IGBT K SERIES – QUICK START

LEADERDRIVES
IGBT INVERTER

Version : 2-1909

Primary Parameter Setting Guidelines
Page Number :

Portable Keypad
With Modbus (RS485) Communication.

COMPACT INVERTER

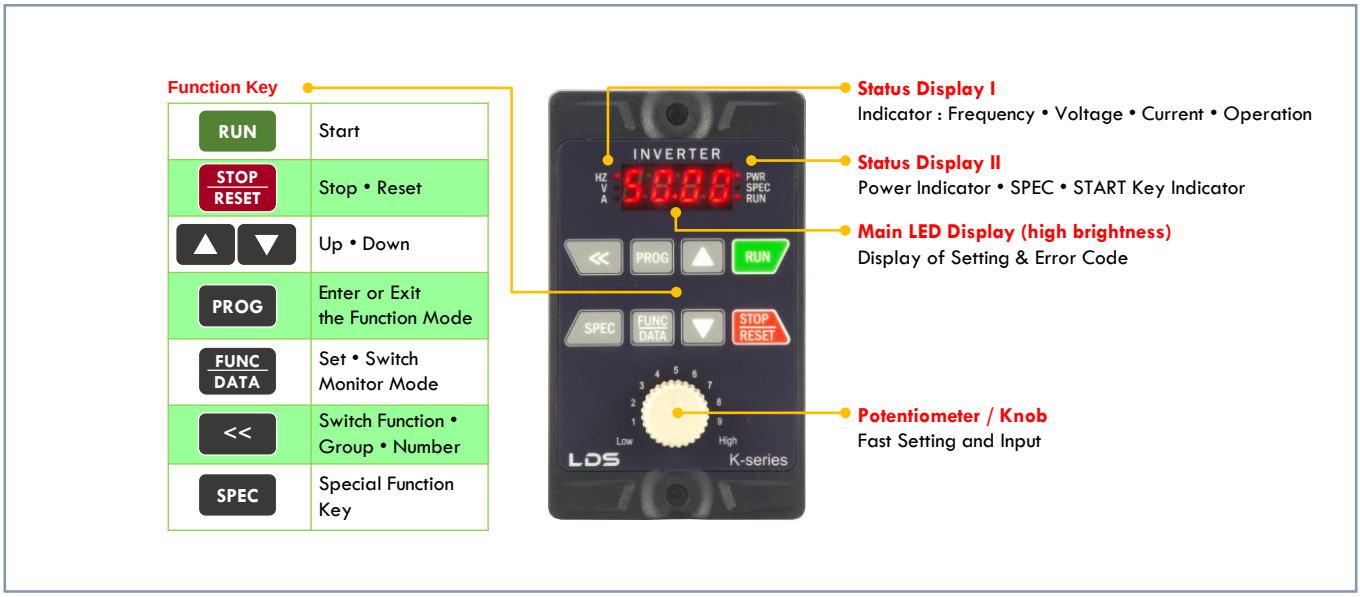
IGBT SERIES

1PHASE INVERTER
WITH 150% OVERLOAD PROTECTION

The compact IGBT inverter is especially advantageous for standard application by virtue of its user friendliness. It offers simple and safe operability, energy saving, compact design as well as superior performance. The inverter is use in numerous application such as conveyor drives, feeders, machining tool and door drives. It is compactible with Unit Type AC Speed Controller (US series).

MODEL NO	IGBT – K060	IGBT - K100	IGBT - K200
Motor Rating (maximum)	Up to 60W	Up to 120W (1/6 HP)	Up to 200W (1/4 HP)
Rated Output Capacity	0.2kVA	0.4kVA	0.6kVA
Rated Output Current	0.6 Amp	1 Amp	1.5 Amp
Rated Output Voltage	AC 3 Phase 220V (3Ø220V)	AC 3 Phase 220V (3Ø220V)	
Range of Output Frequency	0.1Hz ~ 400Hz	0.1Hz ~ 400Hz	
Power Source Voltage	AC 1 Phase 200V~240V (1Ø), 50Hz/60Hz	AC 1 Phase 200V~240V (1Ø), 50Hz/60Hz	
Input Current	1.2 Amp	2 Amp	3 Amp
Permissible AC Power Source Fluctuation	200V ~ 240V, 50Hz/60Hz, ± 5%	200V ~ 240V, 50Hz/60Hz, ± 5%	
Overload Protection	120% of rated output current for 1 minute	150% of rated output current for 1 minute	
Cooling Method	Self-cooling	Self-cooling	
Protection Level	IP20		
Dimension	Body 52 x 127 x 60mm • Mounting Frame: 60 x 100 x 3mm		
Weight	0.38KG	0.4KG+	
Options	NIL	With Braking Transistor / Without Braking Transistor	
Remark	Product dimension and mounting compatible with US Type Speed Controller (USM71-USM72 / US71-US72)		

OPERATION PANEL



Note: The contents of this data sheet are subject to change without prior notice for the purpose of continuous product improvement. Comprehensive Product Manual of the Inverter available upon request.

COMPACT INVERTER

IGBT SERIES

1PHASE INVERTER
WITH 150% OVERLOAD PROTECTION

Func-tion	Description	Initial Factory Setting (TW)	LDS Setting (MY-SG-TH) ★
F0.01	Parameter Lock (Changeable/Lock)	0	0 (Un-Lock) 1 (Lock)
F0.18	Parameter List (Simple/Complete)	0 (Simple)	1 (Complete)
F0.20	Default Setting (Taiwan / Malaysia)	dF60	dF50
F1.21	Switching Frequency	2	4
F2.16	Jog Speed	6.0Hz	0.0Hz
F2.18	Acceleration Time	5.0s	2.0s
F2.19	Deceleration Time	5.0s	2.0s
F2.32	Maximum Output Frequency	50.0Hz	60.0Hz
F2.48	Minimum Output Frequency	0.0Hz	0.0Hz
F4.07	Overload Protection (Independent)	1	2
F4.08	Overload Protection Setting - Motor's Rated Ampere	0.3A ~ 1.5A Based on Motor Spec	
F4.10	OVLP Tripped Time	0.5 (30s)	0.5 (30s)
F5.08	Analogue Frequency Dead Band	0.00	0.05
F5.19	X1 Terminal	22	22 (Forward)
F5.20	X2 Terminal	23	23 (Reverse)
F5.21	X3 Terminal	10	1 (Jog Speed)
F5.25	Digital Response Time	10	3

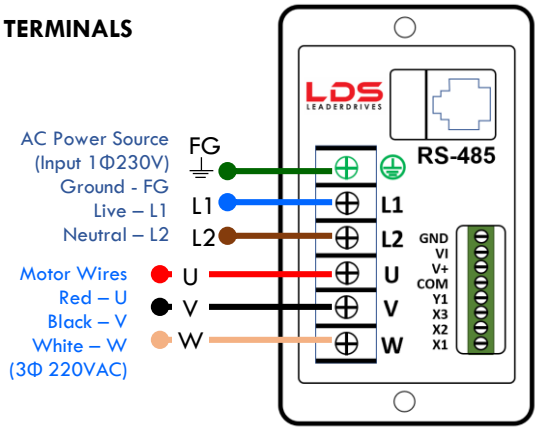
LDS Compact Motor Ampere

Motor Power	Rated Ampere	F4.08 Setting
25W	0.23	0.3
40W	0.36	0.4
60W	0.50	0.6
90W	0.65	0.7
120W	0.75	0.8
150W	0.95	1.00
180W	1.04	1.10
200W	1.10	1.10
(6IK) 200W	1.00	1.10

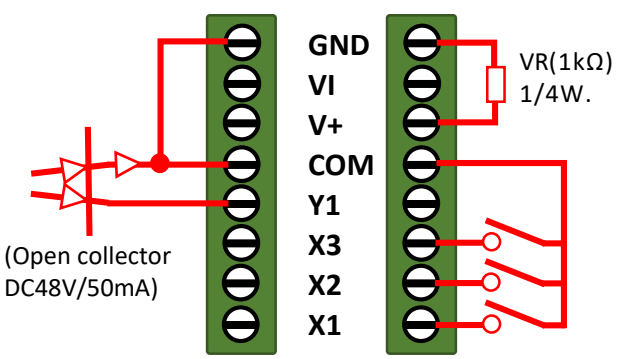
LDS Small Gear Motor Ampere

Motor Power	Rated Ampere	F4.08 Setting
0.1kW	0.7	0.8
0.2kW	1.2	1.3
0.25kW	1.3	1.4

MAIN CONTROL CIRCUIT TERMINALS



TERMINAL AND WIRING



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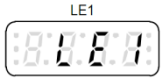
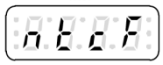
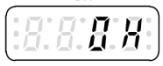
IGBT Inverter's Error Message
Abnormality Diagnostic Function And Reset Method
Details and Remedies for various Fault Trips

Drive error trip message

Display	Description	Cause	Troubleshooting
OC 	**Drive over current** ●The drive current during the operation exceeds 220% of drive's rated current.	●The output terminals of drive are short. ●The load is too heavy. ●The acceleration time is too short. ●Drive is immediately restarted during coast to stop. ●Use special motor.	●Check wires of U,V,W terminals to verify if there is short between terminals. ●Check the motor and drive compatibility. ●Check the motor operated in over-rated running.
OL 	**Motor overload** ●Operation current exceeds 150% of motor's rated current and reaches the motor overload protection time. ●Active time: F4.10.	●Motor is overloaded. ●The voltage setting of V/F pattern is too high or too low. ●The current setting of motor's rated current is invalid.	●Check the load of motor. ●Check if the acceleration or deceleration time is too short. ●Check if V/F setting is proper. ●Check if the rated current setting is valid.
OL1 	**Drive overload** ●Operation current exceeds 150% of drive's rated current and continues for 1minute.	●Motor overload. ●The voltage setting of V/F pattern is too high or too low. ●Drive capacity is too small.	●Check the load of motor if overload. ●Check if the acceleration or deceleration time is too short. ●Check if V/F setting is proper. ●Select the higher capacity of drive.
OLO 	**System overload** ●Load is too heavy and the operation current reaches the active level. ●Detection level: F4.28 ●Detection time: F4.29	— — —	Check the usage of mechanical equipment.
OE 	**Over voltage** ●The internal DC bus voltage is over the protection level. ●100V/200V series: About DC410V ●400V series: About DC820V	The deceleration time of motor is too short causing the regeneration voltage too high on DC bus.	●Increase the setting value of deceleration time ●Use high torque braking method. ●Add dynamic brake unit to reduce regenerate voltage.
		Power source is too high.	Check if the input power is within drive's rated range.

Display	Description	Cause	Troubleshooting
LE1 	**Under voltage during operation** The internal DC bus voltage is below 70% of power source for 200V/400V series drive or 50% of power source for 100V series drive.	●Phase failure of input power. ●Instantaneous power off. ●Voltage variation of power source is too high. ●Motor with instant overload causes the high voltage drop.	Increase the power capacity by selecting higher capacity drive to avoid the voltage drop of the power cord.
ntcF 	**Thermal sensor fault**	Drive thermal sensor (NTC) is fault.	Please call customer service for drive repair.
OH 	**Drive overheat** ●The temperature of drive's heat sink reaches the trip level. ●Trip level: F4.12	●The surrounding temperature is too high. ●The heat sink has foreign body. ●The cooling fan of drive is fault.	●Improve the ventilation. ●Clean the dust on the heat sink. ●Return the drive to replace the cooling fan.

Display	Description	Cause	Troubleshooting
OH2 	**Motor overheat** ●The internal temperature of motor is over the trip level. ●Trip level: F4.23	Motor is overheat.	●Check if the motor load is too heavy. ●Check if the accel./decel. time is too short. ●Check if V/F setting is proper.
EF 	**External fault**	The multi-function terminal receives the external fault signal.	Clear the external fault and then press "STOP RESET" key.
PAdF 	**Keypad interruption during copy**	●The connecting wire of the keypad is loosen. ●The keypad jack of the drive is oxidized.	Check the connecting wire of keypad.
EEr 	**EEPROM error**	●EEPROM data write fault. ●EEPROM component defected.	●Please reset all parameters to default value and restart the drive. ●Return the drive to repair, when the fault cannot be eliminated.
EEr1 	**Internal memory error**	CPU RAM is malfunction.	Please call customer service for drive repair.
EEr2 	**Internal memory error**	The software checksum is incorrect.	Please call customer service for drive repair.

Drive warning message

*Drive will stops output when displaying below messages. After the fault conditions are troubleshooted, the drive will recover to normal condition.

Display	Description	Cause	Troubleshooting
OLO 	**System overload** ●Load is too heavy and the operation current reaches the active level. ●Detection level: F4.28 ●Detection time: F4.29	— — —	Check the usage of mechanical equipment.
Hv 	**Power source over voltage** The internal DC bus voltage of drive is over the protection level during stop.	Power source voltage is too high.	Check if the input power is within drive's rated range.
db 	**Over voltage detection during deceleration** ●The internal DC bus voltage of drive is over the protection level. ●Setting level:F3.27	The deceleration time of motor is too short causing the regenerate voltage too high on DC bus.	●Increase the setting value of "deceleration time". ●Use high torque braking method. ●Add dynamic brake unit to reduce regenerate voltage
LE 	**Power source under voltage**	The voltage of power source is too low.	Check if the voltage of power source is normal.
OHt 	**Drive overheat** ●The temperature of drive's heat sink reaches the protection level. ●Setting level: F4.14	●The surrounding temperature is too high. ●The heat sink has foreign body. ●The cooling fan of drive is fault.	●Improve the ventilation. ●Clean the dust on the heat sink. ●Return the drive to replace the cooling fan.
OH1 	**Motor overheat** ●The internal temperature of motor is over the warning level. ●Warning level: F4.21	Motor is over heat.	●Check if the motor load is too heavy. ●Check if the accel./decel. time is too short. ●Check if V/F setting is proper.

Drive warning message

Display	Description	Cause	Troubleshooting
bb 	**Drive output interruption**	Drive stops the output when the output interruption command is activated.	Clear drive output interruption command.
Fr 	**Coast to stop**	Drive stops the output when the coast to stop command is activated.	Clear “coast to stop” command.
dtF 	**Forwad/reverse command input simultaneously**	Input the forward/reverse command to one of X1~X4 terminals simultaneously.	Check the control command.
 Inter-display with frequency command	**No input of forward/reverse command**	— — —	Check rotation direction command.
WrF 	**Different software version inter-copy**	The software version of drives is different.	Check up the software version is corresponded.
Cot 	**Modbus communication overtime**	●Communication wire is loosen or connecting wire is incorrect. ●Communication setting of host and receiver are different.	●Check the wiring of communication wire. ●Check the communication setting.
Err 00  *Err 01* 	**Err 00: Keypad cable trip before connecting.** **Err 01: Keypad cable trip during operation.**	●The connecting wire of the keypad is loosen. ●The keypad jack of the drive is oxidized.	Check the wire between the keypad and drive.

8A)

How to Un-LOCK your inverter before you can make chance to the parameter

F0.01 set to [0]

Step	Action	Screen Display (after action)	Remark
			When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG		Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan* ≪		Press [<<] to shift digit of parameter : [F0.00]
3	Press *tekan* ▲		Press [Δ] to parameter : [F0.01] Parameter Lock *(Refer to Page 16)*
4	Press *tekan* FUNC DATA		Press [FUNC/DATA] to enter Parameter F1.00 Default Setting [1] – Parameters are locked
5	Press *tekan* ▼		Press [∇] to new command : [0] Parameter are changeable *Refer to page 16*
6	Press *tekan* FUNC DATA		Press [FUNC/DATA] to complete the new parameter change.
END	Press *tekan* PROG		Press [PROG] to return to Initial Display Screen

8B)

How to LOCK your inverter after you have done the chances to the parameter.

F0.01 set to [1]

Step	Action	Screen Display (after action)	Remark
			When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG		Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan* ≪		Press [<<] to shift digit of parameter : [F0.00]
3	Press *tekan* ▲		Press [Δ] to parameter : [F0.01] Parameter Lock *(Refer to Page 16)*
4	Press *tekan* FUNC DATA		Press [FUNC/DATA] to enter Parameter F1.00 Default Setting [0] – Parameters are changeable
5	Press *tekan* ▲		Press [Δ] to new command [1] Parameter are locked *Refer to page 16*
6	Press *tekan* FUNC DATA		Press [FUNC/DATA] to complete the new parameter change.
END	Press *tekan* PROG		Press [PROG] to return to Initial Display Screen

9) Switching Method between Various Mode of IGBT Inverter

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG	F0.00	Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan* ▲	F 1.00	Press [Δ] to display Operation Status [F1.00] Operation Parameter
3	Press *tekan* ▲	F2.00	Press [Δ] to display Operation Status [F2.00] Frequency Parameter
4	Press *tekan* ▲	F3.00	Press [Δ] to display Operation Status [F3.00] Control Parameter
5	Press *tekan* ▲	F4.07	Press [Δ] to display Operation Status [F4.07] Protection Parameter
6	Press *tekan* ▲	F5.00	Press [Δ] to display Operation Status [F5.19] Multi-Function Parameter
7	Press *tekan* ▲	F6.55	Press [Δ] to display Operation Status [F6.55] Special Parameter
8	Press *tekan* ▲	F0.00	Press [Δ] to display [F0.00] System Parameter Return to Step 1
END	Press *tekan* PROG	0.00	Press [PROG] to return to Initial Display Screen

10)
How to display current ampere of the running motor

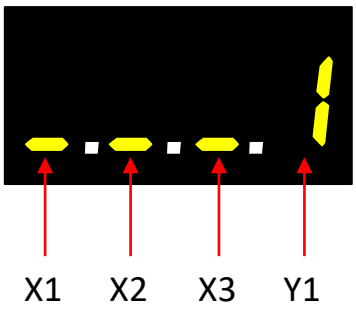
User to has connect the inverter to the motor, and run the motor in order to measure current ampere.

***Refer to Step 6 – Display 5 Output Current**

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press tekan FUNC DATA	50.00	Press [RUN] to start running the motor. Main Display show [50.00] Display 1 Output Frequency at 50.00Hz
2	Press tekan FUNC DATA	50.00	Press [FUNC/DATA] to show [50.00] Display 2 Frequency Command
3	Press tekan FUNC DATA	230.4	Press [FUNC/DATA] to show [50.00] Display 3 Output Voltage
4	Press tekan FUNC DATA	343.3	Press [FUNC/DATA] to show [343.3] Display 4 DC Bus Voltage
5	Press tekan FUNC DATA	0.7	Press [FUNC/DATA] to show [0.7] Display 5 (0.7A) Output Current (Ampere) Ampere may varies according to Motor Load
6	Press tekan FUNC DATA	_._._. 1	Press [FUNC/DATA] to show [_._._. 1] Display 6 Terminal Status (X1/X2/X3/Y1)
7	Press tekan FUNC DATA	28.1	Press [FUNC/DATA] to show [28.1] Display 7 Temperature of Heat Sink
8	Press tekan FUNC DATA	1000	Press [FUNC/DATA] to show [1000] Display 8 Machine Speed (F1.13*50Hz)
END	Press tekan PROG	0.00	Press [PROG] to return to Initial Display Screen

TERMINAL STATUS



Multi-function Input Terminal “X1” is active

Multi-function Input Terminal “X2” is active

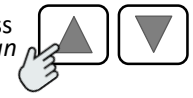
Multi-function Input Terminal “X3” is active

Multi-function Output Terminal “Y1” is active

11A)
How to adjust the running frequency via KNOB on operation panel.

Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Rotate *pusing* 	40.00	Rotate [KNOB] to intended speed E.g. 40Hz
2	Press *tekan* 	40.00	Press [RUN] to start running the motor. Main Display show [40.00] Display 1 Output Frequency

11B)
How to adjust the running frequency via UP/DOWN button on operation panel.

Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* 	30.00	Press [UP/DOWN] to intended speed E.g. 30Hz
2	Press *tekan* 	30.00	Press [RUN] to start running the motor. Main Display show [30.00] Display 1 Output Frequency at 30.00Hz

11C)
How to stop the running operation.

Step	Action	Screen Display (after action)	Remark
		30.00	When the inverter is in running mode. E.g. Running at 30Hz
1	Press *tekan* 	0.00	Press [STOP/RESET] to stop the operation

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

12)
How to enable to knob function (i.e. to adjust speed via Knob rotation)

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG	F0.00	Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan* ▲	F 1.00	Press [Δ] to parameter [F1.00] Multi-Function Parameter
3	Press *tekan* <<	F 1.00	Press [<<] to shift digit of Parameter : [F1.00]
4	Press *tekan* ▲	F 1.01	Press [Δ] to parameter [F1.01] Primary Frequency Command *(Refer to Page 17)*
5	Press *tekan* FUNC DATA	1	Press [FUNC/DATA] to enter Parameter F1.08 Default Setting [1]
6	Press *tekan* FUNC DATA	F 1.01	Press [FUNC/DATA] to complete the new parameter change.
7	Press *tekan* ▲	F 1.03	Press [Δ] to parameter [F1.03] Display Mode 6 *(Refer to Page 18)*
8	Press *tekan* FUNC DATA	0	Press [FUNC/DATA] to enter Parameter F1.09 Default Setting [0]
9	Press *tekan* ▲	2	Press [Δ] to new command [2] VI – "Pot Knob" (*Refer to page 38)*
10	Press *tekan* FUNC DATA	F 1.03	Press [FUNC/DATA] to complete the new parameter change.
END	Press *tekan* PROG	0.00	Press [PROG] to return to Initial Display Screen

13)
How to set Maximum and Minimum Output Frequency
F2.32 set to [70.0]
F2.48 set to [0.30]

E.G - 1
Maximum Output Frequency
To 70Hz

Minimum Output Frequency
To 21Hz
*(0.30 multiplier of Maximum Output Frequency above)

E.G - 1
Maximum Output Frequency
To 60Hz

Minimum Output Frequency
To 30Hz
*(0.50 multiplier of Maximum Output Frequency above)

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG	F0.00	Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan* ▲	F2.00	Press [Δ] to parameter [F2.00] Frequency Parameter
3	Press *tekan* ≪	F2.00	Press [<<] to shift digit of Parameter : [F2.00]
4	Press *tekan* ▲	F2.32	Press [Δ] to parameter [F2.32] Maximum Output Frequency *(Refer to Page 22)*
5	Press *tekan* FUNC DATA	60.0	Press [FUNC/DATA] to enter Parameter F2.32 Default Setting [60.0]
6	Press *tekan* ≪	60.0	Press [<<] to shift digit of frequency command : [60.0] 60.0Hz
7	Press *tekan* ▲	70.0	Press [Δ] to new command [70.0] Max Speed at 70.0Hz *Refer to page 22*
8	Press *tekan* FUNC DATA	F2.32	Press [FUNC/DATA] to complete the new parameter change.
9	Press *tekan* ▲	F2.48	Press [Δ] to parameter [F2.48] Minimum Output Frequency *(Refer to Page 22)*
10	Press *tekan* FUNC DATA	0.00	Press [FUNC/DATA] to enter Parameter F2.48 Default Setting [0.00]
11	Press *tekan* ≪	0.00	Press [<<] to shift digit of frequency command : [0.00] 0.00 Multiplier
12	Press *tekan* ▲	0.30	Press [Δ] to new command [0.30] 0.30 * Maximum Output Frequency (=21Hz)
13	Press *tekan* FUNC DATA	F2.48	Press [FUNC/DATA] to complete the new parameter change.
END	Press *tekan* PROG	0.00	Press [PROG] to return to Initial Display Screen

14)

How to adjust Acceleration Time and Deceleration Time

F2.18 set to [3.0]

F2.19 set to [4.0]

E.g.

Acceleration Time to 3.0second

Deceleration Time to 4.0second

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG	F0.00	Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan* ▲	F2.00	Press [Δ] to parameter [F2.00] Frequency Parameter
3	Press *tekan* ≪	F2.00	Press [<<] to shift digit of Parameter : [F2.00]
4	Press *tekan* ▲	F2.18	Press [Δ] to parameter [F2.18] Primary Acceleration Time *(Refer to Page 20)*
5	Press *tekan* FUNC DATA	2.0	Press [FUNC/DATA] to enter Parameter F2.18 Default Setting [2.0]
6	Press *tekan* ≪	2.0	Press [<<] to shift digit of frequency command : [2.0] 2.0Seconds
7	Press *tekan* ▲	3.0	Press [Δ] to new command [3.0] 3.0Seconds Acceleration *Refer to page 20*
8	Press *tekan* FUNC DATA	F2.18	Press [FUNC/DATA] to complete the new parameter change.
9	Press *tekan* ▲	F2.19	Press [Δ] to parameter [F2.19] Primary Deceleration Time *(Refer to Page 21)*
10	Press *tekan* FUNC DATA	2.0	Press [FUNC/DATA] to enter Parameter F2.19 Default Setting [2.0]
11	Press *tekan* ≪	2.0	Press [<<] to shift digit of frequency command : [2.0] 2.0Seconds
12	Press *tekan* ▲	4.0	Press [Δ] to new command [4.0] 4.0Seconds Deceleration *Refer to page 20*
13	Press *tekan* FUNC DATA	F2.19	Press [FUNC/DATA] to complete the new parameter change.
END	Press *tekan* PROG	0.00	Press [PROG] to return to Initial Display Screen

15)

How to change Forward rotation direction to Reverse rotation direction

F1.00 set to [4]

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

Step	Action	Screen Display (after action)	Remark
			When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG		Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan* ▲		Press [Δ] to parameter [F1.00] Operation Parameter
3	Press *tekan* FUNC DATA		Press [FUNC/DATA] to enter Parameter F1.00 Default Setting [3] Forward
4	Press *tekan* ▲		Press [Δ] to new command [4] Reverse *(Refer to page 17)*
5	Press *tekan* FUNC DATA		Press [FUNC/DATA] to complete the new parameter change.
END	Press *tekan* PROG		Press [PROG] to return to Initial Display Screen

16)
How to display Motor RPM instead of Frequency on screen

For 4Pole Motor (1500rpm)
F1.08 set to [6]
F1.09 set to [2]
F1.12 set to [4P]

For 2Pole Motor (3000rpm)
F1.08 set to [6]
F1.09 set to [2]
F1.12 set to [2P]

For 6Pole Motor (1000rpm)
F1.08 set to [6]
F1.09 set to [2]
F1.12 set to [6P]

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG	F0.00	Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan* ▲	F 1.00	Press [Δ] to parameter [F1.00] Multi-Function Parameter
3	Press *tekan* <<	F 1.00	Press [<<] to shift digit of Parameter : [F1.00]
4	Press *tekan* ▲	F 1.08	Press [Δ] to parameter [F1.08] Main Display Selection *(Refer to Page 18)*
5	Press *tekan* FUNC DATA	1	Press [FUNC/DATA] to enter Parameter F1.08 Default Setting [1]
6	Press *tekan* ▲	6	Press [Δ] to new command [6] Display Mode F1.09 *(Refer to Page 18)*
7	Press *tekan* FUNC DATA	F 1.08	Press [FUNC/DATA] to complete the new parameter change.
8	Press *tekan* ▲	F 1.09	Press [Δ] to parameter [F1.09] Display Mode 6 *(Refer to Page 18)*
9	Press *tekan* FUNC DATA	0	Press [FUNC/DATA] to enter Parameter F1.09 Default Setting [0]
10	Press *tekan* ▲	2	Press [Δ] to new command [2] Motor Rotation Speed (RPM) *(Refer to page 18)*
11	Press *tekan* FUNC DATA	F 1.09	Press [FUNC/DATA] to complete the new parameter change.
12	Press *tekan* ▲	F 1.12	Press [Δ] to parameter [F1.12] No. of Motor Poles *(Refer to Page 18)*
13	Press *tekan* FUNC DATA	4P	Press [FUNC/DATA] to enter Parameter F1.12 Default Setting [4P]
14	Press *tekan* ▲	4P	Press [Δ] to new command [2P / 4P / 6P] RPM Display Value *(Refer to page 18)*
15	Press *tekan* FUNC DATA	F 1.12	Press [FUNC/DATA] to complete the new parameter change.
END	Press *tekan* PROG	0.00	Press [PROG] to return to Initial Display Screen

17)

How to display Machine Speed instead of Frequency on screen

Machine Speed Ratio
= Machine Speed Ratio F1.13 x Output Frequency

E.G (1).
At rated speed 50Hz, in order to show value "500" in Main Display Screen:

Setting as below
F1.08 set to [6]
F1.09 set to [3]
F1.13 set to [10.00]
(Machine Speed = F1.13 * 50)
(Machine Speed = 10.00 * 50)

E.G (2).
At rated speed 50Hz, in order to show value "800" in Main Display Screen:

Setting as below
F1.08 set to [6]
F1.09 set to [3]
F1.13 set to [16.00]
(Machine Speed = F1.13 * 50)
(Machine Speed = 16.00 * 50)

E.G (3)
If you are using 4pole motor (1500rpm), and your max frequency range is 80Hz .
Gear reduction ratio 15.
Formula as below:
F1.13 = (1500 * (80hz / 50hz))
= 2400 / Gear Ratio 15
= 160 / Default 50Hz
= 3.2
F1.08 set to [6]
F1.09 set to [3]
F1.13 set to [3.2]

E.G (4)
If you want to show max 200 at LED Display.
Formula as below:
F1.13 = 200 / Default 50hz
= 4
F1.08 set to [6]
F1.09 set to [3]
F1.13 set to [4]

Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG	F0.00	Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan* ▲	F 1.00	Press [Δ] to parameter [F1.00] Multi-Function Parameter
3	Press *tekan* ≪	F 1.00	Press [<<] to shift digit of Parameter : [F1.00]
4	Press *tekan* ▲	F 1.08	Press [Δ] to parameter [F1.08] Main Display Selection *(Refer to Page 18)*
5	Press *tekan* FUNC DATA	1	Press [FUNC/DATA] to enter Parameter F1.08 Default Setting [1]
6	Press *tekan* ▲	6	Press [Δ] to new command [6] Display Mode F1.09 *(Refer to Page 18)*
7	Press *tekan* FUNC DATA	F 1.08	Press [FUNC/DATA] to complete the new parameter change.
8	Press *tekan* ▲	F 1.09	Press [Δ] to parameter [F1.09] Display Mode 6 *(Refer to Page 18)*
9	Press *tekan* FUNC DATA	0	Press [FUNC/DATA] to enter Parameter F1.09 Default Setting [0]
10	Press *tekan* ▲	3	Press [Δ] to new command [3] Machine Speed (MPM) *Refer to page 18*
11	Press *tekan* FUNC DATA	F 1.09	Press [FUNC/DATA] to complete the new parameter change.
12	Press *tekan* ▲	F 1.13	Press [Δ] to parameter [F1.13] No. of Motor Poles *(Refer to Page 18)*
13	Press *tekan* FUNC DATA	20.00	Press [FUNC/DATA] to enter Parameter F1.13 Default Setting [20.00]
14	Press *tekan* ≪	20.00	Press [<<] to shift digit of Command [20.00]
15	Press *tekan* ▼	10.00	Press [∇] to new command [10.00] Machine Speed 10x *(Refer to page 18)*
16	Press *tekan* FUNC DATA	F 1.13	Press [FUNC/DATA] to complete the new parameter change.
END	Press *tekan* PROG	0.00	Press [PROG] to return to Initial Display Screen

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

18)

How to adjust Thermal Current Protection (TCP - overload protection for your drive/motor)

F4.08 set to [0.1 ~ 2.0] Ampere

* Default Ampere may varies based on inverter capacity.

For setting of rated ampere protection, please refer to the rated ampere on the name plate of the motor.

E.g. for 3ph230V voltage, 90W motor's rated ampere is 0.65A (ampere).
In this case, you may set this TCP value to 0.7A.
You may set the overload ampere with 5% higher than rated ampere, as above.

Thermal Current Protection will be activated when your motor is running over pre-set TCP value for 12Seconds.

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG	F0.00	Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan* ▲	F4.07	Press [Δ] to parameter [F4.07] Protection Parameter
3	Press *tekan* ≪	F4.07	Press [<<] to shift digit of Parameter : [F4.07]
4	Press *tekan* ▲	F4.08	Press [Δ] to parameter [F4.08] Motor Rated Current *(Refer to Page 26)*
5	Press *tekan* FUNC DATA	0.6	Press [FUNC/DATA] to enter Parameter F4.08 Default Setting [0.6] Ampere * Ampere may varies based on motor capacity
6	Press *tekan* ▲	0.7	Press [Δ] to new command [0.8] Overload Protection at 0.8Ampere (*Refer to page 25)*
7	Press *tekan* FUNC DATA	F4.08	Press [FUNC/DATA] to complete the new parameter change.
END	Press *tekan* PROG	0.00	Press [PROG] to return to Initial Display Screen

19)

How to change the Switching Frequency of the inverter (a.k.a PWM Carrier Frequency)

F1.21 set to (0 ~ 6)

Default Setting : 4

* The higher the value, the motor noise is lower

(User can adjust to higher value of Carrier Frequency to reduce acoustic noise of inverter)

F1.21 allows the tone of the magnetic noise from the motor to be changed by switching the PWM carrier frequency. This parameter is also effective in preventing the motor from resonating with its load machine or its fan cover.

* Reduce the carrier frequency to reduce electromagnetic noise, but the acoustic noise of the motor is increased. Vice versa.

P/S : Recommended Carrier Frequency value : 3

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

Step	Action	Screen Display (after action)	Remark
			When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG		Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan*		Press [Δ] to parameter [F1.00] Multi-Function Parameter
3	Press *tekan*		Press [<<] to shift digit of Parameter : [F1.00]
4	Press *tekan*		Press [Δ] to parameter [F1.21] Switching Frequency *(Refer to Page 19)*
5	Press *tekan* FUNC DATA		Press [FUNC/DATA] to enter Parameter F1.21 Default Setting [3]
6	Press *tekan*		Press [Δ] to new command [4] Motor noise is lower. *Refer to page 17*
7	Press *tekan* FUNC DATA		Press [FUNC/DATA] to complete the new parameter change.
END	Press *tekan* PROG		Press [PROG] to return to Initial Display Screen

20)

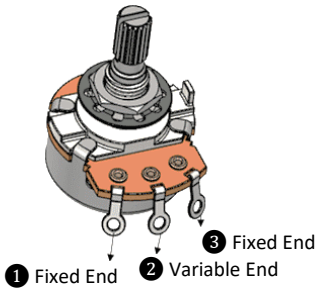
How to use external speed potentiometer (VR) to adjust running frequency

F1.01 set to [0]

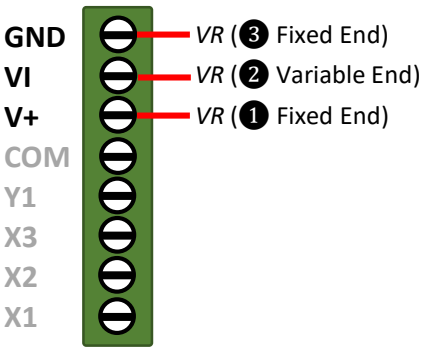
F1.03 set to [5]

(VR – Variable Resistor a.k.a. Adjustable Knob)

Potentiometer Resistance : 20K Ohm (20kΩ), 1/4W.



TERMINAL AND WIRING



Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press / *tekan* PROG	F0.00	Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press / *tekan* ▲	F 1.00	Press [Δ] to parameter [F1.00] Multi-Function Parameter
3	Press / *tekan* ≪	F 1.00	Press [<<] to shift digit of Parameter : [F1.00]
4	Press / *tekan* ▲	F 1.01	Press [Δ] to parameter [F1.01] Primary Frequency Command Selection *(Refer to Page 17)*
5	Press / *tekan* FUNC DATA	1	Press [FUNC/DATA] to enter Parameter F1.01 Default Setting [1]
6	Press / *tekan* ▼	0	Press [∇] to new command [0] Frequency Command by Analog Input Selection *Refer to page 17*
7	Press / *tekan* FUNC DATA	F 1.01	Press [FUNC/DATA] to complete the new parameter change.
8	Press / *tekan* ▲	F 1.03	Press [Δ] to parameter [F1.03] Analog Input Selection *(Refer to Page 17)*
9	Press / *tekan* FUNC DATA	0	Press [FUNC/DATA] to enter Parameter F1.03 Default Setting [0]
10	Press / *tekan* ▲	5	Press [Δ] to new command [5] VI *Refer to page 17*
11	Press / *tekan* FUNC DATA	F 1.03	Press [FUNC/DATA] to complete the new parameter change.
END	Press / *tekan* PROG	0.00	Press [PROG] to return to Initial Display Screen

21)

How to use 2-way External Selector Switch for :

Run / Stop operation

*** [RUN] button will be disabled.**

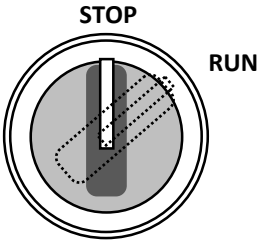
F1.00 set to [0]

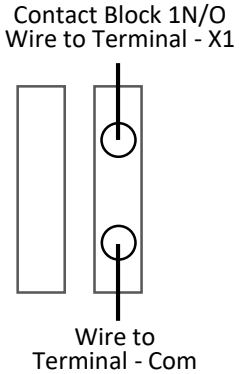
F5.19 set to [22]

F5.21 set to [0]

Connect a Selector Switch between Terminal X1 and Com

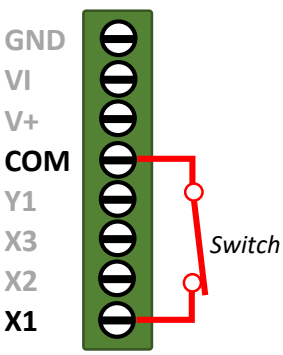
Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)



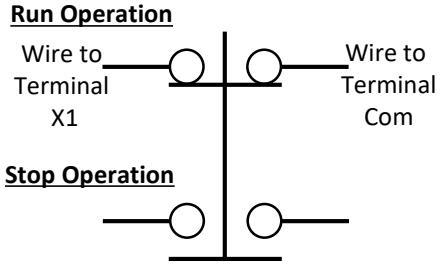


Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press / *tekan* PROG	F0.00	Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press / *tekan* ▲	F 1.00	Press [Δ] to parameter [F1.00] Multi-Function Parameter
3	Press / *tekan* FUNC DATA	3	Press [FUNC/DATA] to enter Parameter F1.00 Default Setting [3]
4	Press / *tekan* ▼	0	Press [∇] to new command [0] Start / Rev Command *Refer to page 17*
5	Press / *tekan* FUNC DATA	F 1.00	Press [FUNC/DATA] to complete the new parameter change.
6	Press / *tekan* ▲	F5.19	Press [Δ] to parameter [F5.19] Multi-Function Input Terminal X1 *(Refer to Page 29)*
7	Press / *tekan* FUNC DATA	22	Press [FUNC/DATA] to enter Parameter F5.19 Default Setting [22]
8	Press / *tekan* FUNC DATA	F5.19	Press [FUNC/DATA] to complete the new parameter change.
9	Press / *tekan* ≪	F5.19	Press [<<] to shift digit of Parameter : [F5.19]
10	Press / *tekan* ▲	F5.21	Press [Δ] to parameter [F5.21] Multi-Function Input Terminal X3 *(Refer to Page 29)*
11	Press / *tekan* FUNC DATA	1	Press [FUNC/DATA] to enter Parameter F5.21 Default Setting [1]
12	Press / *tekan* ▼	0	Press [∇] to new command [0] Disable *Refer to page 17*
13	Press / *tekan* FUNC DATA	F5.21	Press [FUNC/DATA] to complete the new parameter change.
END	Press / *tekan* PROG	0.00	Press [PROG] to return to Initial Display Screen

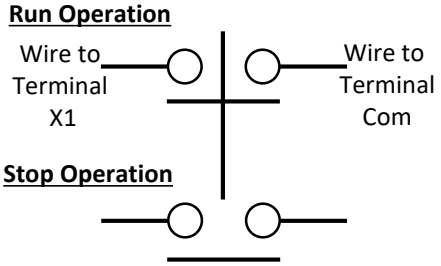
TERMINAL AND WIRING



RUN OPERATION



STOP OPERATION



22)

How to use 3-way External Selector Switch for : Reverse / Stop / Forward operation

*** [RUN] button will be disabled.**

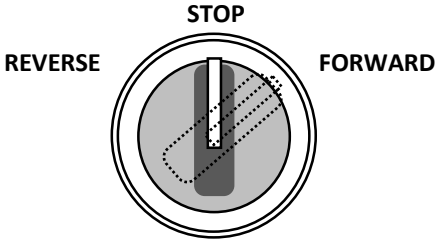
F1.00 set to [0]

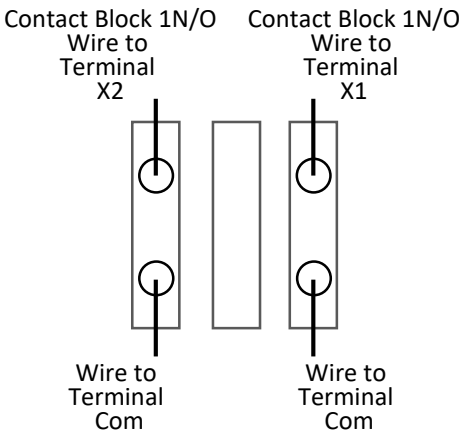
F5.19 set to [22]

F5.20 set to [23]

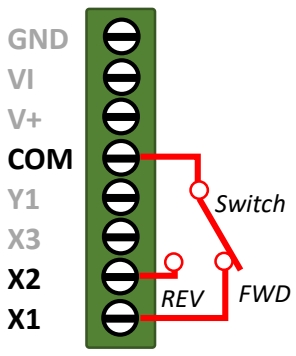
F5.21 set to [0]

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)





TERMINAL AND WIRING



Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG	F0.00	Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan* ▲	F 1.00	Press [Δ] to parameter [F1.00] Multi-Function Parameter
3	Press *tekan* FUNC DATA	3	Press [FUNC/DATA] to enter Parameter F1.00 Default Setting [3]
4	Press *tekan* ▼	0	Press [∇] to new command [0] Start / Rev Command *Refer to page 17*
5	Press *tekan* FUNC DATA	F 1.00	Press [FUNC/DATA] to complete the new parameter change.
6	Press *tekan* ▲	F5. 19	Press [Δ] to parameter [F5.19] Multi-Function Input Terminal X1 *(Refer to Page 29)*
7	Press *tekan* FUNC DATA	22	Press [FUNC/DATA] to enter Parameter F5.19 Default Setting [22]
8	Press *tekan* FUNC DATA	F5. 19	Press [FUNC/DATA] to complete the new parameter change.
9	Press *tekan* ≪	F5. 19	Press [<<] to shift digit of Parameter : [F5.19]
10	Press *tekan* ▲	F5.20	Press [Δ] to parameter [F5.20] Multi-Function Input Terminal X2 *(Refer to Page 29)*
11	Press *tekan* FUNC DATA	23	Press [FUNC/DATA] to enter Parameter F5.20 Default Setting [23]
12	Press *tekan* FUNC DATA	F5.20	Press [FUNC/DATA] to complete the new parameter change.
13	Press *tekan* ▲	F5.21	Press [Δ] to parameter [F5.21] Multi-Function Input Terminal X3 *(Refer to Page 29)*
14	Press *tekan* FUNC DATA	1	Press [FUNC/DATA] to enter Parameter F5.21 Default Setting [1]
15	Press *tekan* ▼	0	Press [∇] to new command [0] Disable *Refer to page 17*
16	Press *tekan* FUNC DATA	F5.21	Press [FUNC/DATA] to complete the new parameter change.
END	Press *tekan* PROG	0.00	Press [PROG] to return to Initial Display Screen

23)

How to start inverter run automatically when power is switch on

F1.00 set to [0]

F5.19 set to [22] - Forward

*** or F5.19 set to [23] for reverse direction**

F5.21 set to [0]

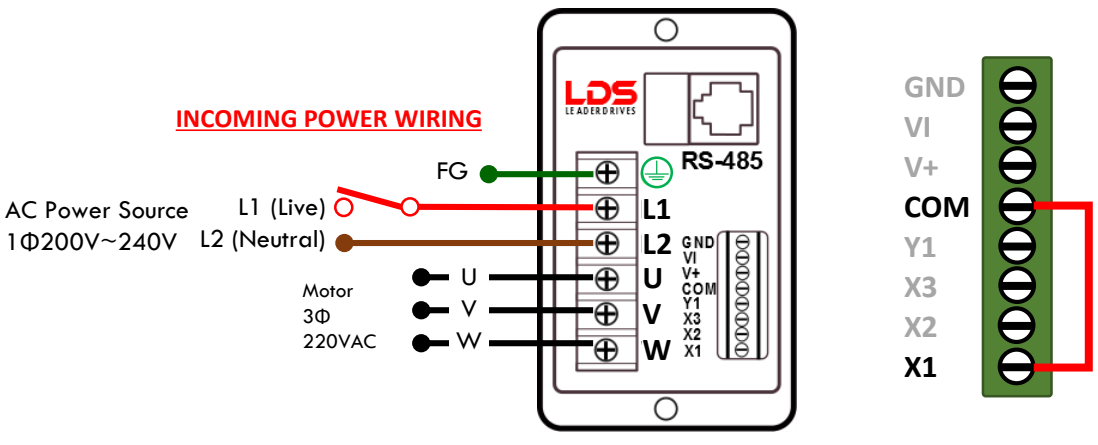
Connect Wire between Terminal X1 and Com

NOTE :

This setting is NOT recommended. We recommend user to wait for 3-4 seconds interval (after power is on), then only run the frequency (inverter))

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG	F0.00	Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan* ▲	F 1.00	Press [Δ] to parameter [F1.00] Multi-Function Parameter
3	Press *tekan* FUNC DATA	3	Press [FUNC/DATA] to enter Parameter F1.00 Default Setting [3]
4	Press *tekan* ▼	0	Press [∇] to new command [0] Start / Rev Command *Refer to page 17*
5	Press *tekan* FUNC DATA	F 1.00	Press [FUNC/DATA] to complete the new parameter change.
6	Press *tekan* ▲	F5. 19	Press [Δ] to parameter [F5.19] Multi-Function Input Terminal X1 *(Refer to Page 29)*
7	Press *tekan* FUNC DATA	22	Press [FUNC/DATA] to enter Parameter F5.19 Default Setting [22]
8	Press *tekan* FUNC DATA	F5. 19	Press [FUNC/DATA] to complete the new parameter change.
9	Press *tekan* ≪	F5. 19	Press [<<] to shift digit of Parameter : [F5.19]
10	Press *tekan* ▲	F5.21	Press [Δ] to parameter [F5.21] Multi-Function Input Terminal X3 *(Refer to Page 29)*
11	Press *tekan* FUNC DATA	1	Press [FUNC/DATA] to enter Parameter F5.21 Default Setting [1]
12	Press *tekan* ▼	0	Press [∇] to new command [0] Disable *Refer to page 17*
13	Press *tekan* FUNC DATA	F5.21	Press [FUNC/DATA] to complete the new parameter change.
END	Press *tekan* PROG	0.00	Press [PROG] to return to Initial Display Screen



24)

How to setup Emergency Stop Button :

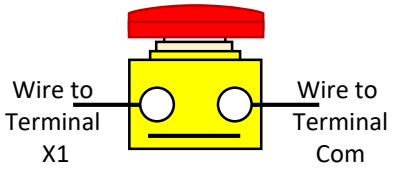
Motor operation is stopped,
But inverter is still power on.

F1.00 set to [0]
F5.19 set to [22]
F5.21 set to [0]

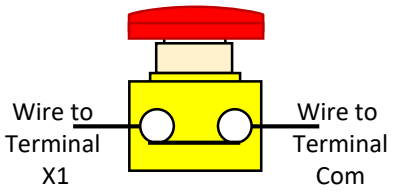
Connect a Emergency Switch between Terminal X1 and Com

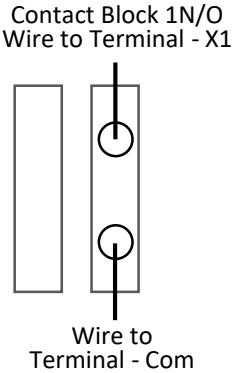
Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

EMERGENCY STOP OPERATION (Press)



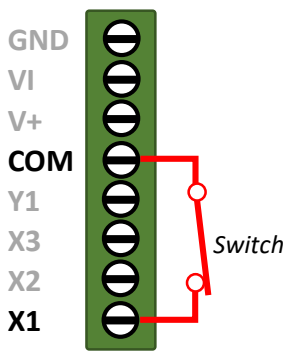
RESUME OPERATION (Release)



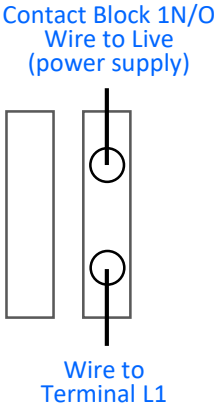


Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG	F0.00	Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan* ▲	F 1.00	Press [Δ] to parameter [F1.00] Multi-Function Parameter
3	Press *tekan* FUNC DATA	3	Press [FUNC/DATA] to enter Parameter F1.00 Default Setting [3]
4	Press *tekan* ▼	0	Press [∇] to new command [0] Start / Rev Command *Refer to page 17*
5	Press *tekan* FUNC DATA	F 1.00	Press [FUNC/DATA] to complete the new parameter change.
6	Press *tekan* ▲	F5.19	Press [Δ] to parameter [F5.19] Multi-Function Input Terminal X1 *(Refer to Page 29)*
7	Press *tekan* FUNC DATA	22	Press [FUNC/DATA] to enter Parameter F5.19 Default Setting [22]
8	Press *tekan* FUNC DATA	F5.19	Press [FUNC/DATA] to complete the new parameter change.
9	Press *tekan* ≪	F5.19	Press [<<] to shift digit of Parameter : [F5.19]
10	Press *tekan* ▲	F5.21	Press [Δ] to parameter [F5.21] Multi-Function Input Terminal X3 *(Refer to Page 29)*
11	Press *tekan* FUNC DATA	1	Press [FUNC/DATA] to enter Parameter F5.21 Default Setting [1]
12	Press *tekan* ▼	0	Press [∇] to new command [0] Disable *Refer to page 17*
13	Press *tekan* FUNC DATA	F5.21	Press [FUNC/DATA] to complete the new parameter change.
END	Press *tekan* PROG	0.00	Press [PROG] to return to Initial Display Screen

TERMINAL AND WIRING



How to setup Emergency Stop Button :
Inverter power is cut (off)
Motor operation is stopped.
***Live wire is connected via Contact Block.**
***Neutral wire is connected to L2 of the inverter**



25)

How to use Sensor Relay to stop operation by using Jog Speed Setting (Motor rotation is stopped in shorter time compared to Coast to Stop function)

F2.16 set to [0]
F2.19 set to [0.1]
F5.19 set to [1] or [-1]

Sensor Relay between Terminal X1 and Com

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG	F0.00	Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan* ▲	F2.00	Press [Δ] to parameter [F2.00] Frequency Parameter
3	Press *tekan* ≪	F2.00	Press [<<] to shift digit of Parameter : [F2.00]
4	Press *tekan* ▲	F2.16	Press [Δ] to parameter [F2.16] Jog Speed *(Refer to Page 20)*
5	Press *tekan* FUNC DATA	6.00	Press [FUNC/DATA] to enter Parameter F2.16 Default Setting [6.00] Hertz
6	Press *tekan* ≪	6.00	Press [<<] twice to shift digit of frequency command : [6.00]
7	Press *tekan* ▼	0.00	Press [∇] to new command [0.00] JogSpeed at Zero Hertz *Refer to page 20*
8	Press *tekan* FUNC DATA	F2.16	Press [FUNC/DATA] to complete the new parameter change.
9	Press *tekan* ▲	F2.19	Press [Δ] to parameter [F2.19] Primary Deceleration Time *(Refer to Page 21)*
10	Press *tekan* FUNC DATA	2.0	Press [FUNC/DATA] to enter Parameter F2.19 Default Setting [2.0]
11	Press *tekan* ▼	0.1	Press [∇] to new command [0.1] Deceleration time at 0.1second
12	Press *tekan* FUNC DATA	F2.19	Press [FUNC/DATA] to complete the new parameter change.
13	Press *tekan* ≪	F2.19	Press [<<] to shift digit of frequency command : [F2.19] Frequency Parameter
14	Press *tekan* ▲	F5.19	Press [Δ] to parameter [F5.19] Multi-Function Input Terminal X1 *(Refer to Page 29)*
15	Press *tekan* FUNC DATA	22	Press [FUNC/DATA] to enter Parameter F5.19 Default Setting [22]
16	Press *tekan* ▼	1	Press [∇] to new command [1] Jog Speed Command *Refer to page 29*
17	Press *tekan* FUNC DATA	F5.19	Press [FUNC/DATA] to complete the new parameter change.
END	Press *tekan* PROG	0.00	Press [PROG] to return to Initial Display Screen

CONTINUE NEXT PAGE
SENSOR INFORMATION & WIRING DIAGRAM

TERMINAL AND WIRING

Model : Omron Photoelectric Sensor (Output Relay Type)

Type : E3JK-TR11 (Through-Beam Type)

****Emitter + Receiver***

Type : E3JK-DR11 (Diffuse Reflective Type)

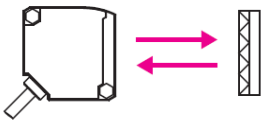
Sensor Voltage AC 24 ~ 240V

Inverter Incoming Power Supply AC 240V

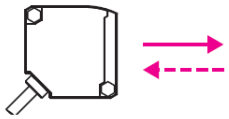
Sensing Method

Through-Beam Type
****Emitter + Receiver***

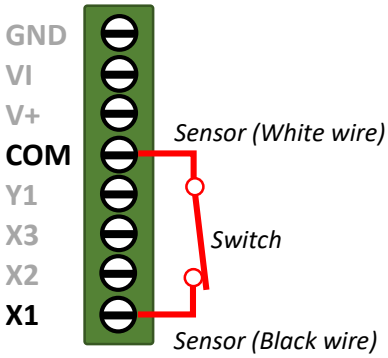
Retro-Reflective Type

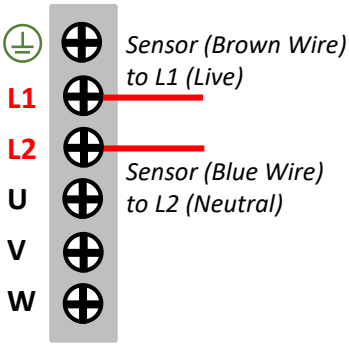


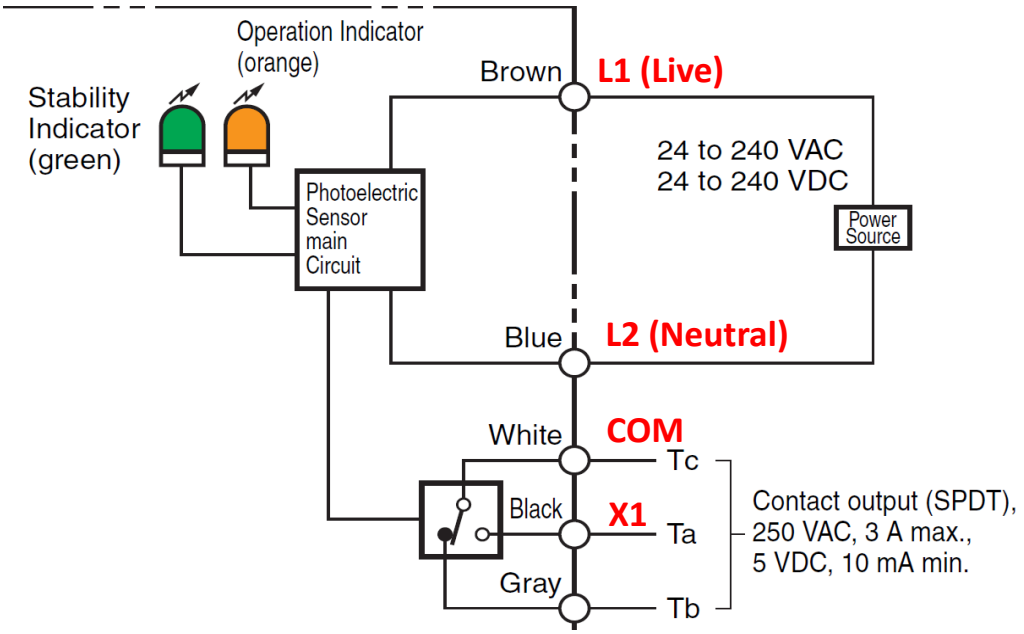
Diffuse-Reflective Type



TERMINAL AND WIRING





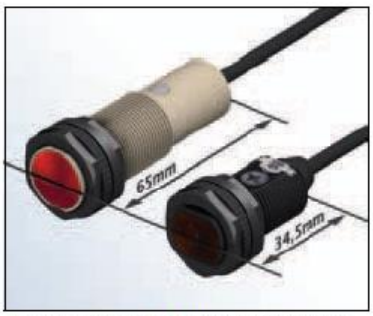


TERMINAL AND WIRING

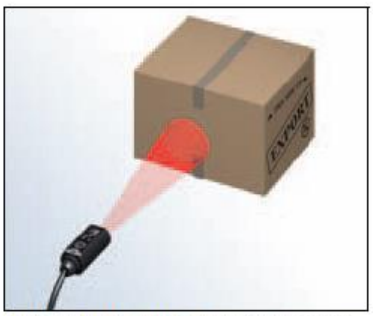
Sensor Model : Omron E3FA-DN12

Voltage 10 ~ 30VDC

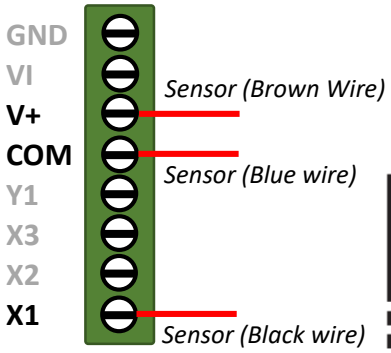
Inverter Terminal Output 0~10VDC

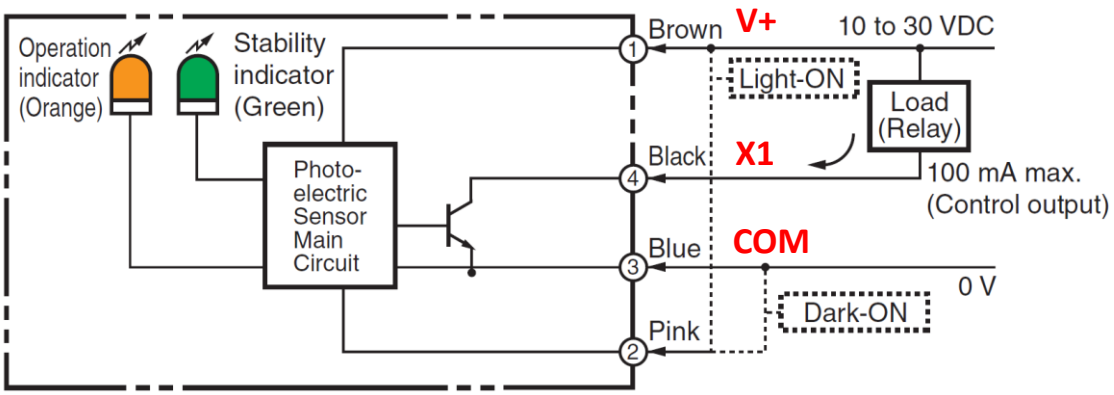


Compact size and shape. Can be installed almost anywhere.



Visible LED light for easy alignment.





27)

How to use run Forward and Reverse direction with different speed.

E.G
Forward at 40Hz
Reverse at 30Hz

F0.18 set to [1]
F1.00 set to [0]
F2.00 set to [40]
F2.01 set to [30]
F5.19 set to [22]
F5.20 set to [23]
F5.21 set to [3]

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG	F0.00	Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan* ≪	F0.00	Press [<<] to shift digit of parameter : [F0.00]
3	Press *tekan* ▲	F0.18	Press [Δ] to parameter : [F0.18] Show Complete Parameter *(Refer to Page 16)*
4	Press *tekan* FUNC DATA	0	Press [FUNC/DATA] to enter Parameter F1.00 Default Setting [0] – Simple Parameter
5	Press *tekan* ▲	1	Press [Δ] to new command : [1] Complete Parameter *Refer to page 16*
6	Press *tekan* FUNC DATA	F0.01	Press [FUNC/DATA] to complete the new parameter change.
7	Press *tekan* ≪	F0.01	Press [<<] to shift digit of parameter : [F0.01]
8	Press *tekan* ▲	F 1.00	Press [Δ] to parameter [F1.00] Operation Parameter
9	Press *tekan* FUNC DATA	3	Press [FUNC/DATA] to enter Parameter F1.00 Default Setting [3]
10	Press *tekan* ▼	0	Press [∇] to new command [0] Forward or Reverse Command - *Refer to page 17*
11	Press *tekan* FUNC DATA	F 1.00	Press [FUNC/DATA] to complete the new parameter change.
12	Press *tekan* ▲	F2.00	Press [Δ] to parameter [F2.00] Frequency Parameter
13	Press *tekan* FUNC DATA	50.00	Press [FUNC/DATA] to enter Parameter F2.00 Default Setting [50.00]
14	Press *tekan* ≪	50.00	Press [<<] to shift digit of frequency command : [50.00]
15	Press *tekan* ▼	40.00	Press [∇] to new command [40.00] Forward @ 40Hz *Refer to page 20*
16	Press *tekan* FUNC DATA	F2.00	Press [FUNC/DATA] to complete the new parameter change.

CONTINUE NEXT PAGE

CONTINUE NEXT PAGE
SENSOR INFORMATION & WIRING DIAGRAM

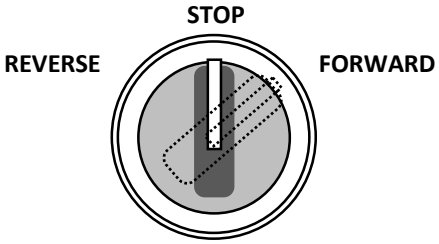
27 - Continued

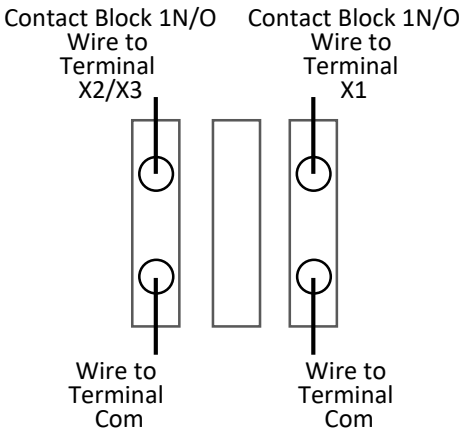
How to use run Forward and Reverse direction with different speed.

E.G : Forward at 40Hz
Reverse at 30Hz

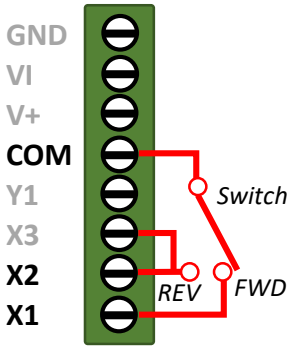
F0.18 set to [1]
F1.00 set to [0]
F2.00 set to [40]
F2.01 set to [30]
F5.19 set to [22]
F5.20 set to [23]
F5.21 set to [3]

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)





TERMINAL AND WIRING



Step	Action	Screen Display (after action)	Remark
17	Press *tekan* ≪	F2.00	Press [<<] to shift digit of Parameter : [F2.00]
18	Press *tekan* ▲	F2.01	Press [Δ] to parameter [F2.01] Preset Speed 2 *(Refer to Page 20)*
19	Press *tekan* FUNC DATA	10.00	Press [FUNC/DATA] to enter Parameter F2.01 Default Setting [10.00]
20	Press *tekan* ≪	10.00	Press [<<] to shift digit of frequency command : [10.00]
21	Press *tekan* ▲	30.00	Press [Δ] to new command [30.00] Reverse @ 30Hz *Refer to page 20*
22	Press *tekan* FUNC DATA	F2.01	Press [FUNC/DATA] to complete the new parameter change.
23	Press *tekan* ≪	F2.01	Press [<<] to shift digit of parameter : [F2.01]
24	Press *tekan* ▲	F5.19	Press [Δ] to parameter [F5.19] Multi-Function Input Terminal X1 *(Refer to Page 29)*
25	Press *tekan* FUNC DATA	22	Press [FUNC/DATA] to enter Parameter F5.19 Default Setting [22]
26	Press *tekan* FUNC DATA	F5.19	Press [FUNC/DATA] to complete the new parameter change.
27	Press *tekan* ≪	F5.19	Press [<<] to shift digit of Parameter : [F5.19]
28	Press *tekan* ▲	F5.20	Press [Δ] to parameter [F5.20] Multi-Function Input Terminal X2 *(Refer to Page 29)*
29	Press *tekan* FUNC DATA	10	Press [FUNC/DATA] to enter Parameter F5.20 Default Setting [10]
30	Press *tekan* ▲	23	Press [Δ] to new command [23] Reverse *Refer to page 17*
31	Press *tekan* FUNC DATA	F5.20	Press [FUNC/DATA] to complete the new parameter change.
32	Press *tekan* ▲	F5.21	Press [Δ] to parameter [F5.21] Multi-Function Input Terminal X3 *(Refer to Page 29)*
33	Press *tekan* FUNC DATA	24	Press [FUNC/DATA] to enter Parameter F5.21 Default Setting [24]
34	Press *tekan* ▼	3	Press [∇] to new command [3] Multi Speed Level 1 Command *(Refer to page 29)*
35	Press *tekan* FUNC DATA	F5.21	Press [FUNC/DATA] to complete the new parameter change.
END	Press *tekan* PROG	0.00	Press [PROG] to return to Initial Display Screen

29)

How to duplicate parameter Between different inverter Via Remote Keypad.

***Please use Ethernet Cable to connect the Keypad to the Inverter 1st before making this setting.**

28A)

How to duplicate parameter from Inverter to Remote Keypad (Read)

F0.20 set to [rdEE]

Portable Keypad
With Modbus (RS485) Communication.

Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG	F0.00	Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan* <<	F0.00	Press [<<] to shift digit of parameter : [F0.00]
3	Press *tekan* Δ	F0.20	Press [Δ] to parameter : [F0.20] Default Setting *(Refer to Page 16)*
4	Press *tekan* FUNC DATA	0	Press [FUNC/DATA] to enter Parameter F0.20 Default Setting [0] – Disabled
5	Press *tekan* Δ	rdEE	Press [Δ] to new command : [rdEE] Read/Copy the parameter from Inverter to Keypad (*Refer to page 16)*
6	Press *tekan* FUNC DATA	F0.20	Press [FUNC/DATA] to complete the new parameter change.
END	Press *tekan* PROG	0.00	Press [PROG] to return to Initial Display Screen

28B)

How to duplicate parameter from Remote Keypad to Inverter (Write)

F0.20 set to [UrEE]

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG	F0.00	Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan* <<	F0.00	Press [<<] to shift digit of parameter : [F0.00]
3	Press *tekan* Δ	F0.20	Press [Δ] to parameter : [F0.20] Default Setting *(Refer to Page 16)*
4	Press *tekan* FUNC DATA	0	Press [FUNC/DATA] to enter Parameter F0.20 Default Setting [0] – Disabled
5	Press *tekan* Δ	UrEE	Press [Δ] to new command : [rdEE] Write/duplicate the parameter from Keypad to Inverter (*Refer to page 16)*
6	Press *tekan* FUNC DATA	F0.20	Press [FUNC/DATA] to complete the new parameter change.
END	Press *tekan* PROG	0.00	Press [PROG] to return to Initial Display Screen

30)
How to use "SPEC" button on operation panel to run at 2nd Speed
(Multi-speed Level 2 command)

E.g. Primary speed is at 40Hz (based on user control via KNOB). Secondary Speed to run at 25Hz.

F1.17 set to [4]
F2.02 set to [25.00]

In this case, when the motor is running at primary speed. User press and hold on "SPEC" button on operation panel, inverter speed will be running at 25.00Hz.

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG	F0.00	Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan* ▲	F 1.00	Press [Δ] to parameter [F1.00] Operation Parameter
3	Press *tekan* ≪	F 1.00	Press [<<] to shift digit of Parameter : [F1.00]
4	Press *tekan* ▲	F 1.17	Press [Δ] to parameter [F1.17] SPEC Key Setting *(Refer to Page 19)*
5	Press *tekan* FUNC DATA	0	Press [FUNC/DATA] to enter Parameter F1.17 Default Setting [0] Disable
6	Press *tekan* ▲	4	Press [Δ] to new command [4] JogSpeed at Zero Hertz *Refer to page 20*
7	Press *tekan* FUNC DATA	F 1.17	Press [FUNC/DATA] to complete the new parameter change.
8	Press *tekan* ≪	F 1.17	Press [<<] to shift digit of Parameter : [F1.17]
9	Press *tekan* ▲	F2.00	Press [Δ] to parameter [F2.00] Frequency Parameter *(Refer to Page 20)*
10	Press *tekan* ≪	F2.00	Press [<<] to shift digit of Parameter : [F2.00]
11	Press *tekan* ▲	F2.02	Press [Δ] to parameter [F2.02] Preset Speed 3 *(Refer to Page 20)*
12	Press *tekan* FUNC DATA	20.00	Press [FUNC/DATA] to enter Parameter F2.02 Default Setting [20.00] Hz
13	Press *tekan* ≪	20.00	Press [Δ] to shift digit of frequency command : [20.00] Hz
14	Press *tekan* ▲	25.00	Press [Δ] to new command [25.00] Preset Speed 3 at 25Hz *Refer to page 20*
15	Press *tekan* FUNC DATA	F2.02	Press [FUNC/DATA] to complete the new parameter change.
END	Press *tekan* PROG	0.00	Press [PROG] to return to Initial Display Screen

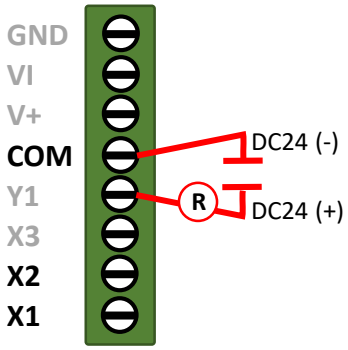
31)

How to give alarm signal to PLC via Relay

IGBT to give alarm signal to PLC via Relay,
when alarm signal is on, trigger one unit relay.

Com connect to power supply -24V
+24V connect to relay coil / Y1

TERMINAL AND WIRING



32)

How to restore parameter to original Factory Setting (For Malaysia / Singapore / Thailand / Indonesia)

F0.20 set to [dF50]

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press *tekan* PROG	F0.00	Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press *tekan* <<	F0.00	Press [<<] to shift digit of parameter : [F0.00]
3	Press *tekan* Δ	F0.20	Press [Δ] to parameter : [F0.20] Default Setting *(Refer to Page 16)*
4	Press *tekan* FUNC DATA	0	Press [FUNC/DATA] to enter Parameter F0.20 Default Setting [0] – Disabled
5	Press *tekan* Δ	dF50	Press [Δ] to new command : [dF50] Default the factory setting of 50Hz *Refer to page 16*
6	Press *tekan* FUNC DATA	F0.20	Press [FUNC/DATA] to complete the new parameter change.
END	Press *tekan* PROG	0.00	Press [PROG] to return to Initial Display Screen

After Factory Setting Reset/Restore, please amend the following parameter to the LDS Setting

Func-tion	Description	Initial Factory Setting (TW)	LDS Setting (MY-SG-TH)
F0.01	Parameter Lock (Changeable/Lock)	0	0 (Un-Lock) 1 (Lock)
F0.18	Parameter List (Simple/Complete)	0 (Simple)	1 (Complete)
F0.20	Default Setting (Taiwan / Malaysia)	dF60	dF50
F1.21	Switching Frequency	2	4
F2.16	Jog Speed	6.0Hz	0.0Hz
F2.18	Acceleration Time	5.0s	2.0s
F2.19	Deceleration Time	5.0s	2.0s
F2.32	Maximum Output Frequency	50.0Hz	60.0Hz
F2.48	Minimum Output Frequency	0.0Hz	0.0Hz
F4.07	Overload Protection (Independent)	1	2
F4.08	Overload Protection Setting - Motor's Rated Ampere	0.3A ~ 1.5A Based on Motor Spec	
F4.10	OVLP Tripped Time	0.5 (30s)	0.5 (30s)
F5.08	Analogue Frequency Dead Band	0.00	0.05
F5.19	X1 Terminal	22	22 (Forward)
F5.20	X2 Terminal	23	23 (Reverse)
F5.21	X3 Terminal	10	1 (Jog Speed)
F5.25	Digital Response Time	10	3

LDS Compact Motor Ampere

Motor Power	Rated Ampere	F4.08 Setting
25W	0.23	0.3
40W	0.36	0.4
60W	0.50	0.6
90W	0.65	0.7
120W	0.75	0.8
150W	0.95	1.00
180W	1.04	1.10
200W	1.10	1.10
(6IK) 200W	1.00	1.10

LDS Small Gear Motor Ampere

Motor Power	Rated Ampere	F4.08 Setting
0.1kW	0.7	0.8
0.2kW	1.2	1.3
0.25kW	1.3	1.4

33)

How to use Momentary Switch to adjust running frequency (Up/Down)

F1.00 set to [0]
F1.01 set to [4]
F5.19 set to [22]
F5.20 set to [14]
F5.21 set to [15]
F5.30 set to [1]
F5.31 set to [10]
F5.32 set to [2]

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

Remark:

F5.30 : UP/DOWN Memory Selection (pg.30 or pg.70 of full manual)

F5.30 set to [0] : Erase UP/DOWN frequency command when power off
F5.30 set to [1] : **Store UP/DOWN frequency command when power off**

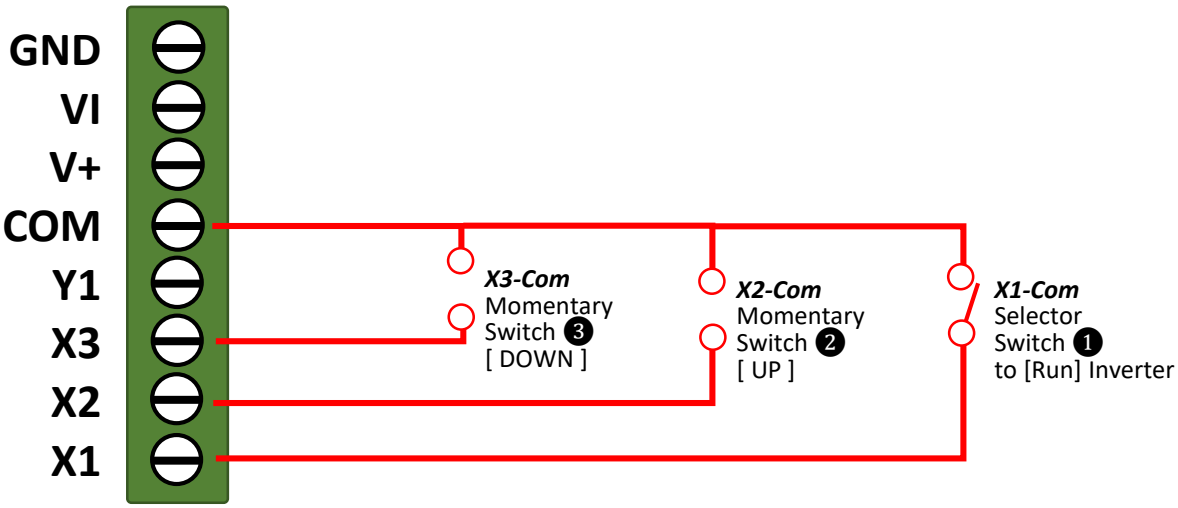
F5.31 UP/DOWN Frequency Calibration (pg.30 or pg.70 of full manual)

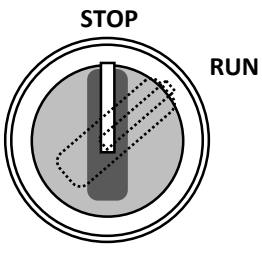
F5.31 set to [10] : **Frequency adjust by 1Hz per press on momentary switch (10 x base frequency 0.1Hz)**
F5.31 set to [20] : Frequency adjust by 2Hz per press on momentary switch (20 x base frequency 0.1Hz)
*Max is [250] : Frequency adjust by 25Hz per press on momentary switch (250 x base frequency 0.1Hz)

F5.32 UP/DOWN Calibration Time (pg.31 or pg.70 of full manual)

F5.32 set to [1] : Pressing momentary button for more than 1second to adjust frequency continuously.
F5.32 set to [2] : **Pressing momentary button for more than 2seconds to adjust frequency continuously.**
F5.32 set to [5] : Pressing momentary button for more than 5seconds to adjust frequency continuously.
F5.32 set to [6] : Edge Trigger - Pressing momentary button 1 time to adjust frequency continuously.

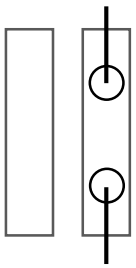
TERMINAL AND WIRING





X1-Com
Selector
Switch 1
to [Run] Inverter

Contact Block 1N/O
Wire to Terminal - X1



Wire to
Terminal - Com

34)

How to use Momentary Switch to adjust running frequency (Up/Down), and Momentary Switch to Clean Up/Down Frequency Command

* For this function, User need to press [RUN] button to start operation every time.

F1.00 set to [1]
F1.01 set to [4]
F5.19 set to [14]
F5.20 set to [15]
F5.21 set to [16]
F5.30 set to [0]
F5.31 set to [10]
F5.32 set to [2]

Please Un-LOCK your inverter 1st before you can make any chances to other parameter (See Pg. 8)

Remark:

F5.30 : UP/DOWN Memory Selection (pg.30 or pg.70 of full manual)

F5.30 set to [0] : **Erase UP/DOWN frequency command when power off**
F5.30 set to [1] : Store UP/DOWN frequency command when power off

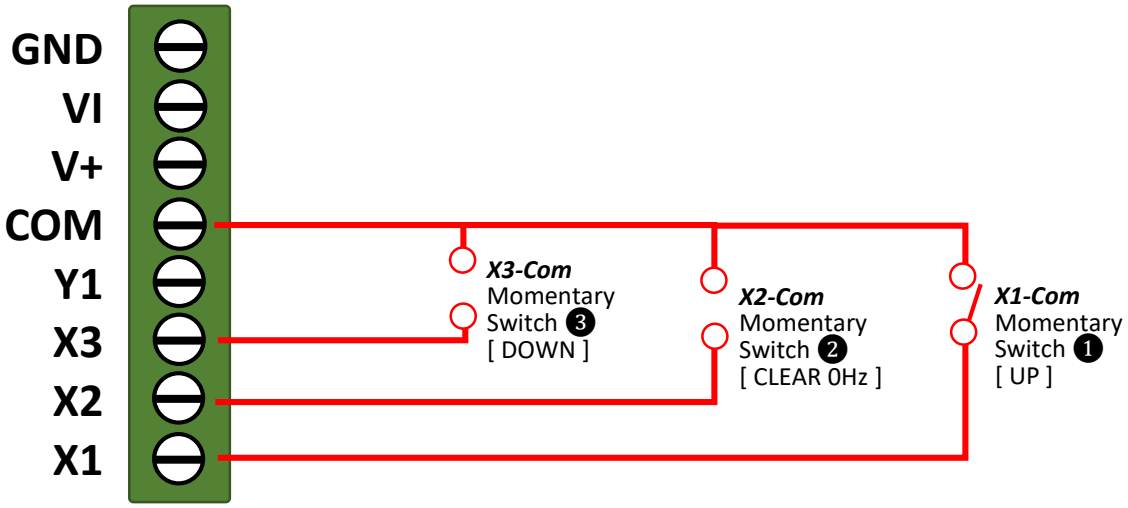
F5.31 UP/DOWN Frequency Calibration (pg.30 or pg.70 of full manual)

F5.31 set to [10] : **Frequency adjust by 1Hz per press on momentary switch (10 x base frequency 0.1Hz)**
F5.31 set to [20] : Frequency adjust by 2Hz per press on momentary switch (20 x base frequency 0.1Hz)
*Max is [250] : Frequency adjust by 25Hz per press on momentary switch (250 x base frequency 0.1Hz)

F5.32 UP/DOWN Calibration Time (pg.31 or pg.70 of full manual)

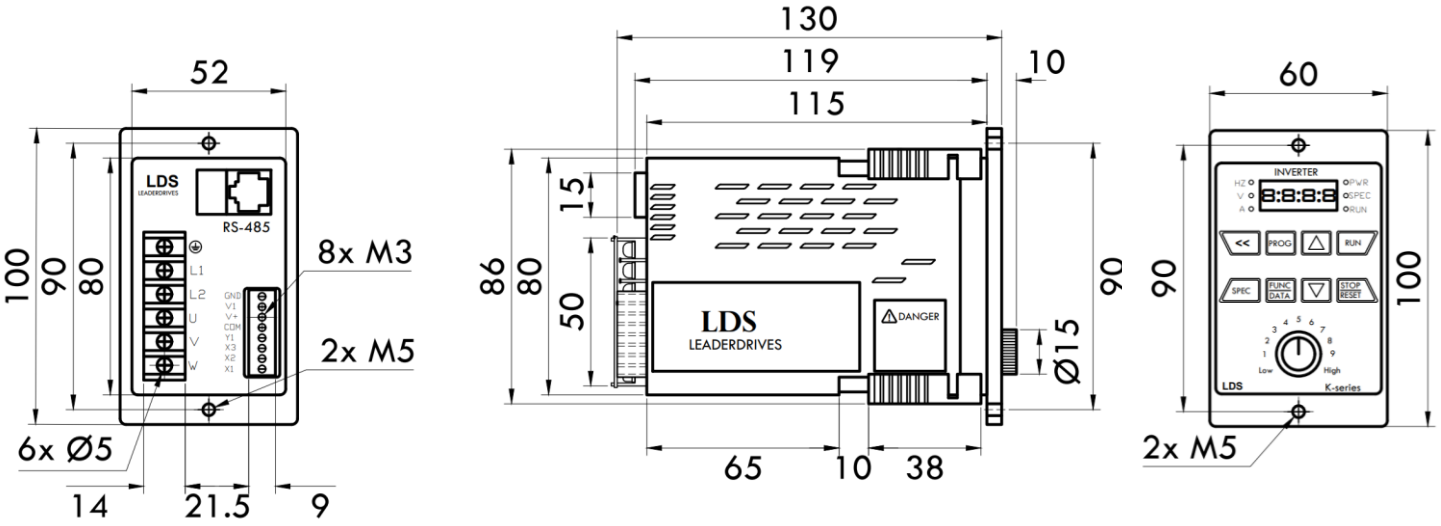
F5.32 set to [1] : Pressing momentary button for more than 1second to adjust frequency continuously.
F5.32 set to [2] : **Pressing momentary button for more than 2seconds to adjust frequency continuously.**
F5.32 set to [5] : Pressing momentary button for more than 5seconds to adjust frequency continuously.
F5.32 set to [6] : Edge Trigger - Pressing momentary button 1 time to adjust frequency continuously.

TERMINAL AND WIRING



DIMENSION – COMPACT IGBT INVERTER

Compact Inverter with LED Digital Display



DIMENSION – PORTABLE KEYPAD

The keypad

- Enable remote control of the inverter via Modbus (RS485) Communication.
- Duplication of parameter from Inverter to Inverter.