

Basic set-up guide FAN/PUMP suggested LS inverter settings S100

	Parameter	Description	Unit	Default set	Suggested set	Notes
Operation Group	Acc	Accelerating time	seconds	*20.0	5 to 60	Increase if overcurrent 'OCt' trip occurs on accelerating. If PID control, set = 0.1
	Dec	Decelerating time	seconds	**30.0	As required	Increase if overvoltage 'Ovt' trip occurs on stopping or decelerating. If PID control, set = 0.1
	Drv	Command source	-	1	1	Connect 'RUN FORWARD' contact between terminals 'P1' and 'CM' or '24'. Close to RUN, open to STOP.
	Frq	Frequency Ref source	-	0	2 or 3	Set 2 if using 0-10V input on terminal 'V1'. Set 5 if using mA signal on terminal 'I2'
<i>No more essential parameters in this group</i>						

Drive - Group	dr.09	Control Mode	-	0	0	0 = V/F control for light duty applications
	dr.14	Motor power	KW	*	!	Factory set 1:1 to inverter size. Change if lower or higher power motor is connected especially when using dual rating.
	dr.18	Base Frequency	Hz	60.00	50.00	Set to frequency shown on motor rating plate (normally 50Hz in UK/Europe)
	dr.20	Max. Output Frequency	Hz	60.00	50.00	Sets maximum allowable frequency (motor speed) - reduce to 50.00 for UK/European motors.
	dr.93	Parameter Initialize	-	-	N/A	Set to 0 to set ALL groups back to factory set values
<i>No more essential parameters in this group</i>						

Basic - Group	ba.10	Input Power Frequency	Hz	60.00	50.00	Set to 50Hz if using in UK/Europe etc
	ba.11	Pole number	-	4	As required	Check motor rating plate rpm data. ie, 1500 (-1 to -10%) = 4, 1000 (-1 to -10%) = 6, 3000 (-1 to -10%) = 2, etc
	ba.13	Motor rated current	A	-	As required	Set to motor rating plate current. (Be careful to use the correct value if star/delta or 50/60Hz values are given)
	ba.15	Motor rated voltage	V	-	As required	Set to motor rating plate value
	ba.19	AC Input voltage	V	380	400	Set to 400V or whatever the input line to line voltage is.

Advanced - Group	Ad.24	Frequency limits select	-	0	1	Set to 1 to allow changes to upper and lower frequency (speed) limits
	Ad.25	Low limit	Hz	0.50	0.50 (or higher)	
	Ad.26	High Limit	Hz	60.00	50.00 (or lower)	
	Ad.64	Cooling Fan operation	-	0	2	0 = Fan operates when inverter output is ON; 2 = Fan operates on internal thermostat (only runs when needed)
<i>No more essential parameters in this group</i>						

Control - Group	Cn.04	Carrier Frequency	kHz	3	As required	Increase if low audible motor noise is required. Keep value low if enclosure is small or motor cable is long
	<i>No more essential parameters in this group</i>					

Input - Group	In.08	Terminal 'V1' min. volts	V	0.00	0	Sets terminal 'V1' minimum voltage for external potentiometer operation.
	In.09	Output frequency at In.08	%	0.00	As required	Fixes the motor / output frequency when terminal 'V1' is at voltage set in parameter In.08
	In.10	Terminal 'V1' max. volts	V	10	10	Sets terminal 'V1' maximum voltage for external potentiometer operation.
	In.11	Output frequency at In.10	%	100.00	As required	Fixes the motor / output frequency when terminal 'V1' is at voltage set in parameter In.10
	In.53	Terminal 'I2' min. current	mA	4.00	0.00 or 4.00	Sets terminal 'I2' minimum current when an external milli Amp loop is used to give the speed reference
	In.54	Output frequency at In.53	Hz	0	As required	Fixes the motor / output frequency when terminal 'I2' is at mA level set in parameter In.53
	In.55	Terminal 'I2' max. current	mA	20.00	20.00	Sets terminal 'I2' maximum current when an external milli Amp loop is used to give the speed reference
	In.56	Output frequency at In.55	%	100.00	As required	Fixes the motor / output frequency when terminal 'I' is at mA level set in parameter In.55

Protection - Group	Pr.04	Load Duty	-	1	0	Set to '0' for normal duty applications and if motor is one size bigger (KW) than inverter rating (KW)
	Pr.05	Phase-loss protection	-	Binary	As required	Set to '01' for output (motor) phase loss protection, '10' for input phase loss protection, and '11' for both
<i>No more essential parameters in this group</i>						

***3.0kHz up to 22KW

Denotes **MUST** check / set parameters for best operation

All others are relative to the design requirements of the equipment and/or application or environment.

Basic set-up guide HEAVY DUTY APPLICATION suggested LS inverter settings S100

	Parameter	Description	Unit	Default set	Suggested set	Notes
Operation Group	Acc	Accelerating time	seconds	*20.0	2 to 5	Increase if overcurrent 'OC' trip occurs on accelerating. If PID control, set = 0.1
	Dec	Decelerating time	seconds	**30.0	2 to 10+	Increase if overvoltage 'Ov' trip occurs on stopping or decelerating. If PID control, set = 0.1
	Drv	Command source	-	1	1	Connect 'RUN FORWARD' contact between terminals 'P1' and 'CM' or '24'. Close to RUN, open to STOP.
	Frq	Frequency Ref source	-	0	2 or 3	Set 2 if using 0-10V input on terminal 'V1'. Set 5 if using mA signal on terminal 'I2'
<i>No more essential parameters in this group</i>						

Drive - Group	dr.09	Control Mode	-	0	0 or 4	0 = V/F control; 4 = IM Sensorless Vector control (may be needed if increased starting torque is required)
	dr.14	Motor power	KW	*	!	Factory set 1:1 to inverter size. Change if lower or higher power motor is connected.
	dr.18	Base Frequency	Hz	60.00	50.00	Set to frequency shown on motor rating plate (normally 50Hz in UK/Europe)
	dr.20	Max. Output Frequency	Hz	60.00	50.00	Sets maximum allowable frequency (motor speed) - reduce to 50.00 for UK/European motors.
	dr.93	Parameter Initialize	-	-	N/A	Set to 0 to set ALL groups back to factory set values
<i>No more essential parameters in this group</i>						

Basic - Group	ba.10	Input Power Frequency	Hz	60.00	50.00	Set to 50Hz if using in UK/Europe etc
	ba.11	Pole number	-	4	As required	Check motor rating plate rpm data. ie, 1500 (-1 to -10%) = 4, 1000 (-1 to -10%) = 6, 3000 (-1 to -10%) = 2, etc
	ba.12	Rated slip	RPM	-	As required	Enter a value which is the synchronous speed - rotor speed. Ex: 1500 - 1420 = 80, so enter '80'
	ba.13	Motor rated current	A	-	As required	Set to motor rating plate current. (Be careful to use the correct value if star/delta or 50/60Hz values are given)
	ba.15	Motor rated voltage	V	-	As required	Set to motor rating plate value
	ba.19	AC Input voltage	V	380	400	Set to 400V or whatever the input line to line voltage is.
	ba.20	Auto Tuning	-	0	0 or 2	0 = standard factory installed motor parameters apply; 2 = auto-tuning routine, installs actual connected motor values.

Advanced - Group	Ad.24	Frequency limits select	-	0	1	Set to 1 to allow changes to upper and lower frequency (speed) limits
	Ad.25	Low limit	Hz	0.50	0.50 (or higher)	
	Ad.26	High Limit	Hz	60.00	50.00 (or lower)	
	Ad.64	Cooling Fan operation	-	0	2	0 = Fan operates when inverter output is ON; 2 = Fan operates on internal thermostat (only runs when needed)
<i>No more essential parameters in this group</i>						

Control - Group	Cn.04	Carrier Frequency	kHz	3	As required	Increase if low audible motor noise is required. Keep value low if enclosure is small or motor cable is long
	<i>No more essential parameters in this group</i>					

Input - Group	In.08	Terminal 'V1' min. volts	V	0.00	0	Sets terminal 'V1' minimum voltage for external potentiometer operation.
	In.09	Output frequency at In.08	%	0.00	As required	Fixes the motor / output frequency when terminal 'V1' is at voltage set in parameter In.08
	In.10	Terminal 'V1' max. volts	V	10	10	Sets terminal 'V1' maximum voltage for external potentiometer operation.
	In.11	Output frequency at In.10	%	100.00	As required	Fixes the motor / output frequency when terminal 'V1' is at voltage set in parameter In.10
	In.53	Terminal 'I2' min. current	mA	4.00	0.00 or 4.00	Sets terminal 'I2' minimum current when an external milli Amp loop is used to give the speed reference
	In.54	Output frequency at In.53	Hz	0	As required	Fixes the motor / output frequency when terminal 'I2' is at mA level set in parameter In.53
	In.55	Terminal 'I2' max. current	mA	20.00	20.00	Sets terminal 'I2' maximum current when an external milli Amp loop is used to give the speed reference
	In.56	Output frequency at In.55	%	100.00	As required	Fixes the motor / output frequency when terminal 'I' is at mA level set in parameter In.55

Protection - Group	Pr.04	Load Duty	-	1	1	Leave set to '1' to enable 'Heavy Duty' or constant torque application settings (conveyor, mixer, etc)
	Pr.05	Phase-loss protection	-	Binary	As required	Set to '01' for output (motor) phase loss protection, '10' for input phase loss protection, and '11' for both
<i>No more essential parameters in this group</i>						

***3.0kHz up to 22KW

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*Note: Parameters Dr.09 and ba.20 are meant to be used together - ie don't change Dr.09 to 4 without setting ba.20 to 2