Custom Comm 2	1~50	6	Set communication address 40562 dynamic optional function.

Sequence Menu				
Item	**Sub-Menu**	**Range**	**Default**	**Description**
1	Remote Mode	Lead/Lag	Lag	Each unit can be sorted automatically in automatic mode via the operating time of each unit and can be sorted manually in manual mode via the unit station number.
2	Seq - Units	1~8	8	Set compressor quantity to be sequenced.
3	Seq. Load Delay	1~120 Sec	30 Sec	Set sequence control load delay.
4	Seq. Idle Delay	1~120 Sec	30 Sec	Set sequence control idle delay.
5	Seq. Change Time	0~600 Hr	100 Hr	Set the operating interval changing from a compressor to another via auto-sequencing method.
6	Seq.Sl.Strt.Del.	1~120 Sec	30 Sec	Set sequence control start interval.

Inverter Control Menu				
Item	**Sub-Menu**	**Range**	**Default**	**Description**
1	Control Pressure	Cut-in-Cut out pressure	enable	Target pressure of variable frequency control. This parameter is moved to the user parameter.
2	Motor Inverter Control	ON/OFF	OFF	Enable/disable variable frequency control.

3	Motor Inverter Param Set			Enable/disable sump temperature sensor.
4	M.Export H-Frequency	40-600Hz	60Hz	Set the corresponding frequency of the controller output 20mA current.
5	Motor High Frequency	40-600Hz	60Hz	Set allowable highest frequency of main motor working.
6	Motor Low Frequency	10~100Hz	24Hz	Set allowable lowest frequency of main motor working.
7	Fan Inverter Control	ON/OFF	OFF	Enable/disable variable frequency control of fan motor.
8	Fan Inverter Param Set			See Fan VFD parameter configuration table.
9	F.Export H-Frequency	40~400Hz	60Hz	Set the corresponding frequency of the controller output 20mA current.
10	Fan High Frequency	10~400Hz	60Hz	Set allowable highest frequency of fan motor working.
11	Fan Low Frequency	10~400Hz	24Hz	Set allowable lowest frequency of fan motor working.
12	Control Temperature	Fan Motor Off-Fan Motor On temp.	85℃	Set target temperature of fan motor variable frequency control.

Voltage Menu				
Item	**Sub-Menu**	**Range**	**Default**	**Description**
1	Rated Voltage	90~700V	380V	Set rated voltage of main motor. When "EXT MODLE TYPE2" is off, the range is 90~470V.
2	Voltage High	100~115%	110%	Set allowable highest voltage of power source.
3	Voltage Low	85~100%	90%	Set allowable lowest voltage of power source.
4	Motor Power Factor	0.70~1.00	0.80	Set the ratio of active power to apparent power.
5	Voltage Check	Disable/Enable	disable	Disable/enable Voltage Check protection.

Factory Maintain Menu				
Item	**Sub-Menu**	**Range**	**Default**	**Description**
1	Factory Maintain Fun.	Off/On	Off	Set vendor maintenance function.
2	Factory Maintain Time	0~25000Hr	500 Hr	Set vendor maintenance time.
3	Mod. Load Time	0~90000Hr	0H	Preset the operating time of loading.
4	Mod. Total Time	0~90000Hr	0H	Preset the total operating time.

5	FP Start Temp.	-20~1℃	1℃	When the temperature is lower than the setting, no start-up or activate heating function.
6	Max Current at Uload	80~100%	80%	Set the maximum unloading current value.

Vibr Menu				
Item	**Sub-Menu**	**Range**	**Default**	**Description**
1	Vibration of Body	.0~30.0 mm/s	10 mm/s	Set vibration warning value of Body.
2	Body v Delay	Off~180 Sec	120 Sec	Set the warning delay time of Body.
3	Vibration of Motor	5.0~30.0 mm/s	10 mm/s	Set vibration warning value of Motor.
4	Motor v Delay	Off~180 Sec	120 Sec	Set the warning delay time of Motor.
5	Vibration of Fan	5.0~30.0 mm/s	10 mm/s	Set vibration warning value of Fan.
6	Opt. v Delay	Off~180 Sec	120 Sec	Set the warning delay time of Opt.

3.7 - MOTOR VFD PARAMETER CONFIGURATION TABLE

Motor VFD Parameter Configuration				
1	Inverter Unit No/Mode	NO.: off~255 Mode: Controller PID/Inverter PID	off Controller PID	Set communication address of Inverter and Control mode of Inverter
2	Run Freq.Add./Unit	Add.:0~65534 Unit:1/1,1/10,1/100HZ	Add. 65535 Unit 1/1	Set the address of the buffer that stores the Run Freq. Data and the Run Freq. data unit (65535 indicates that this function is closed)
3	Curr. Output Add./Unit	Add.:0~65534 Unit:1/1,1/10,1/100A	Add. 65535 Unit 1/1	Set the address of the buffer that stores the Current Output data and the Current Output data unit (65535 indicates that this function is closed)
4	Vol. Output Add./Unit	Add.:0~65534 Unit :1/1,1/10,1/100V	Add. 65535 Unit 1/1	Set the address of the buffer that stores the Voltage Output data and the Voltage Output data unit (65535 indicates that this function is closed)
5	Power Output Add/Unit	Add. :0~65534 Unit :1/1,1/10,1/100KW	Add. 65535 Unit 1/1	Set the address of the buffer that stores the Power Output data and the Power Output data unit (65535 indicates that this function is closed)
6	Speed Output Add/Unit	Add. :0~65534 Unit :1/1,1/10,100/1RPM	Add. 65535 Unit 1/1	Set the address of the buffer that stores the Speed Output data and the Speed Output data unit (65535 indicates that this function is closed)
7	Err. Code Add.	0~65534	65535	Set the address of the buffer that stores the Error Code data (65535 indicates that this function is closed)
8	Err. Bit Output Add./Bit	Add. :0~65534 Bit: 0~15	Add. 65535 Bit 0/15	Set the address of the buffer that stores the Error Bit Output data and the Error Bit Output data Bit (65535 indicates that this function is closed)
9	Command Add./Unit	Add. :0~65534 Unit:1/1,1/10,1/100,1/1000,1/10000	Add. 65535 Unit 1/1	Set the address of the buffer that stores the Command data and the Command data unit (65535 indicates that this function is closed)
10	Start/Stop Add./Bit	Add. :0~65534 Bit:0~15	Add. 65535 Bit 0/15	Set the address of the buffer that stores the Start/Stop data and the Start/Stop data Bit (65535 indicates that this function is closed)
11	Command Range	MIN 0~65535 MAX 0~65535	MIN 0 MAX 600	Set the minimum and maximum value of the VFD to receive instruction data. (65535 indicates that this function is closed)

3.8 - FAN VFD PARAMETER CONFIGURATION TABLE

Motor VFD Parameter Configuration				
1	Inverter Unit No/Mode	NO.:off~255 Mode:Controller PID/Inverter PID	off Controller PID	Set communication address of Inverter and Control mode of Inverter.
2	Run Freq. Add./Unit	Add. :0~65534 Unit:1/1,1/10,1/100HZ	Add. 65535 Unit 1/1	Set the address of the buffer that stores the Run Freq. Data and the Run Freq. data unit (65535 indicates that this function is closed)
3	Curr. Output Add./Unit	Add. :0~65534 Unit:1/1,1/10,1/100A	Add. 65535 Unit 1/1	Set the address of the buffer that stores the Current Output data and the Current Output data unit (65535 indicates that this function is closed)
4	Vol. Output Add./Unit	Add. :0~65534 Unit :1/1,1/10,1/100V	Add. 65535 Unit 1/1	Set the address of the buffer that stores the Voltage Output data and the Voltage Output data unit (65535 indicates that this function is closed)
5	Power Output Add/Unit	Add. :0~65534 Unit :1/1,1/10,1/100KW	Add. 65535 Unit 1/1	Set the address of the buffer that stores the Power Output data and the Power Output data unit (65535 indicates that this function is closed)
6	Speed Output Add/Unit	Add. :0~65534 Unit :1/1,1/10,1/100RPM	Add. 65535 Unit 1/1	Set the address of the r buffer that stores the Speed Output data and the Speed Output data unit (65535 indicates that this function is closed)
7	Err. Code Add.	0~65534	65535	Set the address of the buffer that stores the Error Code data (65535 indicates that this function is closed)
8	Err.Bit Output Add.	Add. :0~65534 Bit:0~15	Add. 65535 Bit 0/15	Set the address of the buffer that stores the Error Bit Output data and the Error Bit Output data Bit (65535 indicates that this function is closed)
9	Command Add./Unit	Add. :0~65534 Unit: 1/1,1/10,1/100,1/1000, 1/10000	Add. 65535 Unit 1/1	Set the address of the buffer that stores the Command data and the Command data unit (65535 indicates that this function is closed)
10	Start/Stop Add./Bit	Add. :0~65534 Bit:0~15	Add. 65535 Bit 0/15	Set the address of the buffer that stores the Start/Stop data and the Start/Stop data Bit (65535 indicates that this function is closed)
11	Command Range	MIN 0~65535 MAX 0~65535	MIN 0 MAX 600	Set the minimum and maximum value of the VFD to receive instruction data. (65535 indicates that this function is closed)

APPENDIX 1 - DIGITAL INPUT FUNCTION DESCRIPTION

Motor VFD Parameter Configuration		
0	Air Filter DP	The input signal 1 is activated, "A.Filter Blocked" alerted, but not to trip.
1	Oil Filter DP	The input signal 1 is activated, "O.Filter Blocked" alerted, but not to trip.
2	Separator DP	The input signal 1 is activated, "A.O.S Blocked" alerted, but not to trip.
3	Pressure Switch	The input signal 1 is activated, the compressor unloads.
4	Emergency Stop (Normally Closed)	Emergency stop.
5	Remote Start	The input signal 1 is activated, the compressor runs in remote mode.
6	Remote Stop	The input signal 1 is activated, the compressor stops in remote mode.
7	Sump Temperature Switch	The input is signal 1 activated, "Sump Temp. High" alerted and tripped.
8	Motor Overload	The input is signal 1 activated, "Motor Overload " alerted and tripped.
9	Fan Overload	The input is signal 1 activated, "Fan Motor Overload " alerted and tripped.
10	Motor Temperature Switch	The input is signal 1 activated, "Motor Temp High" alerted and tripped.
11	Temperature Switch of Compressed Air Tank	The input is signal 1 activated, "Air Tank Temp High" alerted and tripped.
12	Inlet Pressure Switch	The input is signal 1 activated, "Input Press Err" alerted and tripped.
13	Lubricating Oil Pressure Switch	The input is signal 1 activated, "Low Oil Pressure" alerted and tripped.
14	Phase Monitoring	The input is signal 1 activated, "Phase Fault" alerted and tripped.
15	Electrical Fault	The input is signal 1 activated, "Electrical failure" alerted and tripped.
16	Dryer Fault	The input signal 1 is activated, "Dryer Err" alerted and not to trip.
17	Motor Run Feedback (Reserved)	Main motor abnormality happens, alerted and tripped.
18	Fan Run Feedback (Reserved)	Fan motor abnormality happens, alerted and tripped.
19	Low Water Level (Reserved)	The input signal 1 is activated, "Water Level Low" alerted and tripped.
20	High Water Level (Reserved)	The input is signal 1 activated, "Water Level High" alerted and not to trip.
21	Water Loss	The input signal 1 is activated, "Lost cooling water" alerted and tripped.
22	Inverter Fault	The input signal 1 is activated, "Inverter Err" alerted and tripped.
23	Water Pump Overload	The input signal 1 is activated, "Water Pump OverLoad " alerted and tripped.
24	Oil Pump Overload	The input signal 1 is activated, "Oil Pump OverLoad" alerted and tripped.
25	Soft Start Fault	The input signal 1 is activated, "Soft Start Err " alerted and tripped.
26	High Voltage Cabinet Fault	The input signal 1 is activated, "High Voltage Cabinet Fault" alerted and tripped.

27	External Switch	The input signal 1 is activated, the compressor load.
28	Oil Loss Switch	The input signal 1 is activated, "Loss of oil fault " alerted and tripped.
29	Nitrogen Generator Failure	The input signal 1 is activated, "Nitrogen Machine Falt " alerted and tripped.
30	Single Point of Remote Start-Stop	Remote control mode: input 1 air compressor runs, input 0 air compressor stops.

Note: *Not all values can be used, some applications maybe have difference.*

APPENDIX 2 - DEFAULT FUNCTION DEFINITION OF DIGITAL INPUT PORT

DEFAULT PARAMETER VALUES AND THEIR MEANINGS OF THE DIGITAL INPUT PORT

The default function definition of the controller input port and their meanings are shown in the following table. To modify the definition, please refer to ***Appendix 1***.

Input Port	Default	Meaning
In0	000	Input port 0 is defined by default as "Air Filter DP". When the input signal is 1 active, it will prompt “A.Filter Blocked”.
In1	001	Input port 1 is defined by default as "Oil Filter DP". When the input signal is 1 active, it will prompt “O.Filter Blocked”.
In2	002	Input port 2 is defined by default as "Separator DP". When the input signal is 1 active, it will prompt “A.O.S Blocked”.
In3	003	Input port 3 is defined by default as "pressure switch". The air compressor is empty when its input signal is 1 active.
In4	004	Input port 4 is defined by default as "Emergency stop".
In5	005	Input port 5 is defined by default as "remote start". The air compressor can be started in remote control mode when its input signal is 1 active.
In6	006	Input port 6 is defined by default as "remote stop". The air compressor can be turned off in remote control mode when its input signal is 1 active.
In7	015	Input port 7 is defined by default as "electrical fault". An "electrical fault" is indicated when its input signal is 1 active.
EXTIn0	007	The external input port 0 is defined by default as “Sump Temperature Switch”. When the input signal is 1 active, it will prompt “Sump Temp. High”.
EXTIn1	011	The external input port 1 is defined by default as “gas tank temperature switch”. When the input signal is 1 active, it will prompt “Air Tank Temp High”.
EXTIn2	012	The external input port 2 is defined by default as the “intake pressure switch”. When the input signal is 1 active, it will prompt “Input Pressure Err”.

EXTIn3	013	The external input port 3 is defined by default as “lubricating oil pressure switch”. When the input signal is 1 active, it will prompt “Low oil pressure”.
EXTIn4	022	The external input port 4 is defined by default as “inverter fault”. When the input signal is 1 active, it will prompt “Inverter Err”.
EXTIn5	008	The external input port 5 is defined by default as “motor overload”. "Motor overload" is indicated when its input signal is 1 active.
EXTIn6	009	The external input port 6 is defined by default as “fan overload”. When the input signal is 1 active, it will prompt “Fan Motor overload”.
EXTIn7	010	The external input port 7 is defined by default as "motor temperature switch". When the input signal is 1 active, it will prompt “High Motor Temperature”.

APPENDIX 3 - DIGITAL OUTPUT FUNCTION DESCRIPTION

Motor VFD Parameter Configuration		
0	Running Output	Motor is running.
1	Fault Output	Compressor faulted and tripped.
2	Alarm Output	Compressor alerted or service reminds.
3	M	Main contactor output.
4	D	Motor Delta contactor output.
5	S	Motor Star contactor output.
6	F	Fan contactor output.
7	DF	Load valve output.
8	Remote Control	Remote control output.
9	High Discharge Temperature	Discharge temperature too high and tripped.
10	Variable Frequency Status (Reserved)	The status output of inverter controlled.
11	Idling Output	The system is idling. Such as: 1) Output when the compressor shuts down after the "Idling time". 2) If the "Automatic restart after power outage" is activated, output during the time that has been set in the parameter "Delay power-fail" elapses after the power returns. 3) Output if the line pressure or the sump pressure is greater than the switch-on pressure (start-up safeguard)when switching on the compressor.

Note: *Not all values can be used, some applications maybe have difference.*

APPENDIX 4 - DEFAULT FUNCTION DEFINITION OF DIGITAL OUTPUT

DEFAULT PARAMETER VALUES AND THEIR MEANINGS OF THE DIGITAL OUTPUT PORT

The default function definitions and their meanings of the controller output port are shown in the following table. To modify the definition, please refer to ***Appendix 3***.

Output Port	Default	Meaning
Out 0	003	Output port 0 is defined by default as "M". Motor main contactor output when its signal is 1 active.
Out 1	004	Output port 1 is defined by default as "D". Motor triangle contactor output when its signal is 1 active.
Out 2	005	Output port 2 is defined by default as "S". Motor star contact output when its signal is 1 active.
Out 3	006	Output port 3 is defined by default as "F". Fan contactor output when its signal is 1 active.
Out 4	007	Output port 4 is defined by default as "DF" Heavy-duty solenoid valve output when its signal is 1.
Out 5	008	Output port 5 is defined by default as “remote control output”. Remote control status output when its input is 1 active.
Out 6	000	Output port 6 is defined by default as "run output". Run output when its signal is 1 active.
Out 7	001	Output port 7 is defined by default as "heavy fault output". Fault Output when its signal is 1 active.
EXTOut 0	002	The external output port 0 is defined by default as “ light fault output”. Light Fault Output when its signal is 1 active.
EXTOut 1	009	The external output port 1 is defined by default as “exhaust high temperature output”. Exhaust high temperature output when its signal is 1 active.
EXTOut 2	010	The external output port 2 is defined by default as “frequency conversion status output”. Variable frequency control status output when its signal is 1 active.
EXTOut 3	000	The external output port 3 is defined by default as “run output”. Motor running output when its signal is 1 active.
EXTOut 4	000	The external output port 4 is defined by default as “run output”. Motor running output when its signal is 1 active.
EXTOut 5	000	The external output port 5 is defined by default as “run output”. Motor running output when its signal is 1 active.
EXTOut 6	000	The external output port 6 is defined by default as “run output”. Motor running output when its signal is 1 active.
EXTOut 7	000	The external output port 7 is defined by default as “run output”. Motor running output when its signal is 1 active.

APPENDIX 5 - ANALOG INPUT FUNCTION DESCRIPTION

EXT-P1	Intake Pressure	After the EXT-P1 is set “ON”, you can view the intake pressure value.
EXT-P2	A Section of Exhaust Pressure	After the EXT-P2 is set “ON”, you can view the 1st exhaust pressure value.
EXT-P3	Reserved	After the EXT-P3 is set “ON”, you can view EXT-P3 pressure value.
EXT-P4	Reserved	After the EXT-P4 is set “ON”, you can view EXT-P4 pressure value.
EXT-P5	Reserved	After the EXT-P5 is set “ON”, you can view EXT-P5 pressure value.
EXT-T1	Internal Motor Temperature	After the EXT-T1 is set “ON”, you can view the internal temperature of the motor.
EXT-T2	1st Exhaust Temperature	After the EXT-T2 is set “ON”, you can view the 1st exhaust temperature value.
EXT-T3	Motor Bearing Temperature	After the EXT-T3 is set “ON”, you can view the motor bearing temperature value.
EXT-T4	Motor Winding Temperature	After the EXT-T4 is set “ON”, you can view the motor winding temperature value.

APPENDIX 6 - DEFAULT FUNCTION DEFINITION OF ANALOG INPUT PORT

DEFAULT PARAMETER VALUES AND THEIR MEANINGS OF THE ANALOG INPUT PORT

As shown in the following table, you can view the default function definition of the controller analog input port and their meanings. These definitions cannot be changed. You can only select its status to be on/off.

Analog Input	Default	Features
EXT-P1	Intake Pressure	After the EXT-P1 set “ON”, you can view the intake pressure value.
EXT-P2	A Section of Exhaust Pressure	After the EXT-P2 is set “ON”, you can view the 1st exhaust pressure value.
EXT-P3	Reserved	After the EXT-P3 is set “ON”, you can view EXT-P3 pressure value.
EXT-P4	Reserved	After the EXT-P4 is set “ON”, you can view EXT-P4 pressure value.
EXT-P5	Reserved	After the EXT-P5 is set “ON”, you can view EXT-P5 pressure value.
EXT-T1	Internal Motor Temperature	After the EXT-T1 set “ON”, you can view the internal temperature of the motor.
EXT-T2	Exhaust Temperature	After the EXT-T2 set “ON”, you can view the 1st exhaust temperature value.
EXT-T3	Motor Bearing Temperature	After the EXT-T3 set “ON”, you can view the motor bearing temperature value.
EXT-T4	Motor Winding Temperature	After the EXT-T4 set “ON”, you can view the motor winding temperature value.

APPENDIX 7 - ANALOG OUTPUT FUNCTION DESCRIPTION

0	Discharge Temperature	0-200℃
1	Reserved	
2	Line Pressure	0 - Sensor maximum range.
3	Sump Pressure	0 - Sensor maximum range.
4	Phase R of Motor Current	0 - Current transformer maximum range.
5	Motor Voltage	0- Voltage transformer maximum range.
6	Variable Frequency of Motor	Directly regulate motor speed of rotation by inverter.
7	Target Pressure	0 - Sensor measurement range.
8	Phase T of Motor Current	0 - Current transformer maximum range.
9	Variable Frequency of Fan	Directly regulate fan speed of rotation by inverter.
10	Phase R of Fan Current	0 - Current transformer maximum range.
11	Phase T of Fan Current	0 - Current transformer maximum range.
12	Variable Frequency Method Compliant with SE	Pressure output of original SE method.
Note: *Not all values can be used, some applications maybe have difference.*		

APPENDIX 8 - DEFAULT FUNCTION DEFINITION OF ANALOG OUTPUT PORT

DEFAULT PARAMETER VALUES AND THEIR MEANINGS OF THE ANALOG OUTPUT PORT

The default function definition of the controller analog output port and their meanings are shown in the following table. To modify these definitions, please refer to ***Appendix 7***.

Analog Output	Default	Meaning
Out 0	012	The analog output port 0 is defined by default as “compatible SE mode motor frequency conversion”. When the signal is 1 active, the original SE controller mode variable voltage output.
Out 1	001	Reserved
EXTOut 0	000	The external analog output port 0 is defined by default as “exhaust gas temperature”. Range: 0~200 ° C

APPENDIX 9 - EXPANSION MODULE MANUAL SETTING PARAMETER COMPARISON TABLE

Motor VFD Parameter Configuration					
Module Station Number	Parameter Name	Parameter Setting Content	Parameter Address	Parameter Content (Default)	Parameter Content (Actual Value)
12	Intake Pressure	Slope Calibration Value	4613	01000	It is normal for the actual value of some parameter contents to have a slight difference between the actual value and the default value. (The expansion module will do some calibration work at the factory, so the actual value of some parameter contents will be different from the default value, and will not affect the normal use of the expansion module.)
		Sensor Range (Molecular)	4614	16000	
	A Section of Exhaust Pressure	Slope Calibration Value	4645	01000	
		Sensor Range (Molecular)	4646	16000	
	EXT-P3	Slope Calibration Value	4677	01000	
		Sensor Range (Molecular)	4678	16000	
	EXT-P4	Slope Calibration Value	4709	01000	
		Sensor Range (Molecular)	4710	16000	
	EXT-P5	Slope Calibration Value	4741	01000	
		Sensor Range (Molecular)	4742	16000	
	Internal Motor Temperature	Reference Calibration	4772	00000	
		Sensor Range (Molecular)	4773	01000	
	1st Exhaust Temperature	Reference Calibration	4804	00000	
		Sensor Calibration (Molecular)	4805	01000	
	Motor Bearing Temperature	Reference Calibration	4836	00000	
		Sensor Calibration (Molecular)	4837	01000	
	Motor Winding Temperature	Reference Calibration	4868	00000	
		Sensor Calibration (Molecular)	4869	01000	

Motor VFD Parameter Configuration					
Module Station Number	Parameter Name	Parameter Setting Content	Parameter Address	Parameter Content (Default)	Parameter Content (Actual Value)
8	Motor current A phase	Slope Calibration Value	4613	01000	It is normal for the actual value of some parameter contents to have a slight difference between the actual value and the default value. (The expansion module will do some calibration work at the factory, so the actual value of some parameter contents will be different from the default value, and will not affect the normal use of the expansion module.)
		Primary Side (Molecular)	4614	01000	
		Secondary Side (Denominator)	4615	01000	
	Motor current C phase	Slope Calibration Value	4645	01000	
		Primary Side (Molecular)	4646	01000	
		Secondary Side (Denominator)	4647	01000	
	Fan Current A Phase	Slope Calibration Value	4677	01000	
		Primary Side (Molecular)	4678	00020	
		Secondary Side (Denominator)	4679	00120	
	Fan Current C Phase	Slope Calibration Value	4709	01000	
		Primary Side (Molecular)	4710	00020	
		Secondary Side (Denominator)	4711	00120	
	Motor Voltage RS Phase	Slope Calibration Value	4741	01000	
	Motor Voltage ST Phase	Slope Calibration Value	4773	01000	

APPENDIX 10 - WARNING/FAULT LIST

Item	Warning/Fault	Description	Action
0	Air-filter Service	Air filter used time reaches a preset value, remind user to replace air filter.	Alert, Not Trip
1	A.Filter Blocked	An input port function defined as 0 is active, remind Air Filter DP.	Alert, Not Trip
2	Oil-filter Service	Oil filter used time reaches a preset value, remind user to replace oil filter.	Alert, Not Trip
3	O.Filter Blocked	An input port function defined as 1 is active, remind Oil Filter DP.	Alert, Not Trip
4	Separator Service	Oil fine separator used time reaches a preset value, remind user to replace the separator.	Alert, Not Trip
5	A.O.S Blocked	An input port function defined as 2 is active or when compressor is loading, the difference of sump pressure and line pressure exceeds a preset value (sump pressure sensor is enabled and line pressure > 5.5 bar).	Alert, Not Trip
6	Oil Service	Lube used time reaches a preset value, remind user to replace lube.	Alert, Not Trip
7	Discharge Temp. High	The discharge temperature is above a preset warning value.	Alert, Not Trip
8	Ambient TempLow	The ambient temperature inside the controller is below 5℃.	Alert, Not Trip
9	Ambient TempHigh	The ambient temperature inside the controller is above 65℃.	Alert, Not Trip
10	Motor Grease	The grease used time of motor bearing reaches a preset value, remind user to replace the grease.	Alert, Not Trip
11	Belt Service	The belt used time reaches a preset value, remind user to replace the belt.	Alert, Not Trip
12	Compressor Service	The compressor service time reaches a preset value, remind user to service it.	Alert, Not Trip
13	Remaining Times	The Load/no-load switch times reaches a preset value, remind user to service it.	Alert, Not Trip
14	Dryer Err	An input port function defined as 16 is active, which means the dryer fault.	Alert, Not Trip
15	M-Inverter Com.Err	Error in communication with motor inverter. See Note.	Alert, Not Trip
16	F-Inverter Com.Err	Error in communication with Fan inverter. See Note.	Alert, Not Trip
17	Discharge Temp. High	The discharge temperature is above a preset trip limit.	Alert, Not Trip
18	Line Pressure High	The line pressure is above Max Pressure value.	Alert, Not Trip
19	Temp. Sensor Error	The air end temperature sensor whose wire is broken, short-circuited or unfixed	Alert, Not Trip
20	Linepress Sensor Err	The line pressure sensor whose wire is broken, short-circuited or unfixed.	Alert and Trip

21	Motor Overload	An input port function defined as 8 is active or the motor current thermal accumulation exceeds normal range (relevant with the parameter setting of rated current).	Alert and Trip
22	Fan Motor Overload	An input port function defined as 9 is active or the fan current thermal accumulation exceeds normal range (relevant with the parameter setting of rated current).	Alert and Trip
23	Lost Cooling Water	An input port function defined as 21 is active.	Alert and Trip
24	Phase Fault	An input port function defined as 14 is active or phase sequence detecting circuit determines open-phase or phase reversal.	Alert and Trip
25	Room Temperature Low	The discharge temperature is below a preset lower limit.	Alert and Trip
26	Voltage High	The bus voltage is greater than voltage high value.	Alert and Trip
27	Voltage Low	The bus voltage is less than voltage low value.	Alert and Trip
28	Sump Temp. High	An input port function defined as 7 is active.	Alert and Trip
29	Sump Pressure High	The sump pressure is above Max Pressure value.	Alert and Trip
30	Sumppress Sensor Err	The sump pressure sensor short-circuited, unfixed or wire-broken.	Alert and Trip
31	Sump Press. Err	The System pressure can not rise to greater than Min Pressure value within the “Min Press Delay” time after the compressor starts.	Alert and Trip
32	Electrical Failure	An input port function defined as 15 is active.	Alert and Trip
33	Water Level Low (Reserved)	An input bit whose function is programmed as 19 is active.	Alert and Trip
34	Air Tank Temp High	An input port function defined as 11 is active.	Alert and Trip
35	Low Oil Pressure	An input port function defined as 13 is active.	Alert and Trip
36	Input Pressure Err	An input port function defined as 12 is active. /The input pressure is higher than the upper limit of the input pressure or lower than the lower limit of the input pressure.	Alert and Trip
37	Inverter Err	An input port function defined as 22 is active.	Alert and Trip
38	Water Pump OverLoad	An input port function defined as 23 is active.	Alert and Trip
39	Oil Pump OverLoad	An input port function defined as 24 is active.	Alert and Trip
40	Soft Start Err	An input port function defined as 25 is active.	Alert and Trip
41	Motor Temp High	An input port function defined as 10 is active./ The motor temperature is higher than the motor alarm temperature.	Alarm Offload and Not Trip
42	Low Current Check	The main motor current is less than 5% of the maximum current when the air compressor is running.	Alert And Trip
43	Unloading Current Check	The main motor current is greater than a preset percentage of Max Current in the unloaded state.	Alert And Trip
44	Loss of Oil Fault	An input port function defined as 28 is active.	Alert And Trip

45	Nitrogen Machine Falt	An input port function defined as 29 is active.	Alert, Not Trip
46	Vibration of Body X	When the vibration value of the X direction of the body reaches the setting vibration warning value for at least the setting delay time.	Alert, Not Trip
47	Vibration of Body Y	When the vibration value of the Y direction of the body reaches the setting vibration warning value for at least the setting delay time.	Alert, Not Trip
48	Vibration of Body Z	When the vibration value of the Z direction of the body reaches the setting vibration warning value for at least the setting delay time.	Alert, Not Trip
49	Vibration of Motor X	When the vibration value of the X direction of the motor reaches the setting vibration warning value for at least the setting delay time.	Alert, Not Trip
50	Vibration of Motor Y	When the vibration value of the Y direction of the motor reaches the setting vibration warning value for at least the setting delay time.	Alert, Not Trip
51	Vibration of Motor Z	When the vibration value of the Z direction of the motor reaches the setting vibration warning value for at least the setting delay time.	Alert, Not Trip
52	Vibration of Fan X	When the vibration value of the X direction of the fan reaches the setting vibration warning value for at least the setting delay time.	Alert, Not Trip
53	Vibration of Fan Y	When the vibration value of the Y direction of the fan reaches the setting vibration warning value for at least the setting delay time.	Alert, Not Trip
54	Vibration of Fan Z	When the vibration value of the Z direction of the fan reaches the setting vibration warning value for at least the setting delay time.	Alert, Not Trip
55	Body Vibration Meter	The communication wire breakage between the controller and the Body vibration meter or the Body vibration meter no reply.	Alert, Not Trip
56	Motor Vibration Meter	The communication wire breakage between the controller and the Motor vibration meter or the Motor vibration meter no reply.	Alert, Not Trip
57	Fan Vibration Meter	The communication wire breakage between the controller and the Fan vibration meter or the Fan vibration meter no reply.	Alert and Trip
58	Winding Temp. High	Winding temperature is higher than the alarm value of the motor winding temperature.	Alert and Trip
59	Bearing Temp. High	Bearing temperature is higher than the alarm value of the motor bearing temperature.	Alert and Trip
60	Bearing Temp Err	The bearing temperature sensor is disconnected or short-circuited or not installed.	Alert and Trip
61	Winding Temp Err	Winding temperature sensor is disconnected or short-circuited and not installed.	Alert and Trip
62	First Temp Err	The first temperature sensor is disconnected or short-circuited or not installed.	Alert and Trip
63	Motor Temp Err	The motor temperature sensor is disconnected or short-circuited and not installed.	Alert and Trip
64	Temp High	The first temperature is higher than the exhaust temperature trip value.	Alert and Trip

65	Input Press Err	The input pressure sensor is disconnected or short-circuited or not installed.	Alert and Trip
66	First Press Err	The first pressure sensor is disconnected or short-circuited or not installed.	Alert and Trip
67	EXT-P3 Press Err	The EXT-P3 pressure sensor is disconnected or short-circuited or not installed.	Alert and Trip
68	EXT-P4 Press Err	The EXT-P4 pressure sensor is disconnected or short-circuited or not installed.	Alert and Trip
69	EXT-P5 Press Err	The EXT-P5 pressure sensor is disconnected or short-circuited or not installed.	Alert and Trip
70	Press High	The first pressure is above Max Pressure value.	Alert and Trip
71	EXT-P3 Alarm	EXT-P3 is higher than EXT-P3 protection value.	Alert and Trip
72	EXT-P4 Alarm	EXT-P4 is higher than EXT-P4 protection value.	Alert and Trip
73	EXT-P5 Alarm	EXT-P5 is higher than EXT-P5 protection value.	Alert and Trip
74	EXT MODULE Alarm	The controller does not detect the expansion module (TYPE1/TYPE2/ TYPE3).	Alert and Trip

Note: *The controller will start to detect the communication with the inverter after 25 seconds delay after power on or emergency stop reset. If the inverter can not establish communication with the inverter for 15 seconds, it will report the fault of "M-Inverter Com.Err" or "M-Inverter Com.Err".*

CONTINUED COMMITMENT

A company history that dates 170 years is a company history that, to us, is just the beginning. FS-Curtis is committed to offering a world-class portfolio of products. Through the dependability of our people and our quality-focused manufacturing, FS-Curtis will continue to be the most trusted and dependable name in compressed air serving even more markets through our ever-growing global presence.

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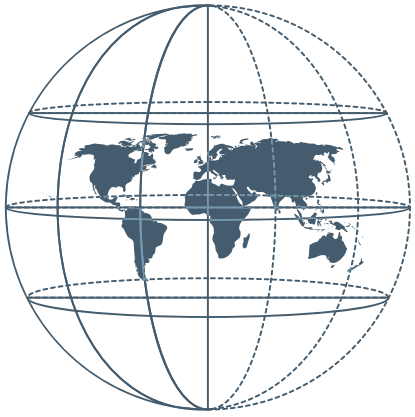

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