INVERTER-PUMPENSTEUERUNG
0,75kW - 7,5kW
PARAMETER SETTING-FEHLERCODES

GB   OPERATING INSTRUCTIONS

D   BEDIENUNGSANLEITUNG

Design parameter(*) table (AC inverter series) for

INVERTER-Pumpensteuerung 2
0,75KW 230V/1*230/V-verkabelt &
1,1KW 230V/3*230V, verkabelt (IPC-2-V)

INVERTER-Pumpensteuerung 3
2,2KW 230V IN/3*230V OUT, verkabelt &
1,5KW 230V/1*230V, verkabelt (IPC-3-V)

INVERTER-Pumpensteuerung 5
2,2KW 400V IN/400V OUT, verkabelt &
5,5KW 400V/400V, verkabelt &
7,5KW 400V/400V verkabelt

(*)Ab Produktionsdatum 1.8.21 sind Anderungen vorgenommen worden. Die neue Softwareversion wird durch das Flackern der Code-Anzeige signalisiert
(*)Changes have been made as of production date 1.8.21. The new software version is signalled by the flickering of the code display

1.

DE

Im Stopmodus (Pumpe läuft nicht) bitte die Tasten „hoch" und „runter" gleichzeitig drücken und 1sec lang halten. Das Gerät schaltet automatisch in den „Setting" Modus um. Mit der Taste „run" bestätigen Sie den ausgewählten Wert und speichern ihn. Mit der Taste „Stop" schalten Sie die unterschiedlichen Funktions-Ebenen, wobei die angewählten Werte automatisch gespeichert werden und das Gerät nach 5 sec in den höheren Level zurück schaltet.

UK

In the stop state, press the <up> and <down> keys at the same time and hold for 1 second to automatically enter the parameter setting, Press the run key to confirm and save the parameters, The stop key is used for the displacement function, and it will automatically save and return after 5 seconds Upper-level menu.

ES

En el estado de parada, pulse las teclas <arriba> y <abajo> al mismo tiempo y manténgalas pulsadas durante 1 segundo para entrar automáticamente en el ajuste de parámetros, Pulse la tecla de marcha para confirmar y guardar los parámetros, La tecla de parada se utiliza para la función de desplazamiento, y se guardará automáticamente y volverá después de 5 segundos Menú de nivel superior.

IT

Nello stato di arresto, premere contemporaneamente i tasti <su> e <giù> e tenerli premuti per 1 secondo per accedere automaticamente all'impostazione dei parametri, Premere il tasto di marcia per confermare e salvare i parametri, Il tasto di arresto viene utilizzato per la funzione di spostamento e viene salvato automaticamente e ritorna dopo 5 secondi Menu di livello superiore.

2.

DE

Wenn 5 sec lang das Gerät nicht bedient wird, schaltet das Gerät automatisch in den nächst höheren Level.

UK

If no operation is performed, the system automatically saves the current parameters and automatically returns to the upper menu after 5 seconds.

ES

Si no se realiza ninguna operación, el sistema guarda automáticamente los parámetros actuales y vuelve automáticamente al menú superior después de 5 segundos.

IT

Se non viene eseguita alcuna operazione, il sistema salva automaticamente i parametri correnti e torna automaticamente al menu superiore dopo 5 secondi.

3.

DE
Nur die mit „d" gekennzeichnete Parametergruppe wird benötigt, wenn das Gerät sich im Arbeitsstatus befindet. (Running-Status= Ruhemodus/Pumpe läuft nicht). Zunächst können die „F"-Parameter angewählt und geändert werden, danach die „d"-Parameter.

UK
Only the d parameter group is required in working or running state. (The running state is the same as the stop state, first enter the F parameter group, and then enter the d parameter group)

ES
Sólo se requiere el grupo de parámetros d en estado de trabajo o de funcionamiento.
(El estado de funcionamiento es el mismo que el estado de parada, primero se introduce el grupo de parámetros F y luego el grupo de parámetros d).

IT
Solo il gruppo di parametri d è necessario nello stato di lavoro o di funzionamento. (
Lo stato di funzionamento è identico allo stato di arresto; inserire prima il gruppo di parametri F e poi il gruppo di parametri d).

4.

DE
Tastenbedienung: Kurzes Drücken bewirkt schrittweise langsame Veränderung der Werte.
Längeres Drücken bewirkt eine schnellere Veränderung der Werte.

UK
Key operation: touch to increase or decrease in the smallest unit, Long press to increase or decrease quickly.

ES
Funcionamiento de las teclas: tocar para aumentar o disminuir en la unidad más pequeña,
pulsar prolongadamente para aumentar o disminuir rápidamente.

IT
Funzionamento dei tasti: toccare per aumentare o diminuire nell'unità più piccola, premere a lungo per aumentare o diminuire rapidamente.

5.

DE
Nach Anschluss des Drucksensors wird die Konstantdruckregelung automatisch realisiert. (Wenn F0-14=0, ist die Voreinstellung der Konstantspannungsmodus. Nach der Lauferkennung meldet kein Sensor einen Fehler und es wird in den Drehzahlregelungsmodus umgeschaltet. Nach Anschluss des Sensors, Aus- und Wiedereinschalten; wenn F0-14=1, ist er auf den Drehzahlregelungsmodus fixiert, AI1 Analogeingang kann als Frequenzquelle angegeben werden (F0-15=1)

UK
After the pressure sensor is connected, the constant pressure control is automatically realized. (When F0-14=0, the default is constant voltage mode. After running detection, no sensor reports an error and it will switch to speed control mode. After connecting the sensor, power off and on again; when F0-14=1, it is fixed to speed control mode, AI1 Analog input can be given as frequency source (F0-15=1)

ES
Después de conectar el sensor de presión, el control de presión constante se realiza automáticamente. (Cuando F0-14=0, el valor por defecto es el modo de tensión constante. Después de la detección de funcionamiento, ningún sensor informa de un error y cambiará al modo de control de velocidad. Después de conectar el sensor, se apaga y se enciende de nuevo; cuando F0-14=1, se fija el modo de control de velocidad, la entrada analógica AI1 se puede dar como fuente de frecuencia (F0-15=1)

IT
Dopo il collegamento del sensore di pressione, il controllo della pressione costante viene realizzato automaticamente. (Quando F0-14=0, l'impostazione predefinita è la modalità a tensione costante. Dopo il rilevamento del funzionamento, nessun sensore segnala un errore e si passa alla modalità di controllo della velocità. Dopo aver collegato il sensore, spegnere e riaccendere il dispositivo; quando F0-14=1, la modalità di controllo della velocità è fissa, l'ingresso analogico AI1 può essere utilizzato come sorgente di frequenza (F0-15=1).

6.

DE
Sensorloser Schutz, Unterspannung, Überspannung, Übertemperatur und Phasenausfallschutz können durch einmaliges Drücken der Lauftaste aufgehoben werden, der Werkswert kann nach der Initialisierung wiederhergestellt werden. (Melden Sie einen Fehler direkt, drücken Sie die Stopptaste, um den Fehler zurückzusetzen, keine Löschschutzfunktion)

UK
Sensorless protection, undervoltage, overvoltage, overtemperature, and phase loss protection can be cancelled by pressing the run key once, The factory value can be restored after initialization. (Report an error directly, press the stop button to reset the fault, no cancellation protection function)

ES
La protección sin sensor, la subtensión, la sobretensión, la sobretemperatura y la protección por pérdida de fase pueden cancelarse pulsando una vez la tecla de marcha, El valor de fábrica puede restablecerse tras la inicialización. (Informar directamente de un error, pulsar el botón de parada para restablecer el fallo, no hay función de protección de cancelación)

IT
La protezione sensorless, la protezione da sottotensione, sovratensione, sovratemperatura e perdita di fase possono essere annullate premendo una volta il tasto di marcia, il valore di fabbrica può essere ripristinato dopo l'inizializzazione. (Segnalare direttamente un errore, premere il tasto di arresto per ripristinare il guasto, nessuna funzione di protezione di annullamento).

220VAC/380VAC inverter parameter design value

			F0:Water pump control parameter group				
No.	**Display code**	**Function definition**	**Predetermined area**			**Smallest unit**	**Annotation**
			Minimum value	**Maximum value**	**Factory setting**		
1	F0-00	Starting pressure difference	0,1	Set*0.9	0,5	0.1bar	Unit: BAR, the maximum can be adjusted to 90% of the set pressure value
2	F0-01	Water shortage pressure value	F0-21	Set*0.9	0,5	0.1bar	Unit: BAR, the maximum can be adjusted to 90% of the set pressure value, 0 means to close the water shortage protection
3	F0-02	Water shortage running time	1	600	30	1S	Unit: Second (S)
4	F0-03	Allowable shutdown disturbance range	0,0	10,0	0,4	0,1	Note: It is only allowed to modify this parameter during shutdown.
5	F0-04	Sensor range selection	1,0	60,0	10,0	0.1bar	0.75-2.2KW
					16,0	0.1bar	>2.2KW
6	F0-05	Allowable minimum set pressure value	0,1	F0-06	0,5	0.1bar	Unit: BAR (the maximum value that can be reached by pressing the key), the default is 0.5
7	F0-06	Allowable maximum set pressure value	F0-05	(F0-04)-1.0	9,0	0.1bar	Unit: BAR (the maximum value that can be reached by pressing the up button), the maximum range value -1
8	F0-07	Whether to allow adjustment of set pressure	0	1	1	1	0: Not allowed 1: Allowed
9	F0-08	Minimum stop frequency value	0,00	F1-04	25,00	0.01HZ	The grid frequency is 50HZ
			0,00	F1-04	25,00		The grid frequency is 60HZ
10	F0-09	PID acceleration factor	1	99	20	1	The larger the value, the faster the acceleration
11	F0-10	PID deceleration factor	1	99	20	1	The larger the value, the faster the deceleration
12	F0-11	Whether to allow downtime	0	2	2	1	0: Stopping is not allowed (decelerate and keep running at the stop frequency); 1: Stop allowed; 2: Zero frequency operation
13	F0-12	Reset	0	1	0	1	1: Restore the factory default parameters;
14	F0-13	Water pump anti-sticking start time	0	72	24	1	Unit: hour (reserved)
15	F0-14	Working mode selection	0	1	0		0: Constant voltage mode 1. Speed regulation mode (requires shutdown to modify)
16	F0-15	Speed control mode frequency source selection	0	2	0	1	0: Digital setting 1 (the ▲ and ▼ keys on the operation panel can be modified) 1: AI1 analog (0~20mA/0~10V) 2: Communication setting

17	F0-16	AI1 input lower limit	0,00	10,00	2,00	0.01V	The upper and lower limits of AI1 vary with the values of F0-14 and F0-23; when F0-14=1, F0-16=0, F0-18=10; when F0-14=0, if F0-23=0, then F0-16=2, F0-18=10, if F0-23=1, then F0-16=0, F0-18=10.
18	F0-17	AI1 lower limit corresponding setting			0,0%	0,1%	
19	F0-18	AI1 input upper limit	0,00	10,00	10,00	0.01V	
20	F0-19	AI1 upper limit corresponding setting				0,1%	
21	F0-20	Sleep delay	0.0	100.0	1.0	0.1s	
22	F0-21	PID disconnection protection threshold	0	F0-01	0,3	0.1bar	
23	F0-22	PID disconnection detection delay	0	100	10	0.1s	
24	F0-23	Sensor type selection	0	1	0	1	0: Current sensor (4-20mA); 1: Voltage sensor (0-10V)

F1:Motor parameter group

No.	Display code	Function definition	Predetermined area			Smallest unit	Annotation
			Minimum value	Maximum value	Factory setting		
1	F1-00	Set the direction of motor rotation	0	1	0	1	0: Forward rotation; 1: Reverse rotation;
2	F1-01	Carrier frequency	2	20	7,5 / 4,5 / 3 / 2	0.1KHZ	≤3.7KW / 5.5KW~30KW / 37KW~132KW / >132KW
3	F1-02	acceleration time	0,1	60	7,5 / 15 / 30 / 60	0.1s	≤3.7KW / 5.5KW~30KW / 37KW~132KW / >132KW
4	F1-03	deceleration time	0,1	60	7,5 / 15 / 30 / 60	0.1s	≤3.7KW / 5.5KW~30KW / 37KW~132KW / >132KW
5	F1-04	Output frequency value	20,0	300,0	50,0	0.1HZ	The grid frequency is 50HZ (the hardware does not support automatic identification of the grid frequency)
			20,0	300,0	60,0		The grid frequency is 60HZ (the hardware does not support automatic identification of the grid frequency)
6		Motor rated current value	0,1	Model setting	Model setting	0,1A	
7	F1-06	Motor no-load current		Model setting	Model setting	0,1A	
8	F1-07	Motor rated voltage		Model setting	Model setting	1V	
9	F1-08	Allow the motor to run continuously for time	0	255	0		Unit: hour, 0 means to cancel the operating time limit, allowing long-term operation
10	F1-09	Vibration suppression coefficient	0	10	1	0,01	When the motor oscillates, the oscillation suppression coefficient is adjusted to suppress the oscillation. When it is set to 0, the oscillation suppression function is turned off.

F2:Protection parameters

No.	Display code	Function definition	Predetermined area			Smallest unit	Annotation
			Minimum value	Maximum value	Factory setting		
1	F2-00	220VAC: Manual setting of operating undervolta	FF-03	280	230	1V	L means cancel the under-voltage setting
		380VAC: Manual setting of operating undervoltage value	FF-03	480	410	1V	L means cancel the under-voltage setting
2	F2-01	220VAC: manual setting of overvoltage value	350	450	400	1V	H means cancel overvoltage setting
		380VAC: manual setting of overvoltage value	550	900	800	1V	L means cancel the under-voltage setting
3	F2-02	Radiator temperature	60	104	80	1°C	H means cancel over temperature setting
4	F2-03	Over temperature protection setting (reserved)	60	H	80	1°C	If it exceeds 100, it will display H, H means cancel over temperature setting
5	F2-04	220/380V three inputs and three outputs: input and output phase failure protection options	0	3	3		0: All prohibited 1: Input prohibited, output allowed 2: Input allowed, output prohibited 3: Both allowed
6	F2-05	Input and output phase loss protection delay time (reserved)	0,0	30,0	1,0	0.1S	Reserve
7	F2-06	Overload protection factor	30 %	120 %	100 %	1 %	
8	F2-07	Antifreeze protection running time	0	255	0	1min	
9	F2-08	Antifreeze protection operating frequency	0	F1-04	30	1	
10	F2-09	Antifreeze protection action interval time	0	255	0	1min	
11	F2-10	Overwater pressure alarm threshold	F2-12	100 %	100 %	0,10 %	Relative to the sensor range
12	F2-11	Over water pressure alarm delay	0	6553,5	1.0	0.1s	
13	F2-12	Overwater pressure reset threshold	0	F2-10	90 %	0,1%	Relative to the sensor range

14	F2-13	Protection settings	0x0000	0x1131	0x1101	1	LED units: Motor overload protection selection 0: Invalid 1: Valid LED tens: 485 communication timeout processing 0: No protection 1: Protection action and free stop 2: Alarm but keep the status quo running 3: Alarm and stop according to the set method LED hundreds: running under voltage protection 0: Invalid 1: Valid LED thousands: over voltage protection 0: Invalid 1: Valid

			Predetermined area				
No.	**Display code**	**Function definition**	**Minimum value**	**Maximum value**	**Factory setting**	**Smallest unit**	**Annotation**
F3:RS485 communication parameters							
1	F3-00	Online function	0	1	0		0: On-line function is invalid (stand-alone mode); 1: On-line function is valid (online mode) (need to stop and modify)
2	F3-01	Pump delay time	0,1	100,0	1,0	0.1S	
3	F3-02	Decrease pump delay time	0,1	100,0	1,0	0.1S	
4	F3-03	Reduce the lower limit frequency of the pump	1	F1-04	35	0.01HZ	
5	F3-04	Local address (online)	1	16	1		
6	F3-05	Round Robin Time (online)	0	255	48	1H	Unit: 1 hour (invalid for stand-alone)
7	F3-06	Run command channel selection	0	1	0		0: Operation panel running command channel; 1: 485 communication control
8	F3-07	Local address	0	247	1	1	
9	F3-08	Communication baud rate setting	0	6	2	1	0: 2400 BPS; 1: 4800 BPS; 2: 9600 BPS; 3: 19200 bps; 4: 38400 bps; 5: 57600 bps; 6: 115200bps
10	F3-09	Data Format	0	5	0	1	0: No parity (N, 8, 1) for RTU, 1: Even parity (E, 8, 1) for RTU, 2: Odd parity (0, 8, 1) for RTU, 3: No parity (N, 8, 2) for RTU; 4: Even parity (E, 8, 2) for RTU; 5: Odd parity (0, 8, 2) for RTU
11	F3-10	Local answer delay	0	200	5	1ms	

12	F3-11	Communication timeout detection time	0,1	100	10	0.1s	If the machine does not receive the correct data signal within the time interval defined by this function code, then the machine thinks that the communication has failed, and the inverter will determine whether to protect or maintain the current operation according to the setting of the communication failure action mode
13	F3-12	Communication protocol selection	0	1	0	0	0: Compatible with MD380 protocol 1: Compatible with Delta M protocol

FF group: manufacturer parameters

No.	Display code	Function definition	Predetermined area			Smallest unit	Annotation
			Minimum value	Maximum value	Factory setting		
1	FF-00	Factory password	0	65535	0	1	The password is set successfully, it takes 3 minutes to take effect
2	FF-01	Inverter model	0	53	28	1	**220V**: **0** 0.4KW **1** 0.75KW **2** 1.5KW **3** 2.2KW **4** 3.0KW **5** 4.0KW **6** 5.5KW **7** 7.5KW **8** 11KW **9** 15KW **10** 18.5KW **11** 22KW **12** 30KW **13** 37KW **14** 45KW **15** 55KW **16** 75KW **17** 90KW **18** 110KW **19** 132KW **20** 160KW **380V**: **21** 0.4KW **22** 0.75KW **23** 1.5KW **24** 2.2KW **25** 3.0KW **26** 4.0KW **27** 5.5KW **28** 7.5KW **29** 11KW **30** 15KW **31** 18.5KW **32** 22KW **33** 30KW **34** 37KW **35** 45KW **36** 55KW **37** 75KW **38** 90KW **39** 110KW **40** 132KW **41** 160KW **42** 185KW **43** 200KW **44** 220KW **45** 250KW **46** 280KW **47** 315KW **48** 350KW **49** 375KW **50** 400KW **51** 500KW **52** 630KW **53** 750KW
3	FF-02	Dead time	2,5	6,5	Model setting	0.1μS	Set dead time 0.4-4.0KW 2.8μS 5.5-750KW 3.2μS
4	FF-03	Underpressure threshold	50	F2-00	Model setting	1v	Below display P.OFF. 220V model: the default value is 180V; 380V model: the default value is 360V
5	FF-04	Voltage correction factor	0,01	3	Model setting	0,01	Set voltage correction coefficient
6	FF-05	Current correction factor	0,01	3	Model setting	0,01	Set current correction coefficient
7	FF-06	Temperature detection method selection	0	1	0	1	0: type (sensor connected to power supply) 1: Type (sensor grounding)
8	FF-07	Reserve					
9	FF-08	Reserve					
10	FF-09	Special function selection	0x0000	0x0121	0x0100	0	LED units: clear selection of accumulated running time 0: invalid 1: Effective LED ten digits: model selection 0: General purpose model (G) 1: Light load model (P) 2: Heavy-duty model (Z) Hundreds of LEDs: reserved Thousands of LEDs: reserved

Group d: monitoring parameters and fault records

No.	Display code	Function definition	Predetermined area			Smallest unit	Annotation
			Minimum value	Maximum value	Factory setting		
1	d-00	Output frequency				0.01Hz	
2	d-01	Set frequency				0.01Hz	
3	d-02	The output voltage				1V	
4	d-03	Bus voltage (V)				1V	
5	d-04	Output current				0.1A	
6	d-05	Motor speed (RPM/min)				1	
7	d-06	Analog input AI1 (V/mA)				0.01V	
8	d-07	Analog input AI2 (V)				0.01V	(Reserve)
9	d-08	PID setting value (Bar)				0.1Bar	
10	d-09	PID feedback value (Bar)				0.1Bar	
11	d-10	Input terminal status	0x0000	0x003f			(Reserve)
12	d-11	Output terminal status	0x0000	0x000f			(Reserve)
13	d-12	Inverter running status	0x0000	0xFFFF			0:FFFFH BIT 0: run/stop BIT 1: forward/reverse BIT 2: Jog BIT 3: DC braking BIT 4: reserved BIT 5: Overvoltage limit BIT 6: Constant speed frequency reduction BIT 7: Overcurrent limit BIT 8~9:00-zero speed/01-acceleration/10-deceleration/11-uniform speed BIT 10: Overload pre-alarm BIT 11: reserved BIT 12~13 run command channel: 00-panel/01-communication/10-reserved BIT 14~15 bus voltage status: 00-normal/01-low voltage protection/10-overvoltage protection

14	d-13	Module tempera-ture °C					
15	d-14	Software upgrade date (year)					
16	d-15	Software upgrade date (month, day)					
17	d-16	Type of third failure					
18	d-17	Type of second failure					
19	d-18	Type of last failure					
20	d-19	Operating fre-quency at current fault					
21	d-20	Output current at current fault					
22	d-21	Bus voltage at current fault					
23	d-22	Input terminal status at current fault					(Reserve)
24	d-23	Output terminal status at current fault					(Reserve)
25	d-24	Inverter status at current fault					0+FFFFH BIT0: run/stop BIT1: forward/reverse BIT2: Jog BIT3: DC braking BIT4: reserved BIT5: Overvoltage limit BIT6: Constant speed frequency reduction BIT7: Overcurrent limit BIT8~9:00-zero speed/01-acceleration/10-deceleration/11-uniform speed BIT10: Overload pre-alarm BIT11: reserved BIT12~13 run command channel: 00-panel/01-communication/10-reserved BIT14~15 bus voltage status: 00-normal/01-low voltage protection/10-overvoltage protection
26	d-25	The temperature at the time of the current fault					

27	d-26	Cumulative running time of the machine (hours)					
28	d-27	Accumulated power-on time of the machine (hours)					
29	d-28	Fan cumulative running time (hours)					

Display code and description

NO.	Error code	Code function description	Faults and solutions
1	E0C1	Overcurrent during accelerated operation	
2	E0C2	Overcurrent during deceleration operation	
3	E0C3	Overcurrent in uniform operation	
4	EHU1	Overvoltage during accelerated operation	
5	EHU2	Overvoltage during deceleration	
6	EHU3	Overpressure in uniform operation	
7	EHU4	Overvoltage during shutdown	
8	ELU0	Undervoltage during operation	
9	ESC1	Power module failure	
10	E-OH	Radiator overheated	
11	EOL1	Inverter overload	
12	EOL2	Inverter overload	
13	ECPU	CPU failure	
14	EPID	PID feedback disconnection (sensor failure)	
15	E485	RS485 communication failure	
16	ECCF	Current detection failure	
17	EEEP	EEPROM read and write error	
18	EPLI	Phase loss on the input side	
19	EPLO	Phase loss on the output side	
20	E-LP	Water shortage	
21	A-16	485 communication timeout alarm	

22	A-17	No host	
23	A-18	No chance	
24	A-19	Duplicate address	
25	A-20	Water pressure warning	
26	E-EF	External device failure	
27	(Reserve) ETUN	Burst pipe	
28	E-LT	Running time arrived	

Imprint/Impressum