



THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

Engineer's Seal

METCALFE LIFT PUMPING STATION
2022 UPGRADES
VARIABLE FREQUENCY DRIVE SETTING LETTER
LIFT PUMP
P-L01

City Document Number 5-0162L-E0001-001

Project 864-2022 METCALFE LIFT PUMPING STATION 2022 UPGRADES

Rev.	Description	Date	Created By	Checked By	Approved By
0	Issued For Construction	2023/02/27	J. Osioy		

VFD Data	Control Schematics: 1-0162L-E0012				
	Size:	22kW/30HP	Voltage:	600 VAC	Nominal Output Current: 34 A
	Manufacturer:	Schneider Electric	Model:	ATV630D22S6	Nominal Efficiency: 98 %

Motor Data	Power:	20HP	Voltage:	575 VAC	Speed:	1180 RPM	
	Manufacturer:	Nidec Motor Corp	Model:	TBD	Pump Rating:	TBD	
	FLA:	19.5	Code:	G	Power Factor:	83.6%	Service Factor:

Parameter	Description	Set Point	Note	Rev.
<i>Mtd-bFr</i>	Motor Standard	[60 Hz NEMA] 60	1	00
<i>Mtd-nPr</i>	Nominal Motor Power	14.9kW		00
<i>Mtd-uns</i>	Nominal Motor Voltage	575 VAC		00
<i>Mtd-nCr</i>	Nominal Motor Current	19.5 A		00
<i>Mtd-FrS</i>	Nominal Motor Frequency	60 Hz		00
<i>Mtd-nSP</i>	Nominal Motor Speed	1180 RPM		00
<i>Mtd-itH</i>	Motor Th Current (FLA x S.F.)	22.5 A		00
<i>CrP-tCC</i>	Type of wiring: 2/3-Wire Control	[2-Wire Control] 2C	2	00
<i>Mtd-tFr</i>	Maximum Motor Frequency	72 Hz		00
<i>PSt-LSP</i>	Low Speed	41 Hz		00
<i>PSt-HSP</i>	High Speed	60 Hz		00
<i>PSt-ACC</i>	Acceleration	5.00 s		00
<i>PSt-dEC</i>	Deceleration	5.00 s		00
<i>MCr-APPt</i>	Application Selection	[Generic Pump Control] GPMP	2	00
<i>MPA-Ctt</i>	Motor Control Type	[U/F VC Quad.] uF9	2	00
<i>MPA-drt</i>	Dual Rating State	[Normal Duty] norMAL	2	00

Parameter	Description	Set Point	Note	Rev.
<i>Mtd-MPC</i>	Motor Parameter Choice	[Nominal Motor Power] <i>nPr</i>	2	00
<i>CrP-CHCF</i>	Control Mode	[I/O Profile] <i>io</i>		00
<i>CrP-Fr1</i>	Ref Freq 1 Config	[Not Configured] <i>no</i>		00
<i>CrP-Fr1b</i>	Ref Freq 1B Config	[AI2] <i>Ai2</i>		00
<i>CrP-rCb</i>	Ref 1B Switching	[DI3] <i>Li3</i>		00
<i>CrP-rin</i>	Reverse Disable	[No] <i>no</i>		00
<i>CrP-rFC</i>	Ref 2 Switching	[DI4] <i>Li4</i>		00
<i>CrP-Fr2</i>	Ref Freq 2 Config	[AI1] <i>Ai1</i>		00
<i>CrP-rrS</i>	Reverse Assign	[DI2] <i>Li2</i>		00
<i>Pid-Fdb-PiF</i>	PID Controller Feedback	[No] <i>no</i>		00
<i>Stt-Stt</i>	Type of Stop	[Freewheel] <i>nSt</i>		00
<i>Ai1-Ai1t</i>	AI1 Type	[Voltage] <i>10u</i>	2	00
<i>Ai1-uiL1</i>	AI1 Min. Value	<i>0.0 Vdc</i>	2	00
<i>Ai1-uiH1</i>	AI1 Max. Value	<i>10.0 Vdc</i>	2	00
<i>Ai1-Ai1F</i>	AI1 Filter	<i>0.10 s</i>		00
<i>Ai1-Ai1E</i>	AI1 Interm. Point X	<i>0%</i>		00
<i>Ai1-Ai1S</i>	AI1 Interm. Point Y	<i>0%</i>		00
<i>Ai1-Ai1L</i>	AI1 Range	[0-100%] <i>PoS</i>	2	00
<i>Ai2-Ai2t</i>	AI2 Type	[Current] <i>0A</i>		00
<i>Ai2-CrL2</i>	AI2 Min. Value	<i>4 mA</i>		00
<i>Ai2-CrH2</i>	AI2 Max. Value	<i>20 mA</i>	2	00
<i>Ai2-Ai2F</i>	AI2 Filter	<i>0.10 s</i>		00
<i>Ai2-Ai2E</i>	AI2 Interm. Point X	<i>0.0%</i>		00
<i>Ai2-Ai2S</i>	AI2 Interm. Point Y	<i>0.0%</i>		00
<i>Ai2-Ai2L</i>	AI2 Range	[0-100%] <i>PoS</i>	2	00
<i>Ao1-Ao1</i>	AQ1 Assignment	[Motor Frequency] <i>oCr</i>	2	00
<i>Ao1-Ao1t</i>	AQ1 Type	[Current] <i>0A</i>	2	00
<i>Ao1-AoL1</i>	AQ1 Min. Output	<i>4.0 mA</i>		00
<i>Ao1-AoH1</i>	AQ1 Max Output	<i>20.0 mA</i>	2	00
<i>Ao1-ASL1</i>	Scaling AQ1 min	<i>0.0%</i>	2	00
<i>Ao1-ASH1</i>	Scaling AQ1 max	<i>100.0%</i>	2	00
<i>Ao1-Ao1F</i>	AQ1 Filter	<i>2.0 s</i>		00
<i>Ao2-Ao2</i>	AQ2 Assignment	[Motor Current] <i>oFr</i>		00
<i>Ao2-Ao2t</i>	AQ2 Type	[Current] <i>0A</i>	2	00
<i>Ao2-AoL2</i>	AQ2 Min. Output	<i>4.0 mA</i>		00
<i>Ao2-AoH2</i>	AQ2 Max Output	<i>20.0 mA</i>	2	00
<i>Ao2-ASL2</i>	Scaling AQ2 min	<i>0.0%</i>	2	00
<i>Ao2-ASH2</i>	Scaling AQ2 max	<i>100.0%</i>	2	00
<i>Ao2-Ao2F</i>	AQ2 Filter	<i>2.0 s</i>		00
<i>rELA-r1</i>	Relay 1 Assignment	[Operating State Fault] <i>FLt</i>		00
<i>rELA-r2</i>	Relay 2 Assignment	[Forward] <i>MFrD</i>		00
<i>rELA-r3</i>	Relay 3 Assignment	[Reverse] <i>MrrS</i>		00
<i>rELA-r1d</i>	Relay 1 Delay Time	<i>0 ms</i>	2	00

Parameter	Description	Set Point	Note	Rev.
<i>rELA-r1S</i>	Relay 1 Active at	[1] PoS	2	00
<i>rELA-r1H</i>	Relay 1 Hold Time	0 ms	2	00
<i>rELA-r2d</i>	Relay 2 Delay Time	0 ms	2	00
<i>rELA-r2S</i>	Relay 2 Active At	[1] PoS	2	00
<i>rELA-r2H</i>	Relay 2 Hold Time	0 ms	2	00
<i>rELA-r3d</i>	Relay 3 Delay Time	0 ms	2	00
<i>rELA-r3S</i>	Relay 3 Active at	[1] PoS	2	00
<i>rELA-r3H</i>	Relay 3 Hold Time	0 ms	2	00
<i>oPL-oPL</i>	Output Phase Loss Assign	[OPF Error Triggered] YES	2	00
<i>oPL-odt</i>	Output Phase Loss Delay	0.5 s	2	00
<i>iPL-iPL</i>	Input Phase Loss Assign	[Freewheel] YES	2	00
<i>LFL-LFL1</i>	AI1 4-20mA Loss	[Freewheel] YES		00
<i>LFL-LFL2</i>	AI2 4-20mA Loss	[Freewheel] YES		00
<i>uSb-uSb</i>	Undervoltage Response	[Error triggered] 0	2	00
<i>uSb-urES</i>	Rated Mains Voltage	[600 Vac] 600		00
<i>uSb-uSL</i>	Undervoltage Level	310 Vac	3	00
<i>uSb-uSt</i>	Undervoltage Timeout	0.5 s		00
<i>uSb-StP</i>	Stop Type PLoss (undervoltage)	[No] no	2	00
<i>MOP-CLi</i>	Current Limitation	51.0 A	4	00
<i>toL-tLA</i>	Torque Limit Active	[Yes] YES		00
<i>toL-tPMM</i>	Pmax Motor	300%	2	00
<i>obr-oHL</i>	Drive Temp Error Response	[Freewheel] YES	2	00
<i>obr-tHA</i>	Drive Thermal State Warning	100%	2	00
<i>MYP-LnG</i>	Language	English		00
<i>SWF-SVL</i>	Motor Surge Limit	[Yes] YES		00
<i>SWF-SoP</i>	Attenuation Time	[8 μs] 8	2	00

Notes

1. Motor Standard must be the first parameter to modify/set, otherwise drive configuration must be restarted from the beginning.
2. Factory setting.
3. Line-to-neutral value. Installer to verify format of value in drive configuration and adjust accordingly (L-L or L-N).
4. Limited to 150% of rated drive current.
5. The installer is responsible for ensuring proper parameter values are utilized. KGS Group assumes no responsibility for incorrect parameter values that result in equipment damage.



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METCALFE LIFT PUMPING STATION
2022 UPGRADES
VARIABLE FREQUENCY DRIVE SETTING LETTER
LIFT PUMP
P-L02

City Document Number 5-0162L-E0002-001

Project 864-2022 METCALFE LIFT PUMPING STATION 2022 UPGRADES

Rev.	Description	Date	Created By	Checked By	Approved By
0	Issued For Construction	2023/02/27	J. Osioy		

VFD Data	Control Schematics: 1-0162L-E0014				
	Size:	22kW/30HP	Voltage:	600 VAC	Nominal Output Current: 34 A
	Manufacturer:	Schneider Electric	Model:	ATV630D22S6	Nominal Efficiency: 98 %

Motor Data	Power:	20HP	Voltage:	575 VAC	Speed:	1180 RPM	
	Manufacturer:	Nidec Motor Corp	Model:	TBD	Pump Rating:	TBD	
	FLA:	19.5	Code:	G	Power Factor:	83.6%	Service Factor:

Parameter	Description	Set Point	Note	Rev.
<i>Mtd-bFr</i>	Motor Standard	[60 Hz NEMA] 60	1	00
<i>Mtd-nPr</i>	Nominal Motor Power	14.9kW		00
<i>Mtd-uns</i>	Nominal Motor Voltage	575 VAC		00
<i>Mtd-nCr</i>	Nominal Motor Current	19.5 A		00
<i>Mtd-FrS</i>	Nominal Motor Frequency	60 Hz		00
<i>Mtd-nSP</i>	Nominal Motor Speed	1180 RPM		00
<i>Mtd-itH</i>	Motor Th Current (FLA x S.F.)	22.5 A		00
<i>CrP-tCC</i>	Type of wiring: 2/3-Wire Control	[2-Wire Control] 2C	2	00
<i>Mtd-tFr</i>	Maximum Motor Frequency	72 Hz		00
<i>PSt-LSP</i>	Low Speed	41 Hz		00
<i>PSt-HSP</i>	High Speed	60 Hz		00
<i>PSt-ACC</i>	Acceleration	5.00 s		00
<i>PSt-dEC</i>	Deceleration	5.00 s		00
<i>MCr-APPt</i>	Application Selection	[Generic Pump Control] GPMP	2	00
<i>MPA-Ctt</i>	Motor Control Type	[U/F VC Quad.] uF9	2	00
<i>MPA-drt</i>	Dual Rating State	[Normal Duty] norMAL	2	00

Parameter	Description	Set Point	Note	Rev.
<i>Mtd-MPC</i>	Motor Parameter Choice	[Nominal Motor Power] <i>nPr</i>	2	00
<i>CrP-CHCF</i>	Control Mode	[I/O Profile] <i>io</i>		00
<i>CrP-Fr1</i>	Ref Freq 1 Config	[Not Configured] <i>no</i>		00
<i>CrP-Fr1b</i>	Ref Freq 1B Config	[AI2] <i>Ai2</i>		00
<i>CrP-rCb</i>	Ref 1B Switching	[DI3] <i>Li3</i>		00
<i>CrP-rin</i>	Reverse Disable	[No] <i>no</i>		00
<i>CrP-rFC</i>	Ref 2 Switching	[DI4] <i>Li4</i>		00
<i>CrP-Fr2</i>	Ref Freq 2 Config	[AI1] <i>Ai1</i>		00
<i>CrP-rrS</i>	Reverse Assign	[DI2] <i>Li2</i>		00
<i>Pid-Fdb-PiF</i>	PID Controller Feedback	[No] <i>no</i>		00
<i>Stt-Stt</i>	Type of Stop	[Freewheel] <i>nSt</i>		00
<i>Ai1-Ai1t</i>	AI1 Type	[Voltage] <i>10u</i>	2	00
<i>Ai1-uiL1</i>	AI1 Min. Value	<i>0.0 Vdc</i>	2	00
<i>Ai1-uiH1</i>	AI1 Max. Value	<i>10.0 Vdc</i>	2	00
<i>Ai1-Ai1F</i>	AI1 Filter	<i>0.10 s</i>		00
<i>Ai1-Ai1E</i>	AI1 Interm. Point X	<i>0%</i>		00
<i>Ai1-Ai1S</i>	AI1 Interm. Point Y	<i>0%</i>		00
<i>Ai1-Ai1L</i>	AI1 Range	[0-100%] <i>PoS</i>	2	00
<i>Ai2-Ai2t</i>	AI2 Type	[Current] <i>0A</i>		00
<i>Ai2-CrL2</i>	AI2 Min. Value	<i>4 mA</i>		00
<i>Ai2-CrH2</i>	AI2 Max. Value	<i>20 mA</i>	2	00
<i>Ai2-Ai2F</i>	AI2 Filter	<i>0.10 s</i>		00
<i>Ai2-Ai2E</i>	AI2 Interm. Point X	<i>0.0%</i>		00
<i>Ai2-Ai2S</i>	AI2 Interm. Point Y	<i>0.0%</i>		00
<i>Ai2-Ai2L</i>	AI2 Range	[0-100%] <i>PoS</i>	2	00
<i>Ao1-Ao1</i>	AQ1 Assignment	[Motor Frequency] <i>oCr</i>	2	00
<i>Ao1-Ao1t</i>	AQ1 Type	[Current] <i>0A</i>	2	00
<i>Ao1-AoL1</i>	AQ1 Min. Output	<i>4.0 mA</i>		00
<i>Ao1-AoH1</i>	AQ1 Max Output	<i>20.0 mA</i>	2	00
<i>Ao1-ASL1</i>	Scaling AQ1 min	<i>0.0%</i>	2	00
<i>Ao1-ASH1</i>	Scaling AQ1 max	<i>100.0%</i>	2	00
<i>Ao1-Ao1F</i>	AQ1 Filter	<i>2.0 s</i>		00
<i>Ao2-Ao2</i>	AQ2 Assignment	[Motor Current] <i>oFr</i>		00
<i>Ao2-Ao2t</i>	AQ2 Type	[Current] <i>0A</i>	2	00
<i>Ao2-AoL2</i>	AQ2 Min. Output	<i>4.0 mA</i>		00
<i>Ao2-AoH2</i>	AQ2 Max Output	<i>20.0 mA</i>	2	00
<i>Ao2-ASL2</i>	Scaling AQ2 min	<i>0.0%</i>	2	00
<i>Ao2-ASH2</i>	Scaling AQ2 max	<i>100.0%</i>	2	00
<i>Ao2-Ao2F</i>	AQ2 Filter	<i>2.0 s</i>		00
<i>rELA-r1</i>	Relay 1 Assignment	[Operating State Fault] <i>FLt</i>		00
<i>rELA-r2</i>	Relay 2 Assignment	[Forward] <i>MFrD</i>		00
<i>rELA-r3</i>	Relay 3 Assignment	[Reverse] <i>MrrS</i>		00
<i>rELA-r1d</i>	Relay 1 Delay Time	<i>0 ms</i>	2	00

Parameter	Description	Set Point	Note	Rev.
<i>rELA-r1S</i>	Relay 1 Active at	[1] PoS	2	00
<i>rELA-r1H</i>	Relay 1 Hold Time	0 ms	2	00
<i>rELA-r2d</i>	Relay 2 Delay Time	0 ms	2	00
<i>rELA-r2S</i>	Relay 2 Active At	[1] PoS	2	00
<i>rELA-r2H</i>	Relay 2 Hold Time	0 ms	2	00
<i>rELA-r3d</i>	Relay 3 Delay Time	0 ms	2	00
<i>rELA-r3S</i>	Relay 3 Active at	[1] PoS	2	00
<i>rELA-r3H</i>	Relay 3 Hold Time	0 ms	2	00
<i>oPL-oPL</i>	Output Phase Loss Assign	[OPF Error Triggered] YES	2	00
<i>oPL-odt</i>	Output Phase Loss Delay	0.5 s	2	00
<i>iPL-iPL</i>	Input Phase Loss Assign	[Freewheel] YES	2	00
<i>LFL-LFL1</i>	AI1 4-20mA Loss	[Freewheel] YES		00
<i>LFL-LFL2</i>	AI2 4-20mA Loss	[Freewheel] YES		00
<i>uSb-uSb</i>	Undervoltage Response	[Error triggered] 0	2	00
<i>uSb-urES</i>	Rated Mains Voltage	[600 Vac] 600		00
<i>uSb-uSL</i>	Undervoltage Level	310 Vac	3	00
<i>uSb-uSt</i>	Undervoltage Timeout	0.5 s		00
<i>uSb-StP</i>	Stop Type PLoss (undervoltage)	[No] no	2	00
<i>MOP-CLi</i>	Current Limitation	51.0 A	4	00
<i>toL-tLA</i>	Torque Limit Active	[Yes] YES		00
<i>toL-tPMM</i>	Pmax Motor	300%	2	00
<i>obr-oHL</i>	Drive Temp Error Response	[Freewheel] YES	2	00
<i>obr-tHA</i>	Drive Thermal State Warning	100%	2	00
<i>MYP-LnG</i>	Language	English		00
<i>SWF-SVL</i>	Motor Surge Limit	[Yes] YES		00
<i>SWF-SoP</i>	Attenuation Time	[8 μs] 8	2	00

Notes

1. Motor Standard must be the first parameter to modify/set, otherwise drive configuration must be restarted from the beginning.
2. Factory setting.
3. Line-to-neutral value. Installer to verify format of value in drive configuration and adjust accordingly (L-L or L-N).
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Engineer's Seal

METCALFE LIFT PUMPING STATION
2022 UPGRADES
VARIABLE FREQUENCY DRIVE SETTING LETTER
LIFT PUMP
P-L03

City Document Number 5-0162L-E0003-001

Project 864-2022 METCALFE LIFT PUMPING STATION 2022 UPGRADES

Rev.	Description	Date	Created By	Checked By	Approved By
0	Issued For Construction	2023/02/27	J. Osioy		

VFD Data	Control Schematics: 1-0162L-E0016				
	Size:	22kW/30HP	Voltage:	600 VAC	Nominal Output Current: 34 A
	Manufacturer:	Schneider Electric	Model:	ATV630D22S6	Nominal Efficiency: 98 %

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	Manufacturer:	Nidec Motor Corp	Model:	TBD	Pump Rating:	TBD	
	FLA:	19.5	Code:	G	Power Factor:	83.6%	Service Factor:

Parameter	Description	Set Point	Note	Rev.
<i>Mtd-bFr</i>	Motor Standard	[60 Hz NEMA] 60	1	00
<i>Mtd-nPr</i>	Nominal Motor Power	14.9kW		00
<i>Mtd-uns</i>	Nominal Motor Voltage	575 VAC		00
<i>Mtd-nCr</i>	Nominal Motor Current	19.5 A		00
<i>Mtd-FrS</i>	Nominal Motor Frequency	60 Hz		00
<i>Mtd-nSP</i>	Nominal Motor Speed	1180 RPM		00
<i>Mtd-itH</i>	Motor Th Current (FLA x S.F.)	22.5 A		00
<i>CrP-tCC</i>	Type of wiring: 2/3-Wire Control	[2-Wire Control] 2C	2	00
<i>Mtd-tFr</i>	Maximum Motor Frequency	72 Hz		00
<i>PSt-LSP</i>	Low Speed	41 Hz		00
<i>PSt-HSP</i>	High Speed	60 Hz		00
<i>PSt-ACC</i>	Acceleration	5.00 s		00
<i>PSt-dEC</i>	Deceleration	5.00 s		00
<i>MCr-APPt</i>	Application Selection	[Generic Pump Control] GPMP	2	00
<i>MPA-Ctt</i>	Motor Control Type	[U/F VC Quad.] uF9	2	00
<i>MPA-drt</i>	Dual Rating State	[Normal Duty] norMAL	2	00

Parameter	Description	Set Point	Note	Rev.
<i>Mtd-MPC</i>	Motor Parameter Choice	[Nominal Motor Power] <i>nPr</i>	2	00
<i>CrP-CHCF</i>	Control Mode	[I/O Profile] <i>io</i>		00
<i>CrP-Fr1</i>	Ref Freq 1 Config	[Not Configured] <i>no</i>		00
<i>CrP-Fr1b</i>	Ref Freq 1B Config	[AI2] <i>Ai2</i>		00
<i>CrP-rCb</i>	Ref 1B Switching	[DI3] <i>Li3</i>		00
<i>CrP-rin</i>	Reverse Disable	[No] <i>no</i>		00
<i>CrP-rFC</i>	Ref 2 Switching	[DI4] <i>Li4</i>		00
<i>CrP-Fr2</i>	Ref Freq 2 Config	[AI1] <i>Ai1</i>		00
<i>CrP-rrS</i>	Reverse Assign	[DI2] <i>Li2</i>		00
<i>Pid-Fdb-PiF</i>	PID Controller Feedback	[No] <i>no</i>		00
<i>Stt-Stt</i>	Type of Stop	[Freewheel] <i>nSt</i>		00
<i>Ai1-Ai1t</i>	AI1 Type	[Voltage] <i>10u</i>	2	00
<i>Ai1-uiL1</i>	AI1 Min. Value	<i>0.0 Vdc</i>	2	00
<i>Ai1-uiH1</i>	AI1 Max. Value	<i>10.0 Vdc</i>	2	00
<i>Ai1-Ai1F</i>	AI1 Filter	<i>0.10 s</i>		00
<i>Ai1-Ai1E</i>	AI1 Interm. Point X	<i>0%</i>		00
<i>Ai1-Ai1S</i>	AI1 Interm. Point Y	<i>0%</i>		00
<i>Ai1-Ai1L</i>	AI1 Range	[0-100%] <i>PoS</i>	2	00
<i>Ai2-Ai2t</i>	AI2 Type	[Current] <i>0A</i>		00
<i>Ai2-CrL2</i>	AI2 Min. Value	<i>4 mA</i>		00
<i>Ai2-CrH2</i>	AI2 Max. Value	<i>20 mA</i>	2	00
<i>Ai2-Ai2F</i>	AI2 Filter	<i>0.10 s</i>		00
<i>Ai2-Ai2E</i>	AI2 Interm. Point X	<i>0.0%</i>		00
<i>Ai2-Ai2S</i>	AI2 Interm. Point Y	<i>0.0%</i>		00
<i>Ai2-Ai2L</i>	AI2 Range	[0-100%] <i>PoS</i>	2	00
<i>Ao1-Ao1</i>	AQ1 Assignment	[Motor Frequency] <i>oCr</i>	2	00
<i>Ao1-Ao1t</i>	AQ1 Type	[Current] <i>0A</i>	2	00
<i>Ao1-AoL1</i>	AQ1 Min. Output	<i>4.0 mA</i>		00
<i>Ao1-AoH1</i>	AQ1 Max Output	<i>20.0 mA</i>	2	00
<i>Ao1-ASL1</i>	Scaling AQ1 min	<i>0.0%</i>	2	00
<i>Ao1-ASH1</i>	Scaling AQ1 max	<i>100.0%</i>	2	00
<i>Ao1-Ao1F</i>	AQ1 Filter	<i>2.0 s</i>		00
<i>Ao2-Ao2</i>	AQ2 Assignment	[Motor Current] <i>oFr</i>		00
<i>Ao2-Ao2t</i>	AQ2 Type	[Current] <i>0A</i>	2	00
<i>Ao2-AoL2</i>	AQ2 Min. Output	<i>4.0 mA</i>		00
<i>Ao2-AoH2</i>	AQ2 Max Output	<i>20.0 mA</i>	2	00
<i>Ao2-ASL2</i>	Scaling AQ2 min	<i>0.0%</i>	2	00
<i>Ao2-ASH2</i>	Scaling AQ2 max	<i>100.0%</i>	2	00
<i>Ao2-Ao2F</i>	AQ2 Filter	<i>2.0 s</i>		00
<i>rELA-r1</i>	Relay 1 Assignment	[Operating State Fault] <i>FLt</i>		00
<i>rELA-r2</i>	Relay 2 Assignment	[Forward] <i>MFrD</i>		00
<i>rELA-r3</i>	Relay 3 Assignment	[Reverse] <i>MrrS</i>		00
<i>rELA-r1d</i>	Relay 1 Delay Time	<i>0 ms</i>	2	00

Parameter	Description	Set Point	Note	Rev.
<i>rELA-r1S</i>	Relay 1 Active at	[1] PoS	2	00
<i>rELA-r1H</i>	Relay 1 Hold Time	0 ms	2	00
<i>rELA-r2d</i>	Relay 2 Delay Time	0 ms	2	00
<i>rELA-r2S</i>	Relay 2 Active At	[1] PoS	2	00
<i>rELA-r2H</i>	Relay 2 Hold Time	0 ms	2	00
<i>rELA-r3d</i>	Relay 3 Delay Time	0 ms	2	00
<i>rELA-r3S</i>	Relay 3 Active at	[1] PoS	2	00
<i>rELA-r3H</i>	Relay 3 Hold Time	0 ms	2	00
<i>oPL-oPL</i>	Output Phase Loss Assign	[OPF Error Triggered] YES	2	00
<i>oPL-odt</i>	Output Phase Loss Delay	0.5 s	2	00
<i>iPL-iPL</i>	Input Phase Loss Assign	[Freewheel] YES	2	00
<i>LFL-LFL1</i>	AI1 4-20mA Loss	[Freewheel] YES		00
<i>LFL-LFL2</i>	AI2 4-20mA Loss	[Freewheel] YES		00
<i>uSb-uSb</i>	Undervoltage Response	[Error triggered] 0	2	00
<i>uSb-urES</i>	Rated Mains Voltage	[600 Vac] 600		00
<i>uSb-uSL</i>	Undervoltage Level	310 Vac	3	00
<i>uSb-uSt</i>	Undervoltage Timeout	0.5 s		00
<i>uSb-StP</i>	Stop Type PLoss (undervoltage)	[No] no	2	00
<i>MOP-CLi</i>	Current Limitation	51.0 A	4	00
<i>toL-tLA</i>	Torque Limit Active	[Yes] YES		00
<i>toL-tPMM</i>	Pmax Motor	300%	2	00
<i>obr-oHL</i>	Drive Temp Error Response	[Freewheel] YES	2	00
<i>obr-tHA</i>	Drive Thermal State Warning	100%	2	00
<i>MYP-LnG</i>	Language	English		00
<i>SWF-SVL</i>	Motor Surge Limit	[Yes] YES		00
<i>SWF-SoP</i>	Attenuation Time	[8 μs] 8	2	00

Notes

1. Motor Standard must be the first parameter to modify/set, otherwise drive configuration must be restarted from the beginning.
2. Factory setting.
3. Line-to-neutral value. Installer to verify format of value in drive configuration and adjust accordingly (L-L or L-N).
4. Limited to 150% of rated drive current.
5. The installer is responsible for ensuring proper parameter values are utilized. KGS Group assumes no responsibility for incorrect parameter values that result in equipment damage.