

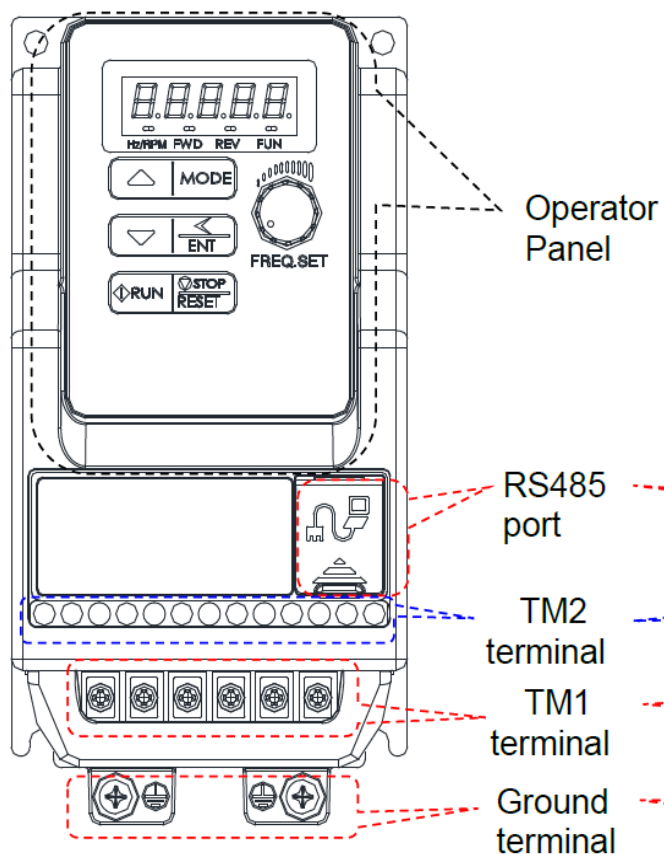
Manual kortfattet for BDI50

Generell info om BDI50

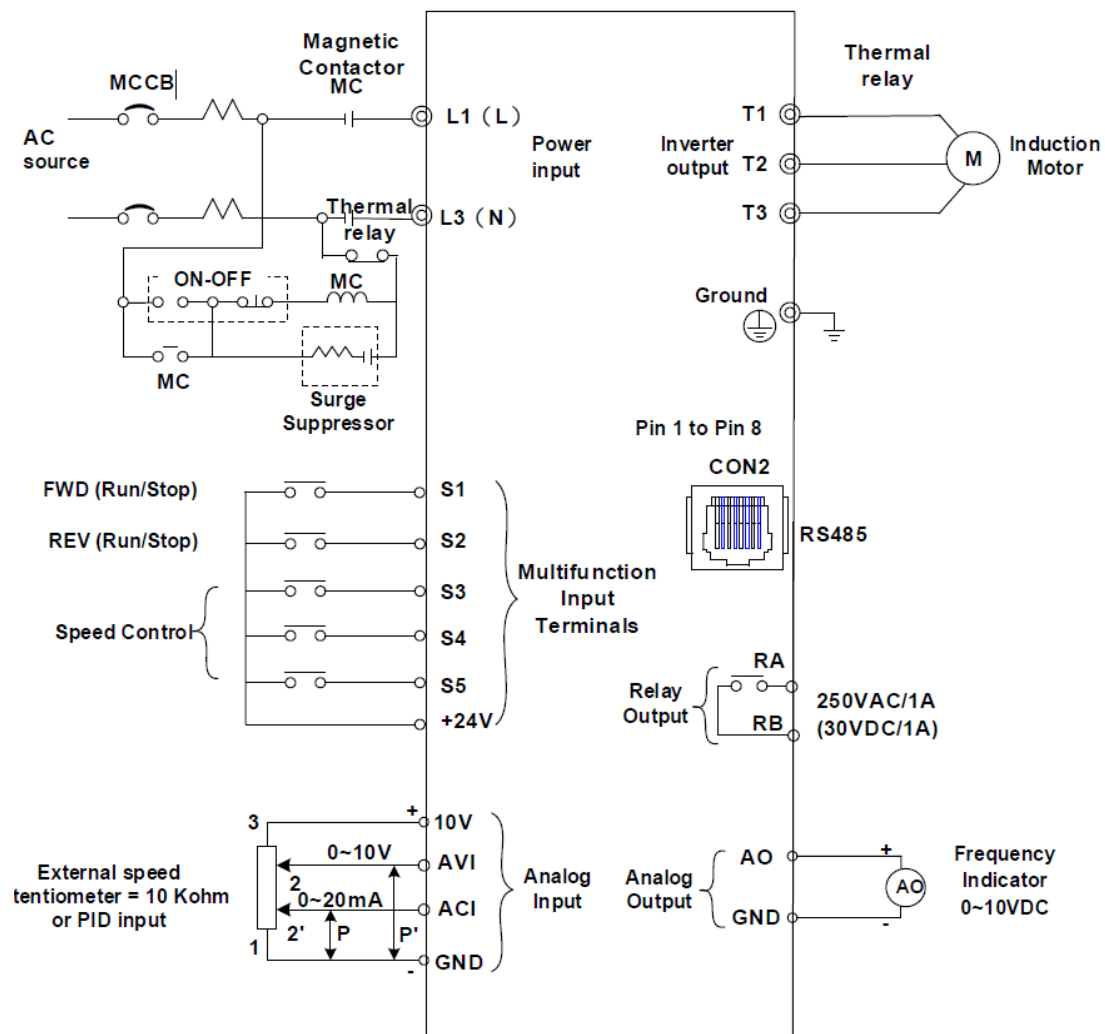
Alle parameterforslag er basert på at BDI er satt til fabrikkinnstillinger.

Tegninger -

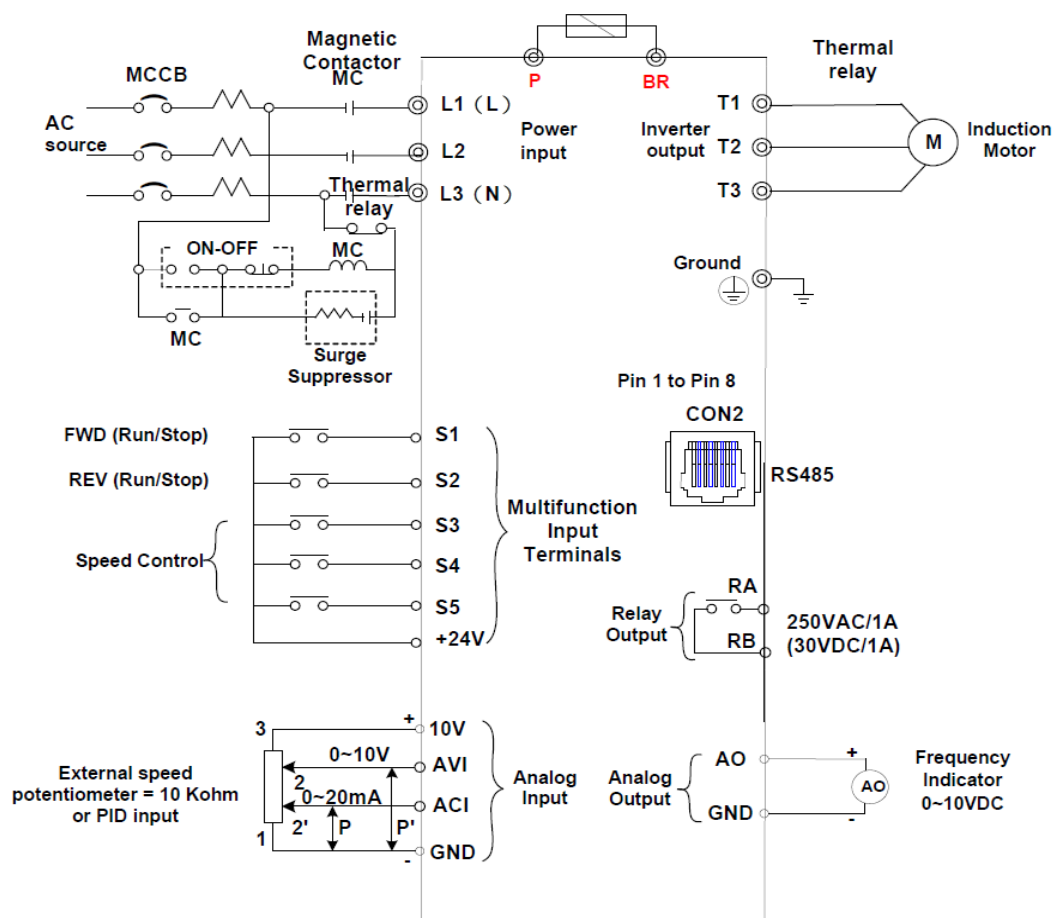
Display:



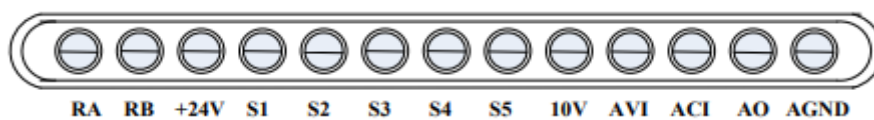
Koblingsskjema 1 fase:



Koblingsskjema 3 fase:



Styreklammer:



Størrelse 1 og 2:

<u>Aa</u> Navn	<u>≡</u> TM2 funksjonsbeskrivelse	<u>≡</u> Signal
<u>RA / RB</u>	programmerbar releutgang	250VAC/1A (30VDC/1A)
<u>24V</u>	+24V for innganger	Maks 30mA
<u>S1~S5</u>	programmerbare innganger	+24VDC, Optokoblet
<u>10V</u>	10V for eksternt potmeter	Maks 20mA
<u>AVI</u>	Analog inngang DC	0-10VDC (200 kΩ)

<u>Aa</u> Navn	 TM2 funksjonsbeskrivelse	 Signal
<u>ACI</u>	Analog inngang mA	0~20mA (499Ω)
<u>AO</u>	Analog utgang programmerbar	0~10V (Maks 2mA)
<u>AGND</u>	Analog Jord	

Størrelse 3 og 4

<u>Aa</u> Navn	 TM2 funksjonsbeskrivelse	 Signal
<u>RA</u>	Programmerbar releutgang NO	250VAC/5A(30VDC/5A)
<u>RB</u>	Programmerbar releutgang NC	250VAC/5A(30VDC/5A)
<u>RC</u>	Programmerbar releutgang felles	250VAC/5A(30VDC/5A)
<u>24V</u>	+24V for innganger	Maks 30mA
<u>SC</u>	Velge mellom NPN/PNP. Lask mellom SC-COM for PNP	
<u>S1~S5</u>	programmerbare innganger	+24VDC, Optokoblet
<u>10V</u>	10V for eksternt potmeter	Maks 20mA
<u>AVI/PTC</u>	Analog inngang DC for hastighet eller PTC	0~10VDC (200 kΩ)
<u>ACI</u>	Analog inngang mA	0~20mA (499Ω)
<u>AO</u>	Analog utgang programmerbar	0~10V (Maks 2mA)
<u>AGND</u>	Analog Jord	

Generell info

Mode knappen brukes til å veksle mellom forskjellig informasjon som kan endres, men standard er:

1. Frekvens, Angitt med blinkende tall for settpunkt og fast for faktisk frekvens
2. Parameter, 00 - 00
3. DC buss spenning, angitt med stor U
4. Motorspenning, Angitt med liten u
5. Motor strøm, Angitt med stor A

Når BDI er stoppet og det blinker et tall fra 0.0 til xx.xx indikerer det at du kan sette frekvensen som

omformeren skal kjøre opp til ved neste start. Faste tall viser at omformeren kjører på den frekvensen.

Når det står StP0 i displayet betyr det at omformeren har fått en startkommando, men at settpunktet er 0Hz.

Finnes DIN skinne adapter og jordklemmer tilgjengelig som ekstraustyr.

▼ Parameteroppbygning:

BDI omformeren er bygget opp med parametersettet oppdelt i 13 kategorier.

- Gruppe 00 - Grunnleggende parametere
- Gruppe 01 - V/F valg
- Gruppe 02 - Motor parametere
- Gruppe 03 - Oppsett for digitalinnganger S1 - S5 og releutgang RA/RB.
- Gruppe 04 - Oppsett for analog signaler.
- Gruppe 05 - Oppsett for faste hastigheter
- Gruppe 06 - Oppsett for faste sekvenser
- Gruppe 07 - Oppsett for Start / Stopp
- Gruppe 08 - Motor og omformer beskyttelse
- Gruppe 09 - Kommunikasjonsoppsett
- Gruppe 10 - PID
- Gruppe 11 - Spesial funksjoner
- Gruppe 12 - Oppsett for digitalt display og tilhørende funksjoner
- Gruppe 13 - Inspeksjons og vedlikeholdsmeny

Endre parametere:

Vi deler parametersettet i 2 grupper hvor de 2 første tallene henviser til en hovedgruppe og de to siste viser til en parameter [hovedgruppe - parameter].

Trykk på mode til xx-xx kommer fram i displayet og trykk enter til man velger hovedgruppe først. Parametervalget blir satt til 00 i det man velger en ny hovedgruppe.

Velg så parameter som man ønsker å endre og hold inne enter i ~1 sekund for å endre verdi.

Når riktig verdi er valgt holder man enter inne til det står end i displayet. Ny verdi er nå lagret i minne.

Standardoppsett

V/F eller sensorless vector + oppsett

På alle motorer der merkedata er kjent bør motoren kjøres i SLV siden dette gir bedre effektivitet og bedre hastighetskontroll.

På eldre motorer, der auto tune feiler eller motorer uten variabel last kan V/F helt fint brukes.

For at SLV skal fungere som det skal må motordata legges inn i omformereren og en motortest gjennomføres.

- 02-01, Motor Rated Current (OL1) , settes til motor merkestrøm?
- 02-03, Motor rated speed, settes etter merkeskilt
- 02-04, Motor rated voltage, settes etter merkeskilt
- 02-05, Motor rated power, settes etter merkeskilt
- 02-06, Motor rated frequency, settes etter merkeskilt

Etter at motordata er lagt inn kan parameter 02-07, Motor Auto Tuning settes til 1 og auto tuning gjennomføres.

Omformer styres via keypad:

Viktige parametere bygget opp som: Kode,Navn,parameter.

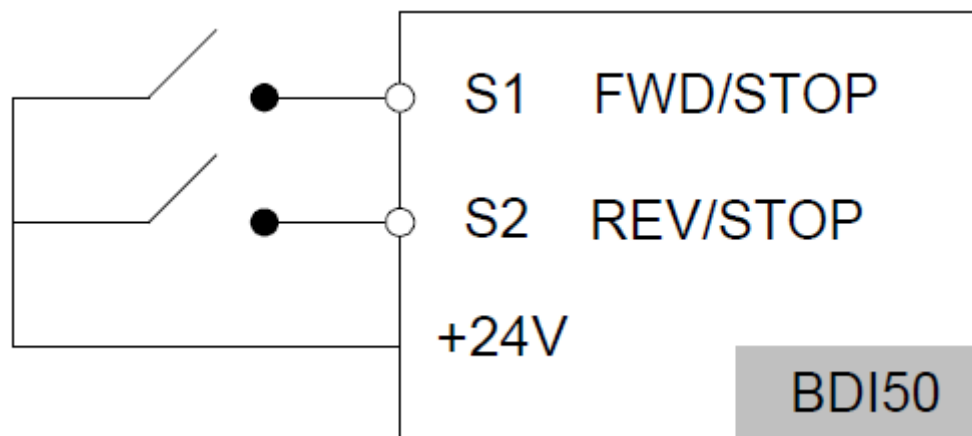
- 00-00 , Control mode , 0:V/F mode eller 1:SLV mode etter behov.
- 00-01, Motor rotation, 0:Forward og 1:Reverse. Her endrer du dreieretningen når du styrer via keypad.
- 00-02, Main Run Source Selection, 0:Keypad

- 00-05, Main Frequency Source Selection, 1: Potentiometer on keypad
- 00-12, Frequency Upper Limit, Settes til maks Hz
- 00-13, Frequency Lower Limit, Settes til minimum Hz
- 00-14, Acceleration Time 1, Settes til ønsket verdi
- 00-15, Deceleration Time 1, Settes til ønsket verdi
- 07-09, Stopping Method, 0: Deceleration to stop eller 1: Coast to stop

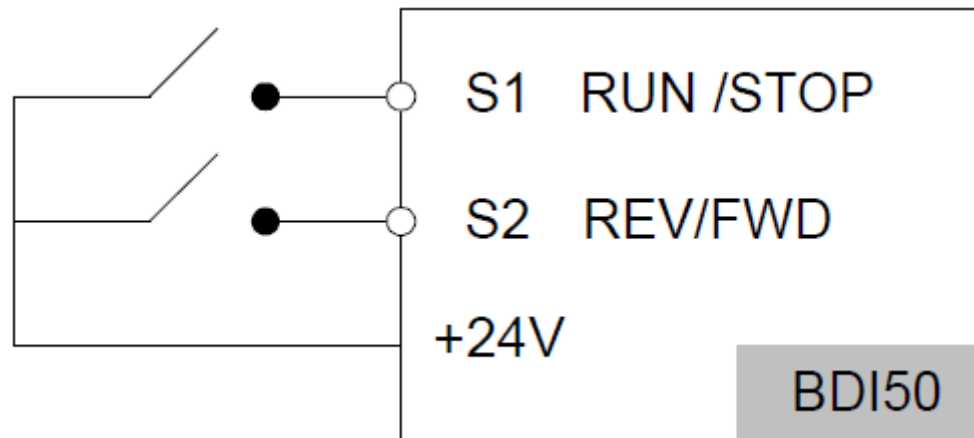
Omformer styres via digital innganger:

Viktige parametere bygget opp som: Kode, Navn, parameter.

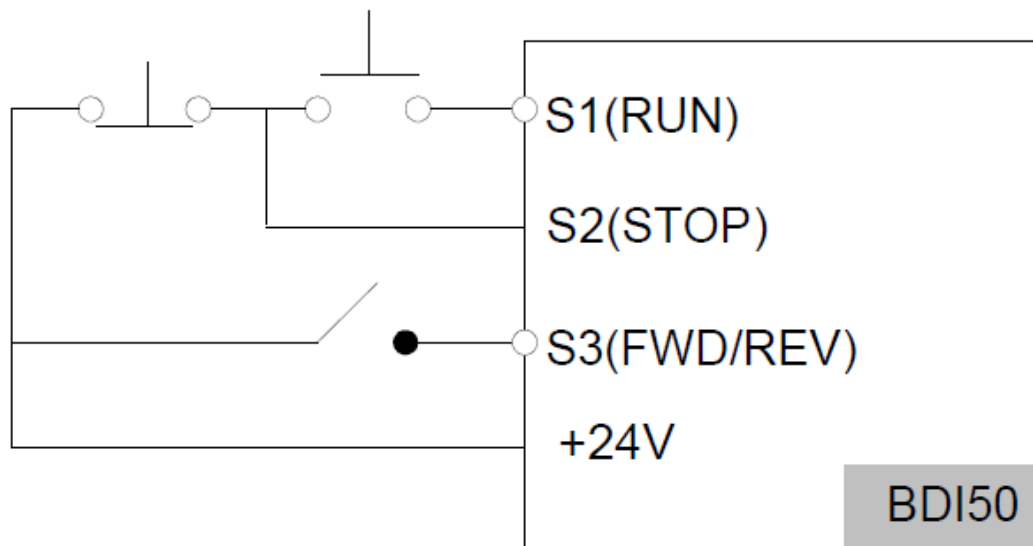
- 00-00, Control mode, 0: V/F mode eller 1: SLV mode etter behov.
- 00-02, Main Run Source Selection, 1: External Run/Stop Control
- 00-04, Operation modes for external terminals,
 - 0: Forward/Stop-Reverse/Stop, S1, S2 = 1 = stopp



- 1: Run/Stop-Reverse/Forward



- 2: 3-Wire Control Mode-Run/Stop



- 00-05, Main Frequency Source Selection, 2: ExternalAVI Analog Signal Input
- 00-12, Frequency Upper Limit, Settes til maks Hz
- 00-13, Frequency Lower Limit, Settes til minimum Hz
- 00-14, Acceleration Time 1, Settes til ønsket verdi
- 00-15, Deceleration Time 1, Settes til ønsket verdi
- 07-09, Stopping Method, 0: Deceleration to stop eller 1: Coast to stop
- ▼ S1 - S5 programmeres med parameter 03-00 til 03-05.

0:Forward/Stop Command or Run /Stop
1:Reverse/Stop Command Or REV/FWD
2:Preset Speed 1 (5-02)
3:Preset Speed 2 (5-03)
4:Preset Speed 4 (5-05)
6:Jog Forward Command
7:Jog Reverse Command
8:Up Command
9:Down Command
10:Acc/Dec 2
11:Acc/Dec Disabled
12:Main/Alternative Run Command select
13:Main/Alternative Frequency Command select
14:Rapid Stop (Decel to stop)
15:Base Block
16:Disable PID Function
17:Reset
18:Auto Run Mode enable

▼ RA/RB programmeres med parameter 03-11

0:Run
1:Fault
2:Setting Frequency Reached
3:Frequency Reached (3-13±3-14)
4:Output Frequency Detection1(> 3-13)
5:Output Frequency Detection2(< 3-13)
6:Auto-Restart
7:Momentary AC Power Loss
8:Rapid Stop
9:Base Block
10:Motor Overload Protection(OL1)
11:Drive Overload Protection(OL2)
12:Reserved
13:Output Current Reached
14:Brake Control
15:PID feedback disconnection detection

Parameter 03-19 velger om relet skal oppføre seg som 0: NO eller 1: NC.

Feilsøking / diagnose:

Status	Checking point	Remedy
Motor runs in wrong direction	Is the wiring for the output terminals correct?	Wiring must match U, V, and W terminals of the motor.
	Is the wiring for forward and reverse signals correct?	Check for correct wiring.
The motor speed can not be regulated.	Is the wiring for the analog frequency inputs correct?	Check for correct wiring.
	Is the setting of operation mode correct?	Check the Frequency Source set in parameters 00-05/00-06.
	Is the load too excessive?	Reduce the load.
Motor running speed too high or too low	Check the motor specifications (poles, voltage...) correct?	Confirm the motor specifications.
	Is the gear ratio correct?	Confirm the gear ratio.
	Is the setting of the highest output frequency correct?	Confirm the highest output frequency
Motor speed varies unusually	Is the load too excessive?	Reduce the load.
	Does the load vary excessively?	1.Minimize the variation of the load. 2.Consider increasing the capacities of the inverter and the motor.
	Is the input power unstable or is there a phase loss ?	1.Consider adding an AC reactor at the power input side if using single-phase power. 2.Check wiring if using three-phase power
Motor can not run	Is the power connected to the correct L1, L2, and L3 terminals? is the charging indicator lit ?	1.Is the power applied? 2.Turn the power OFF and then ON again. 3.Make sure the power voltage is correct. 4.Make sure screws are secured firmly.
	Is there voltage across the output terminals T1, T2, and T3?	Turn the power OFF and then ON again.
	Is overload causing the motor to stall?	Reduce the load so the motor will run.
	Are there any abnormalities in the inverter?	See error descriptions to check wiring and correct if necessary.
	Is there a forward or reverse run command ?	
	Has the analog frequency signal been input?	1.Is analog frequency input signal wiring correct? 2.Is voltage of frequency input correct?
	Is the operation mode setting correct?	Operate through the digital keypad

Feilmeldinger:

Faults which cannot be recovered manually			
Display	content	Cause	Corrective action
-OV- -00-	Voltage too high when stopped	Detection circuit malfunction	Consult with the supplier
-LV- -LU-	Voltage too low when stopped	1. Power voltage too low 2. Pre-charge resistor or fuse burnt out. 3. Detection circuit malfunction	1. Check if the power voltage is correct 2. failed resistor or fuse 3. Consult with the supplier
-OH- -0H-	The inverter is overheated when stopped	1. Detection circuit malfunction 2. Ambient temperature too high or bad ventilation	Improve the ventilation conditions, if no result then replace the inverter
OH-C 0H-C	The inverter is overheated during running	1. IGBT temperature is too high or poor ventilation 2. temperature sensor error or circuit malfunctions	1. Reduce carrier frequency 2. Improve the ventilation conditions, if no result then replace the inverter
CtEr CtEr	Current Sensor detection error	Current sensor error or circuit malfunction	Consult with the supplier
HPErr HPErr	Inverter capacity setting error: Inverter capacity setting 13-00 does not match the rated voltage.	The inverter capacity setting (13-00) does not match the hardware voltage levels	Check the inverter capacity setting (13-00) to meet the hardware voltage levels.
Err4 Err4	CPU Unusual interruption	External noise interference	1. Remove the interference source then restart by switching power OFF/ON 2. If not resolved then Consult with the supplier
EPr EPr	EEPROM problem	Faulty EEPROM	Consult with the supplier
COt COt	Communication error	Communications disruption	Check the wiring

Faults which can be recovered manually and automatically			
Display	content	Cause	Corrective action
OC-A	Over-current at acceleration	1.Acceleration time too short 2.The capacity of the motor exceeds the capacity of the inverter 3.Short circuit between the motor coil and the case 4.Short circuit between motor wiring and ground 5.IGBT module damaged	1.Set a longer acceleration time 2.Replace inverter with one that has the same rating as that of the motor 3.Check the motor 4.Check the wiring 5.Consult with the supplier
OC-C			
OC-C	Over-current at fixed speed	1. Transient load change 2. Transient power change	1.Increase the capacity of the inverter 2.Install inductor on the power supply input side
OC-d	Over-current at deceleration	The preset deceleration time is too short.	Set a longer deceleration time
OC-d			
OC-S	Over current at start	1.Short circuit between the motor coil and the case 2.Short circuit between motor coil and ground 3.IGBT module damaged	1.Inspect the motor 2.Inspect the wiring 3.Consult with the supplier
OC-S			
OV-C	Excessive Voltage during operation/ deceleration	1.Deceleration time setting too short or excessive load inertia 2.Power voltage varies widely (fluctuates)	1.Set a longer deceleration time 2.Consider use of a brake resistor and/or brake module (For 400V models or 200V 5hp~15hp models) 3.Consider use of a reactor at the power input side
PF			
PF	Input phase Loss	Abnormal fluctuations in the main circuit voltage	1.Check the main circuit power supply wiring. 2.Check the power supply voltage
Faults which can be recovered manually but not automatically			
Display	content	Cause	Corrective action
OC	Over-current during stop	Detection circuit malfunction	Consult with the supplier
OL1			
OL1	Motor overload	loading too large	Consider increasing the Motor capacity
OL2	Inverter overload	Excessive Load	Consider increasing the inverter capacity

Faults which can be recovered manually but not automatically			
Display	content	Cause	Corrective action
CL	Inverter over current: Wait 1 minute to reset. If it occurs CL or OL2 up to 4 successive times then wait 5 minutes to reset	Inverter over current warning: inverter current reach the level of over current protection	Check load condition and running period time.
LV-C	Voltage too low during operation	1.Power voltage too low 2.Power voltage varies widely (fluctuates)	1.Improve power quality 2.Consider adding a reactor at the power input side
OVSP	motor rotation over speed	The actual rotation speed is different to the set speed.	1.Check for excessive load 2.Check weather frequency setting signal is right or not
OH4	motor over heat error	1.If temperature detected increases above the set limit in parameter 08-13 and for the delay time set in parameter 08-12 then the display will show "OH4" (motor over heat detection), and the motor will coast to stop. 2.Motor over heat detection "OH4" can be reset when the temperature detection level is lower than the set level in parameter 【08-14 PTC reset level】 .	1.To improve the ventilation condition 2. Adjust parameter 08-15

Feilmeldinger i forbindelse med display / keypad:

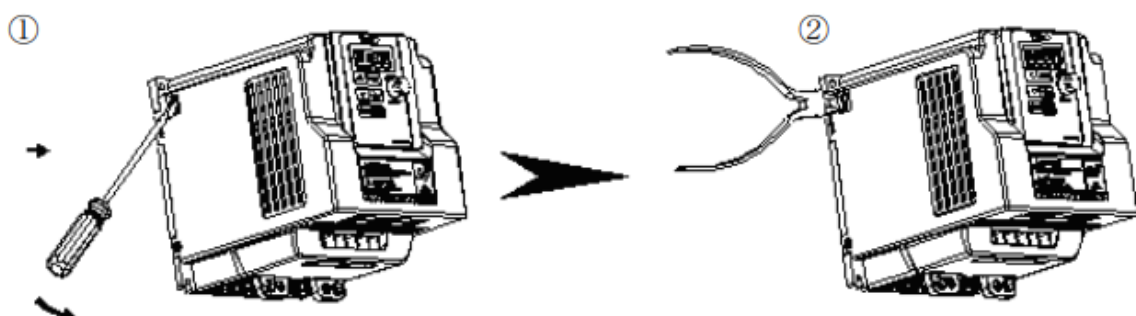
Display	content	Cause	Corrective action
LOC	1.Parameter already locked 2.Motor direction locked 3.Parameter password (13-07) enabled	1.Attempt to modify frequency parameter while 13-06>0. 2.Attempt to reverse direction when 11-00=1. 3.Parameter (13-07) enabled, set the correct password will show LOC.	1.Adjust 13-06 2.Adjust 11-00
Err1	Keypad operation error	1.Press ▲ or ▼ while 00-05/00-06>0 or running at preset speed. 2.Attempt to modify the Parameter.Can not be modified during operation (refer to the parameter list)	1.The ▲ or ▼ is available for modifying the parameter only when 00-05/00-06=0 2.Modify the parameter in STOP mode.
Err2	Parameter setting error	1. 00-13 is within the range of (11-08 ±11-11) OR (11-09 ±11-11) OR (11-10 ±11-11) 2. 00-12 ≤ 00-13 3. 00-05/00-06 or 00-00 / 10-01 set the same value 4. Modifying parameters 01-01~01-09 when 01-00≠ 7. 5. a.If this parameter is parameterized for both functions (AVI/PTC) at the same time. b.PTC function is enabled by setting 08-10≠0. 6. Parameter password function (13-07) set incorrect.	1. modify11-08~11-10 or 11-11 2. 00-12>00-13 3.set 00-05 / 00-06 or 10-00 / 10-01 to be different value 4.set 01-00=7 5.PTC function source can not be the same as frequency source or PID command via AVI. 6. Please set correct password
Err5	Modification of parameter is not available in communication	1.Control command sent during communication. 2.Attempt to modify the function 09-02~ 09-05 during communication	1.Issue enable command before communication 2.Set parameters 09-02~ 09-05 function before communication
Err6	Communication failed	1.Wiring error 2.Communication Parameter setting error. 3.Incorrect communication protocol	1.Check hardware and wiring 2.Check Functions(09-00~ 09- 05).
Err7	Parameter conflict	1.Attempt to modify the function 13-00/13-08. 2.Voltage and current detection circuit is abnormal.	If reset is not possible, please consult with the supplier.

Andre drifts- og feilmeldinger:

Display	Fault	Description
StP0	Zero speed at stop	STP0 is a message displayed on keypad (and on communication) to signal to the user that the motor doesn't move because the preset frequency is very low. In V/f mode, STP0 comes out at less than 1.3Hz (50Hz set) and at less than 1.5Hz (60Hz set) In SLV mode, STP0 comes out at less than 1Hz.
StP1		
StP1	Fail to start directly On power up.	1. If the inverter is set for external terminal control mode (00-02/00-03=1) and direct start is disabled (07-04=1) 2. The inverter cannot be started and will flash STP1. 3. The run input is active at power-up, refer to descriptions of (07-04).
StP2	Keypad Stop	1. If the Stop key is pressed while the inverter is set to external control mode (00-02/00-03=1) then 'STP2' flashes after stop. 2. Release and re-activate the run contact to restart the inverter.
StP2	Operated when inverter in external Control mode.	
E.S.	External Rapid stop	When external rapid stop input is activated the inverter will decelerate to stop and the display will flash with E.S. message.
E.S.		
b.b.	External base block	When external base block input is activated the inverter stops immediately and then the display will flash with b.b. message.
b.b.		
PdEr	PID feedback loss	PID feedback loss is detected.
PdEr		
Alter	auto tuning error	other errors show up in the process of auto tuning.
Alter		
OH3	motor over heat warning	If 08-10 = 3, When over temperature is detected by signal at terminal AVI increasing above the warning detection limit set in parameter 08-15, then the display will show "OH3"(motor over heat warning level) and the motor will continue to run.
OH3		

▼ Fjerne EMC filter for IT nett o.l

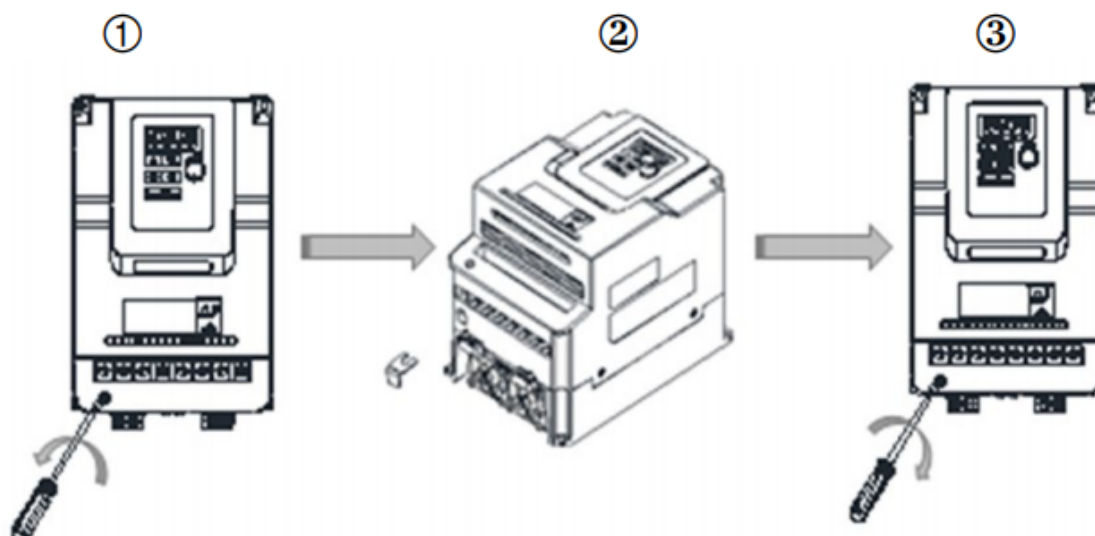
Størrelse 1 og 2



1. Fjern dekslet på siden av omformereren

2. Fjern lasken med nebbtang

Størrelse 3 og 4



1. Løsne skruene til EMC filteret.
2. Ta ut EMC filteret.
3. Stram til skruene igjen.

▼ Tilbakestille BDI til fabrikkinnstillinger

Naviger til parameter 13-08 og tast inn verdi 1250 for 50Hz, 230/400Vac systemer.

Andre alternativer er:

13-08	Reset Drive to Factory Settings
Range	【1150】 : Reset to factory setting (50Hz,220V/380V system)
	【1160】 : Reset to factory setting (60Hz,220V/380V system)
	【1250】 : Reset to factory setting (50Hz,230V/400V system)
	【1260】 : Reset to factory setting (60Hz,230V/460V system)
	【1350】 : Reset to factory setting (50Hz,220V/415V system)
	【1360】 : Reset to factory setting (60Hz,230V/400V system)

For BDI uten innebygget EMC filter skal 1360 brukes.

Parametergruppe 02 blir også resatt til standard så disse dataene må legges inn på nytt.

▼ Sikringer

Om man ønsker å bruke sikring med jordfeilvern må den ha en verdi på over 250mA.

Model	HP	kW	Rating (aR type)
BDI50-1004-...-2M	0.5	0.4	15A / 300VAC
BDI50-1007-...-2M	1	0.75	15A / 300VAC
BDI50-2015-...-2M	2	1.5	30A / 300VAC
BDI50-2022-...-2M / 2T	3	2.2	30A / 300VAC
BDI50-4075-...-2T	10	7.5	60A / 300VAC
BDI50-2007-...-4	1	0.75	5A / 600VAC
BDI50-2015-...-4	2	1.5	15A / 600VAC
BDI50-2022-...-4	3	2.2	20A / 600VAC
BDI50-3037-...-4	5	3.7	20A / 600VAC
BDI50-3055-...-4	7.5	5.5	40A / 600VAC
BDI50-4075-...-4	10	7.5	40A / 600VAC
BDI50-4110-...-4	15	11	70A / 600VAC



Spørsmål kan sendes til [post\(at\)drivetek.no](mailto:post(at)drivetek.no) eller tlf 920 77 000.

[Last ned full manual.](#)