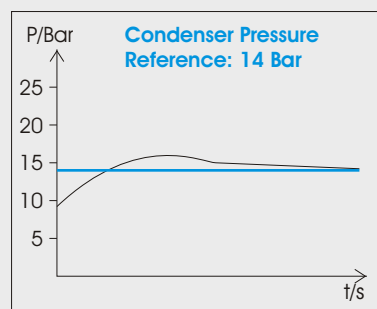
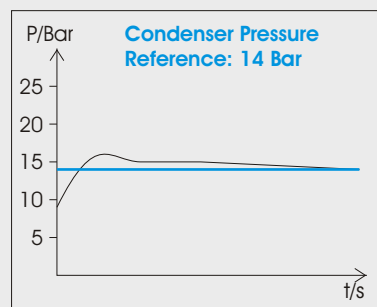
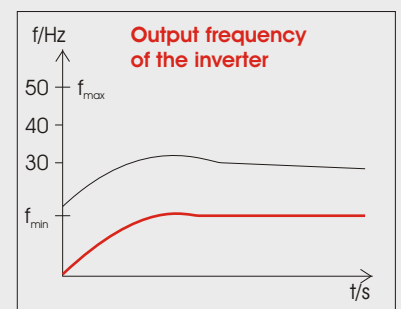


Frequency Inverter YASKAWA E7 - Series

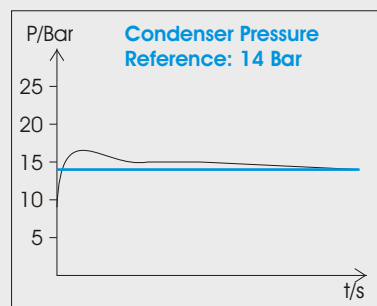
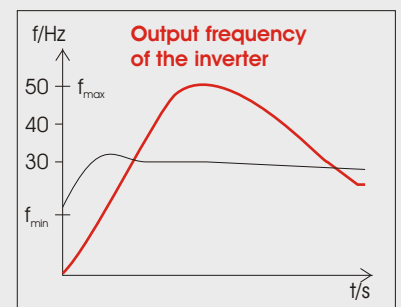
Short Menu Software for Condenser fan application



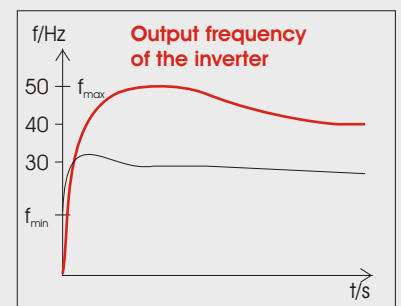
Condenser "ON" at low ambient temperatures.



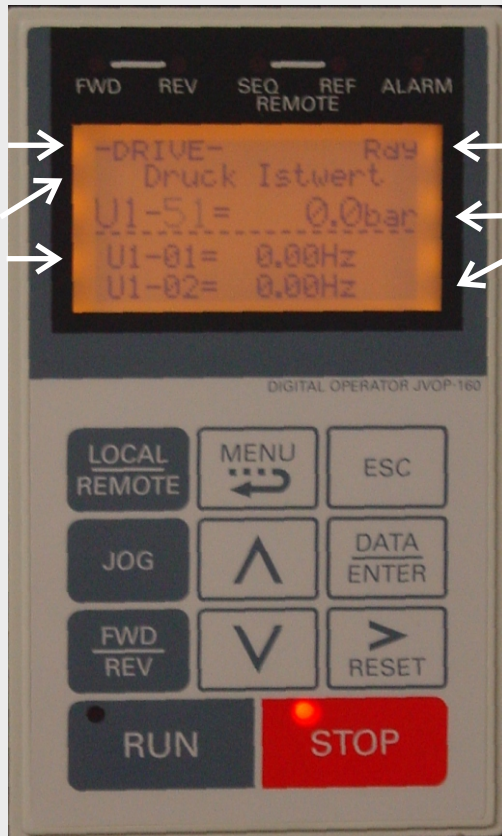
Condenser "ON" at normal ambient temperatures.



Condenser "ON" at high ambient temperatures.



Digital Operator Display



Text display

- Line 1 Left Corner "DRIVE" is lit
The inverter is in DRIVE mode.
- Line 2 Text description of the parameter indicated in line 3
- Line 4 Reference frequency in Hz

- Line 1 Right Corner Rdy is lit:
Rdy = Ready
- Line 3 Parameter No: Displays the feedback value in "Bar".
- Line 5 Displays the output frequency

MENU Key
Pressing the MENU Key changes the mode:

- > Drive mode
- > Quick Programming mode
- > Advanced Programming mode
- > Modified Constants
- > Auto-Tuning

DATA / ENTER Key
Pressing the DATA / ENTER Key is used to enter the menus:

- > Access to operation data
- > Access to quick programming mode
- > Access to all parameters
- > Access to all modified parameters
- > Access to auto tuning mode

UP Key
Increment - Key
Selects user constant numbers
Increments setting values

DOWN Key
Decrement - Key
Selects user constant numbers
Decrements setting values

RESET Key
Shift/Reset Key
Sets the no. of digits
Acts as the RESET-key

ESC Key
Returns to the status before
DATA/ENTER key was pressed

LOCAL/REMOTE Key
LOCAL: Operation via Operator
REMOTE: Operation via terminals

JOG Key
Enables jog operation if the inverter is controlled by the operator

FWD/REV Key
Selects the rotation direction
when the motor is controlled via Operator

RUN Key
Starts the inverter via
Operator

STOP Key
Stops inverter operation
with the operator

Operation Example:

Changing the reference in screen P1-03
from a pressure setpoint of 12,0 Bar to 14,0 Bar

Press key until this text will be displayed:

MENU Key
Advanced Programming Mode

Remarks:
Enables Access to all
Parameter

DATA / ENTER Key

The left two characters of the parameter no.
are blinking.

DOWN Key
P1-01
minTransducer

P1- is blinking
Parameter group P1 is now active.

RESET Key
P1-01
minTransmitter

01- is blinking
Parameter P1-01 is now active.
(E.g. Low pressure setpoint of the transducer)

UP Key
P1-03
Pressure reference

03- is blinking
Parameter P1-03 is now active.

DATA / ENTER Key

12.0 is blinking (default value)
P1-03 displays the value of this parameter
(e.g. pressure reference in "Bar")

UP Key
14.0
Pressure-reference

The value can be changed by pressing
the increment, decrement or shift key
as per the example.

DATA / ENTER Key
P1 - 03 14.0 Bar
New pressure reference

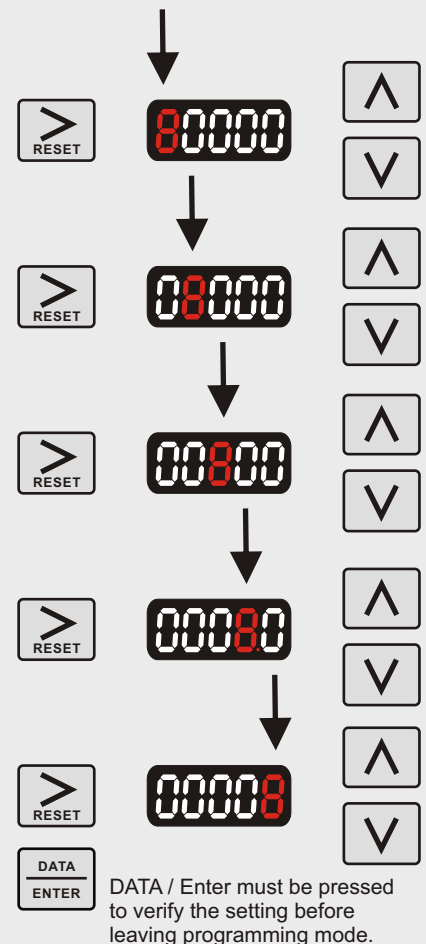
Reference has been changed.
To start the inverter it is necessary
to select the "Drive" menu.

MENU Key
Drive

Changes the menu by pressing
the "MENU" key.

DATA / ENTER Key
Druck Istwert
U1-51 = XX.X Bar

The value is depending on the
system pressure.



Short discription of the most useful parameters.

Parameter No.:	Default value:	Range: min. max.	Change during Operation Yes/No	Manual Page:	Parameter name:
A1-03	0	0 9999	N	P. 5.43	

Parameter MENU:- ADVANCED PROGRAMMING
Select Parameter group with inc. / dec. key.




 **RESET** Changes to the individual parameter
 
 Selects parameter

A1-03	0	0 3330	N	P. 5-7	Initialize to factory settings	Mode: 2220 sets the inverter back to factory settings.
B1-01	5	0 5	N	P. 6-4	Reference selection	Sets the reference input method; 0=Operator; 1=Terminals 2=Comms; 3=Option-PCB; 5=Case-Software (Value in Bar)
B1-02	5	0 5	N	P. 6-8	Operation method selection	Set the run command input method: 0=Operator; 1=Terminals; 2,3=Comms; 5=Case-Software (Auto-Switch-Off)
B1-03	1	0 3	N	P. 6-10	Stopping method selection	Used to set the stopping method: 0=deceleration to stop; 1=Coast to stop; 2= DC-Injection brake stop; 3=delay stop
B5-01	1	0 3	N	P. 6-64	PI control mode selection	Mode: 0=Disabled (Off); 1=Enabled (On)
B5-02	18	000 2500	Y	P. 6-64	Proportional gain (P)	Sets the proportional gain as a factor from 0.00 to 25.00. P-control is not active when the setting is 0.00.
B5-03	3	00 3600	Y	P. 6-64	Integral - time (I)	Sets the integral time (I) in 1s steps from 0.0 to 360.0s. I-control is not active whenn the setting is 0.00.
B5-09	1	0 1	N	P. 6-64	PI-Output characteristic	PI output characteristic : 0=output is positive; 1=output is negative (Reference increases --> output frequency increases)
C1-01	3	00 6000	Y	P. 6-15	Acceleration-time 1	Sets the acceleration time to accelerate from 0 Hz to the max. output frequency. C1-02 sets the deceleration time.
D2-02	250	0 100	N	P. 6-24	Frequency reference lower limit	Sets the output frequency lower limit as a percentage of the max. output frequency.
E1-01	480	310 510	N	P. 6-72	Input voltage setting	Sets the inverter input voltage. This setting is used as a reference value in protection functions.
E1-03	6	0 F	N	P. 6-72	V/f - pattern selection	Modus 6 = 60Hz, Variable torque Modus 5 = 50Hz, Variable torque
E2-01	4	05 106	N	P. 6-71	Motor rated current	These values will become the reference values for motor protection, torque limits and torque control.
H3-09	6	0 6	N	P. 6-65	Function Analog Input A2	Mode "b" fixes analogue Input A2 as a reference source of the PI control..
L5-01	10	0 10	Y	P.6-41	Number of Auto-Restarts	Automatically restarts after a supply fault occurs. The counter is reset once normal operation has continued for 10 Minutes.
L5-03	1	05 180	Y	P.6-41	Fault retry time	Sets the time after the inverter restarts once a fault has occurred.
P1-01	00	00 500	N	CASE	Transducer range low pressure	Indicates the min. pressure level of the transducer (e.g. 4_20mA = 0 to 30 Bar: min. level is 0.0 Bar)
P1-02	300	00 500	N	CASE	Transducer range high pressure	Indicates the max. pressure level of the transducer (e.g. 4_20mA = 0 to 30 Bar: max. level is 30.0 Bar)
P1-03	140	00 500	N	CASE	Pressure reference	Determines the pressure level setpoint of the condenser. Pressure level unit is "Bar".
P1-04	130	00 300	N	CASE	Pressure sleep level	If the pressure feedback level is below this value, inverter should go to sleep mode. This function is off when 0.0 is set.I
P1-05	0	0 3000	N	CASE	Pressure sleep start delay time	Determines a delay time for the sleep function in P01-04. This mode is active if the level is less than P01-04 within this time.
P1-06	05	00 100	N	CASE	Pressure on - hysteresis	Determines the pressure difference to re-start the inverter from sleep mode. (E.g: P01-04=10Bar/P01-06=5Bar: On level=15Bar.
P1-07	0	00 3000	N	CASE	Pressure start delay time	Determines a delay time for the re-start function in P01-06.
P2-01	160	50 250	N	CASE	Pressure level "Summer"	If the feedback level has exceeded this value, "Summer" settings will be active for the time adjusted in P2-04 during power on.
P2-02	800	000 2500	Y	CASE	Proportional gain (P) "Sommer"	Proportional gain "Summer", if the pressure feedback level is exceeding the level adjusted in P2-01 during power on.
P2-03	05	00 3600	Y	CASE	Integral time (I) "Summer"	Integral time "Summer", if the pressure feedback level is exceeding the level adjusted in P2-01 during power on.
P2-04	100	00 600	Y	CASE	"Summer" start time	Determines the time after power on where as "Summer" PI-control is active.
P3-01	20	000 1500	N	CASE	Pressure level "Winter"	If the feedback level has below this value, "Winter" settings will be active for the time adjusted in P3-04 during power on.
P3-02	10	000 2500	Y	CASE	Proportional gain (P) "Winter"	Proportional gain "Winter", if the pressure feedback level is below the level adjusted in P3-01 during power on.
P3-03	50	00 3600	Y	CASE	Integral time (I) "Winter"	Integral time "Winter", if the pressure feedback level is below the level adjusted in P3-01 during power on.
P3-04	50	00 6000	Y	CASE	"Winter" start time	Determines the time after power on where as "Winter" PI-control is active.

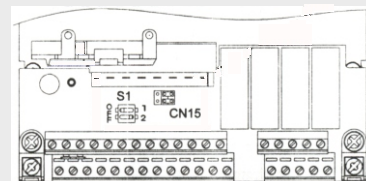
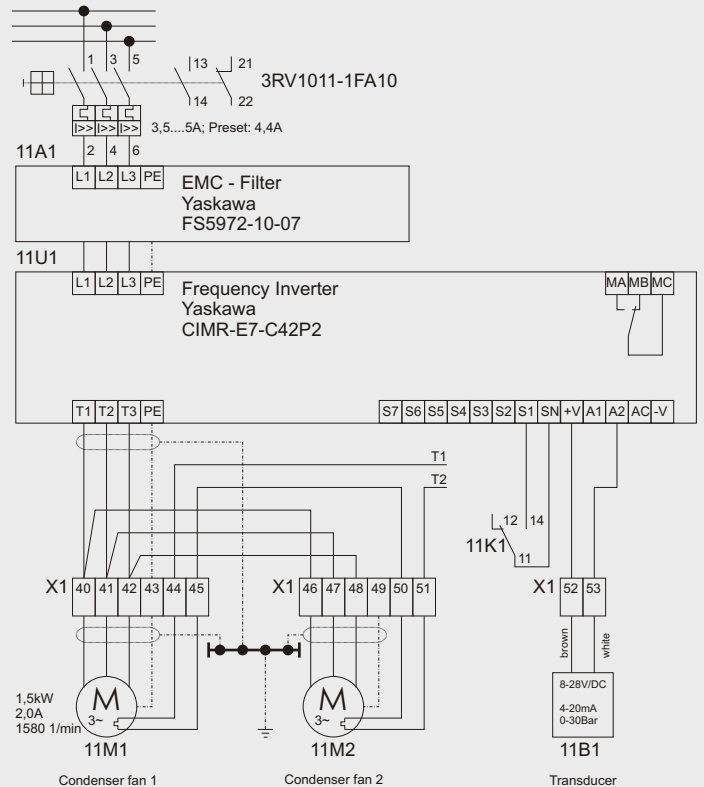
Frequency inverter: Yaskawa CIMR E7C42P2

Specification:

Input ratings
 Rated supply voltage
 Rated supply frequency:
 Output ratings
 Recommended motor power:
 Rated output capacity:
 Rated output current:
 Max. output current:
 Max. output frequency:
 Control characteristics
 Control method:
 Speed controm range:
 Frequency accuracy:
 Frequency setting signal:
 Acc.- Deceleration time:
 V/Hz - Pattern:
 Protective functions
 Motor protection:
 Overload protection:
 Overvoltage protection
 Undervoltage protection:
 Power loss ride through:
 Heatsink temperature:
 Stall prevention:
 Earth fault protection:
 In- and Outputs
 Digital Inputs:
 Digital Outputs:
 Analogue Inputs:
 Analogue Outputs:
 Digital Operator
 LCD Display:
 Enviroment
 Ambient operating temperature:
 Storage temperature:

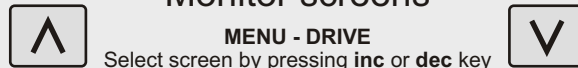
Data:

380 - 480 V/AC -15/+10%
 50 - 60 Hz +/-5%
 2,2 kW
 4 kVA
 5,3 A
 6,4 A
 120 Hz
 Sine wave PWM
 1:40
 +/- 2%
 4-20 mA (250 Ohm); 0-10 V (20 kOhm)
 0,01 - 6000 s
 Free programmable
 Thermal electronic algorithmm
 120% rated current for 60s
 Trips at 820V/DC
 Trips at 268V/AC
 for < 2 s
 Thermistor protected
 During acceleration, Decelerationand
 while running
 By electronic circuits
 7, 5 free programmable
 3, 2 free programmable
 2, 0-10 V - 4-20 mA free programmable
 2, 0-10 V - 4-20 mA free programmable
 Textdisplay, 5-lines; 9 keys
 -10 - +40°C at rated load
 -10 - +60°C ati 80% rated load = 4 A
 -20 - + 60°C





S1: DIP-Switch 1.2:
 I = Analogue Input A2 4-20mA
 (= Default)
 V = Analogue Input A2 0-10V

Monitor screens



Select screen by pressing **inc** or **dec** key

Refer to page 5-36 for further information and more details.

- | | | | |
|---|--|---|---|
| U1-01 Frequency-reference | Displays the calculated value for the frequency reference in Hz | U1-13 Operation time | Monitors the total operation time of the inverter. |
| U1-02 Output frequency | Displays the output frequency in Hz. Scaling can be adjusted in o1-03. | U1-14 Software-No. | Shows manufacturers ID-No... |
| U1-03 Output current | Displays the output current in A. | U1-16 Terminal A2 Input level | Displays the level at terminal A2 in percent. 100% = 10V/DC |
| U1-06 Output voltage | Displays the output voltage in V. | U1-24 PI-Feedback value | Monitors the feedback value when PI-control is used |
| U1-07 DC-Bus voltage | Displays the DC-Bus voltage in V. Mains voltage = U/DC * 1,414 | U1-36 PI-input volume | PI- feedback volume, given as max. frequency is 100%. |
| U1-08 Ausgangsleistung | Display the output power in kW (internal detected value). | U1-37 PI-output volume | PI control output, given as max. frequency = 100% |
| U1-10 Input terminals | Monitors the status of the digital input terminals:
 Signal has been detected on Input S1
All other inputs are not in use or off. | U1-38 PI-command | PI command + PI command bias given as max. frequency = 100% |
| U1-09 Output terminals | Monitors the status of the digital output terminals:
 Fault relay MA/MB-MC is indicating
M1/M2 Relay is on; M3/M4 Relay is off | U1-50 PI-pressure referene | Displays the pressure reference in "Bar". |
| | | U1-51 PI-pressure feedback | Displays the pressure feedback value in "Bar". |

Caution:

This short menu does not act as a replacement of the original manual No.: YEG-TOE-S616-56.1. All adjustment were made as a conclusion of various field tests and the results of these adjustments. Due to local environmental changes some or other constant differs from the original values.
 Revision: 24. August 2003 Rev A2; SF_E7_PED7_E_A4.CDR