synergy™
Programming Manual

Local Keypad

fairford
Soft Start Technology

iERS
Intelligent Energy Recovery System

CONFORMS
TO STD UL 508
CSA 22.2
No. I4

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Auto Setup **Auto Setup** >>>>>>>> >>>>>>>> **Application:**		The Unit has numerous preset applications built in as standard. Select the application best suited to the load. The selected application will automatically change several parameters and functions. Depending on the application loaded the "Trip Class" may also change Refer to the separate 'applications document' for more details Range Default - End of list Default Default Type Read/Write	19200
Auto Setup >>>>>>>> >>>>>>>> **Trip Class**		The trip class is a numeric value that correlates the trip time with overload level. Select Trip class according to application requirements The trip time depends on the selected Trip Class, the duration of the overload and the level of the over current. Refer to the Motor Overload 'cold' trip curves given in the Quick Start Guide. When "Class 20" or "Class30" are selected the Unit current rating (i-Unit) will be reduced to a lower value (i-rated). Range 10 - 30 Default 10 Type Read/Write	25664
Auto Setup >>>>>>>> >>>>>>>> **Motor Current**		This should be set to the Full Load Current shown on the motor plate The overload works with multiples of the set "Motor Current" (i-motor) Also referred to as Motor FLA Range 50% I-rated - 100% I-rated Default 100% I-rated Type Read/Write	25728
Auto Setup >>>>>>>> >>>>>>>> **Control Method**		Local Touch Screen : Control using the button on the keypad User Programmable : Control using the terminals, function defined in "I/O" menu Two Wire Control : Control using terminals, functions fixed as shown on screen Three Wire Control : Control using terminals, functions fixed as shown on screen Modbus Network : Control via remote Modbus network or remote Keypad or Modbus TCP Range Local Touch Screen - Modbus Network Default Local Touch Screen Type Read/Write	59392
Auto Setup >>>>>>>> >>>>>>>> **Digital Input Voltage**		The digital inputs D1-1I, D1-2I, D2-1I are designed to work with a range of control supplies 230V : 'Active high level' Input voltage must be in the range 195.5V - 253V 110V : 'Active high level' Input voltage must be in the range 93.5V - 121V 24V : 'Active high level ' input voltage must be in the range 20.4V-26.4V It is important to ensure the "Digital input Voltage" corresponds to the voltage applied to the input. Failure to do so may result in damage. Range 230V - 24VDC Default 230V Type Read/Write	10880

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Advanced					
Advanced	>>>>>>>>>	>>>>>>>>>	**Save Parameters**	Saves all Read /Write parameters to non volatile memory Yes : Parameters are permanently written No : Parameters remain changed until next power cycle Range: No - Yes Default: No Type: Read/Write	62144
Advanced	**Automatic Settings**	>>>>>>>>>	**Automatic Pedestal**	Automatically controls the starting torque On : The initial torque is increased until the motor starts to rotate at a moderate speed. Off: The initial torque is defined by the "Start Pedestal" Range: Off - On Default: Off Type: Read/Write	19840
Advanced	**Automatic Settings**	>>>>>>>>>	**Automatic Ramp**	Automatically controls the torque applied to the motor during the soft start. On : The torque is adjusted to suit the load. Off: The ramp time depends on the "Start Time" and "Current Limit" Range: Off - On Default: Off Type: Read/Write	20352
Advanced	**Automatic Settings**	>>>>>>>>>	**Automatic End Start (1)**	Automatically controls the time taken for the motor to start On : The ramp time is shortened if the motor is at speed before the end of the "Start Time" Off: The ramp time depends on the "Start Time" and "Current Limit" Range: Off - On Default: Off Type: Read/Write	19968
Advanced	**Automatic Settings**	>>>>>>>>>	**Automatic Stop**	Automatically controls the soft stop to suit the application. This feature is particularly useful with pumping applications On : If the motor is lightly loaded it decelerates rapidly to the point where the soft stop becomes useful. Off : The deceleration to the point where the soft stop becomes useful will be slower. Range: Off - On Default: Off Type: Read/Write	20160

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Advanced	Automatic Settings	>>>>>>>>>	Automatic Stop Profile	Adjusts the response of the "Automatic Stop" Increase if the motor speed doesn't drop quickly enough. When the value is set to zero the "Automatic Stop" is effectively disabled Range: 0 % - 100 % Default: 50 % Type: Read/Write	20608
Advanced	Automatic Settings	>>>>>>>>>	Automatic End Stop	Automatically controls the "Stop Time" On : The ramp time is shortened if the motor reaches a very low speed before the end of the "Stop Time" Off: The ramp time " depends on the "Stop Time" and "Current Limit" Range: Off - On Default: Off Type: Read/Write	20416
Advanced	Automatic Settings	>>>>>>>>>	Automatic Impact Load	Automatically controls the maximum iERS saving level. On : The maximum iERS saving level ("BackStop") is reset to maximum during each load cycle. Off : The saving potential may be reduced on applications with heavy load cycles , such as injection moulding machines. Range: Off - On Default: Off Type: Read/Write	20480
Advanced	Automatic Settings	>>>>>>>>>	Auto Smooth Stop	Automatically controls the soft stop to eliminate oscillations that can occur towards the end of the ramp On : The soft stop is adjusted when oscillations are detected. Refer to "Auto smoothing Level" Off : The soft stop is unadjusted and torque fluctuations may cause instability. This can often occur in pumping applications Range: Off - On Default: Off Type: Read/Write	20224
Advanced	Automatic Settings	>>>>>>>>>	Auto Smoothing Level	Adjusts the response of the "Automatic smoothing" Increase to provide a greater smoothing effect If there are torque fluctuations that occur during the soft stop. When set to zero the smoothing is effectively disabled. Range: 10 % - 100 % Default: 50 % Type: Read/Write	20672

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Advanced	**Automatic Settings**	>>>>>>>>>	**Automatic End Start (2)**	Automatically controls the time taken for the motor to start On : The ramp time is shortened if the motor current falls below the current limit level before the end of the "Start Time". Off: The ramp time depends on the "Start Time" and "Current Limit" Range: Off - On Default: Off Type: Read/Write	19904
Advanced	**Automatic Settings**	>>>>>>>>>	**Automatic End Start (3)**	Automatically controls the time taken for the motor to start On : The ramp time is shortened if torque fluctuations occur before the end of the "Start Time" Off: The ramp time depends on the "Start Time" and "Current Limit" Range: Off - On Default: Off Type: Read/Write	20032
Advanced	**Automatic Settings**	>>>>>>>>>	**Rate End Start (3)**	Adjusts the response of the "Automatic End Start (3)" Increase to provide a greater smoothing effect If there are torque fluctuations that occur during the soft start. When set to zero the smoothing is effectively disabled. Range: 0 % - 100 % Default: 50 % Type: Read/Write	768
Advanced	**Start Settings**	>>>>>>>>>	**Start Time**	Time taken to soft start from the "Start Pedestal" to the end of the start Normally set between 5 and 30 seconds. Actual time to get to full voltage depends on the "Start Current Limit Level". If set too long the motor can be at speed before the end of the time set, refer to "Automatic End Start" Range: 1 s - 300 s Default: 10 s Type: Read/Write	7104
Advanced	**Start Settings**	>>>>>>>>>	**Start Pedestal**	Percentage of the supply voltage applied to motor at the beginning of the soft start. Increase to provide more torque If the load fails to break away. Decrease if the motor accelerates too quickly. Range: 10 % - 100 % Default: 20 % Type: Read/Write	704

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Advanced	Start Settings	Start Current Limit	Start Current Limit Trip	Selects trip or continue if the current limit has been active for too long On : The Unit will trip Off: The start will continue regardless of the motor current level Range: Off - On Default: On Type: Read/Write	53790
Advanced	Start Settings	Start Current Limit	Start Current Limit Level	The current in Amps at which the soft Start ramp is held. Normally set to 350% of motor FLC. Increase if motor fails to accelerate at required rate The "Current Limit Level" will effect actual time to start, if set too low the motor may not accelerate to full speed. Range: 50% I-motor - 450% I-synergy Default: 350% I-motor Type: Read/Write	26880
Advanced	Start Settings	Start Current Limit	Start Current Limit Time	The maximum time allowed for the current limit. If the current limit is still active at the end of this period the Unit will either 'Trip' or 'continue' Range: 1 s - 600 s Default: 30 s Type: Read/Write	26944
Advanced	Start Settings	Kick Start	Kick Start	Applies a short duration torque pulse to dislodge 'sticky' loads On : The torque pulse is applied at start-up, when complete the torque drops to the "Start Pedestal" Off: The initial starting torque is defined by the "Start Pedestal" Range: Off - On Default: Off Type: Read/Write	320
Advanced	Start Settings	Kick Start	Kick Start Time	Time that the torque pulse is applied to load Increase to provide more torque If the load fails to break away. Decrease if the motor accelerates too quickly. Range: 10 ms - 2000 ms Default: 100 ms Type: Read/Write	7040

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Advanced	**Start Settings**	**Kick Start**	**Kick Start Pedestal**	Percentage of the supply voltage applied to the motor during the 'kick' period Increase to provide more torque If the load fails to break away. Decrease if the motor accelerates too quickly. Range　｜ 30 % － 80 % ｜　Default ｜ 75 % ｜　Type ｜ Read/Write ｜	640
Advanced	**Start Settings**	**>>>>>>>>**	**Contactor Delay**	Time allowed for external contactors to close. Increase if contactors are driven by buffer relays or motor trips on phase loss when start signal applied Decrease if response to start signal needs to be improved Range　｜ 20 ms － 800 ms ｜　Default ｜ 160 ms ｜　Type ｜ Read/Write ｜	8320
Advanced	**Stop Settings**	**>>>>>>>>**	**Stop Time**	The time taken to soft stop from full voltage or the iERS level to the 'Stop Pedestal' Normally set between 15 and 60 seconds. Actual time to get to 'Stop Pedestal' depends on the "Stop Current Limit Level". If set too long motor may reach zero speed before the end of the time set, refer to "Automatic End Stop" Range　｜ 0 s － 300 s ｜　Default ｜ 0 s ｜　Type ｜ Read/Write ｜	7296
Advanced	**Stop Settings**	**>>>>>>>>**	**Stop Pedestal**	Percentage of the supply voltage applied to the motor at the end of the soft stop Increase if the motor crawls at the end of the soft stop. Decrease if a greater soft-stop effect is required at the end of the ramp. Range　｜ 10 % － 40 % ｜　Default ｜ 10 % ｜　Type ｜ Read/Write ｜	896
Advanced	**Stop Settings**	**Stop Current Limit**	**Stop Current Limit Trip**	Selects trip or continue if the stop current limit has been active for too long On : The Unit will trip Off: The stop will continue regardless of the motor current level Range　｜ Off － On ｜　Default ｜ Off ｜　Type ｜ Read/Write ｜	53791

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Advanced	**Stop Settings**	**Stop Current Limit**	**Stop Current Limit Level**	The current in Amps at which the soft stop ramp is not allowed to go above. Normally set to 350% motor FLC. Increase if motor decelerates too rapidly. The current limit level will effect actual time to stop the motor. Range: 100% I-motor - 450% I-synergy Default: 350% I-motor Type: Read/Write	28800
Advanced	**Stop Settings**	**Stop Current Limit**	**Stop Current Limit Time**	The maximum time allowed for the current limit. If the current limit is still active at the end of this period the Unit will either trip or continue Range: 1 s - 300 s Default: 10 s Type: Read/Write	28864
Advanced	**Motor Protection**	>>>>>>>>>	**Motor Current**	This should be set to the Full Load Current shown on the motor plate The overload works with multiples of the set "Motor Current" (i-motor) Also referred to as Motor FLA Range: 50% I-rated - 100% I-rated Default: 100% I-rated Type: Read/Write	25728
Advanced	**Motor Protection**	>>>>>>>>>	**Trip Class**	The trip class is a numeric value that correlates the trip time with overload level. Select Trip class according to application requirements The trip time depends on the selected Trip Class, the duration of the overload and the level of the over current. Refer to the Motor Overload 'cold' trip curves given in the Quick Start Guide. When "Class 20" or "Class30" are selected the Unit current rating (i-Unit) will be reduced to a lower value (i-rated). Range: 10 - 30 Default: 10 Type: Read/Write	25664
Advanced	**Motor Protection**	**Low Current Settings**	**Low Current Trip**	This can be used to detect if the motor is running lightly loaded. On : The Unit will trip. This feature is not active during soft start and soft stop. Off: The Unit will continue to operate regardless of motor current Range: Off - On Default: Off Type: Read/Write	53787

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Advanced	Motor Protection	Low Current Settings	Low Current Trip Level		The current in Amps that will cause a trip A trip will occur if the motor current is less than the "Trip Level" for the "Trip Time" Range: 25% I-motor - 100% I-motor Default: 25% I-motor Type: Read/Write	26304
Advanced	Motor Protection	Low Current Settings	Low Current Trip Time		The trip time for the Low current trip A trip will occur if the motor current is less than the "Trip Level" for the "Trip Time" Range: 100 ms - 9000 ms Default: 100 ms Type: Read/Write	26368
Advanced	Motor Protection	Shearpin Settings	Shearpin Trip		The shearpin is an electronic equivalent of a mechanical shearpin On : The Unit will trip, This feature is not active during soft start and soft stop. Off: The Unit will continue to operate regardless of motor current level Range: Off - On Default: On Type: Read/Write	53793
Advanced	Motor Protection	Shearpin Settings	Shearpin Trip Current		The current in Amps that will cause a "Shearpin Trip" A trip will occur if the motor current is greater than the "Trip Level" for the "Trip Time" Range: 100% I-motor - 450% I-synergy Default: 450% I-synergy Type: Read/Write	27584
Advanced	Motor Protection	Shearpin Settings	Shearpin Trip Time		The trip time for the Shearpin trip A trip will occur if the motor current is greater than the "Trip Level" for the "Trip Time" Range: 100 ms - 9000 ms Default: 100 ms Type: Read/Write	27648

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Advanced	Motor Protection	Overload Settings	Overload Trip	The Unit has an "Overload" function that is an electronic equivalent to a thermal overload. On : The Unit will trip when the "Overload" capacity (ModbusPNU 33408) exceeds 100% Off: The Unit will continue to operate regardless of motor current level Range: Off - On Default: On Type: Read/Write	53792
Advanced	Motor Protection	Overload Settings	Overload Level	Determines the level in Amps at which the overload will start. Normally set to 115% of the set motor current (i-motor) Reduce to speed up trip response Range: 50% I-motor - 125% I-motor Default: 115% I-motor Type: Read/Write	28224
Advanced	iERS	>>>>>>>>>	iERS	Enables and disables the intelligent Energy Recovery System feature (iERS). On : The voltage to the motor will be regulated to ensure optimum efficiency. Off : The feature is disabled and the motor operates at full voltage Range: Off - On Default: On Type: Read/Write	21120
Advanced	iERS	>>>>>>>>>	Dwell Time	The time from the End of the start to the point where the iERS saving mode becomes active. Normally set to 5 seconds to ensure the motor is at full speed before the iERS saving becomes active Increase to allow time for the motor to stabilise. Range: 1 s - 300 s Default: 5 s Type: Read/Write	7360
Advanced	iERS	>>>>>>>>>	iERS Rate	Determines the rate at which the load is regulated during the iERS energy saving mode During periods of instability the "Current Irms" and "True Power Factor" will oscillate rapidly. Increase if the applications shows signs of instability. Reduce to increase the speed of response Range: 0 % - 100 % Default: 25 % Type: Read/Write	21184

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Advanced	iERS	>>>>>>>>>	iERS Level	Determines the maximum energy saving potential. Reduce if the application shows signs of instability. The amount of energy that can be saved may fall as the "iERS level" is reduced. Range: 0 % - 100 % Default: 100 % Type: Read/Write	21376
Advanced	iERS	>>>>>>>>>	Fixed Voltage	User settable voltage level for power calculations If required can be used to improve accuracy of power calculations Range: 100 V - 500 V Default: 100 V Type: Read/Write	35200
Advanced	iERS	>>>>>>>>>	Fixed Voltage	Selects the source for the voltage value used in the power calculations. on: KW, KVar and KVA are calculated using the "Fixed Voltage" off: KW, KVar and KVA are calculated using the internally measured voltage. Range: Off - On Default: Off Type: Read/Write	35264
Advanced	>>>>>>>>>	>>>>>>>>>	Control Method	Local Touch Screen : Control using the button on the keypad User Programmable : Control using the terminals, function defined in "I/O" menu Two Wire Control : Control using terminals, functions fixed as shown on screen Three Wire Control : Control using terminals, functions fixed as shown on screen Modbus Network : Control via remote Modbus network or remote Keypad or Modbus TCP Range: Local Touch Screen - Modbus Network Default: Local Touch Screen Type: Read/Write	59392
Advanced	Trip Settings	>>>>>>>>>	Trip Sensitivity	Adjusts the reaction time to fault trips Increase "Trip Sensitivity" to slow the response to fault trips. Sometimes useful on sites were electrical noise is causing nuisance tripping This is a global setting. Increasing "Trip Sensitivity" will slow the response of all the trips. Range: 0 % - 100 % Default: 0 % Type: Read/Write	44864

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Advanced	Trip Settings	>>>>>>>>	Cover Open Trip	For safety purposes the Unit has been designed to trip if the front cover is open On : The Unit will trip if the front cover is open. This trip is active at all times. Off : The Unit will continue to operate with the cover open Range | Off - On | Default | Off | Type | Read/Write |	53803
Advanced	Trip Settings	>>>>>>>>	Shearpin Trip	The shearpin is an electronic equivalent of a mechanical shearpin On : The Unit will trip, This feature is not active during soft start and soft stop. Off: The Unit will continue to operate regardless of motor current level Range | Off - On | Default | On | Type | Read/Write |	53793
Advanced	Trip Settings	>>>>>>>>	Overload Trip	The Unit has an "Overload" function that is an electronic equivalent to a thermal overload. On : The Unit will trip when the "Overload" capacity (ModbusPNU 33408) exceeds 100% Off: The Unit will continue to operate regardless of motor current level Range | Off - On | Default | On | Type | Read/Write |	53792
Advanced	Trip Settings	>>>>>>>>	Low Current Trip	This can be used to detect if the motor is running lightly loaded. On : The Unit will trip. This feature is not active during soft start and soft stop. Off: The Unit will continue to operate regardless of motor current Range | Off - On | Default | Off | Type | Read/Write |	53787
Advanced	Trip Settings	>>>>>>>>	Start Current Limit Trip	Selects trip or continue if the current limit has been active for too long On : The Unit will trip Off: The start will continue regardless of the motor current level Range | Off - On | Default | On | Type | Read/Write |	53790

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Advanced | Trip Settings | >>>>>>>>> | **Stop Current Limit Trip**		Selects trip or continue if the stop current limit has been active for too long On : The Unit will trip Off: The stop will continue regardless of the motor current level Range [Off - On] Default [Off] Type [Read/Write]	53791
Advanced | Trip Settings | >>>>>>>>> | **PTC Motor Thermistor Trip**		A single PTC motor thermistor or set of PTC motor thermistors can be connected to the PTC terminals. On :The Unit will trip if the motor thermistor exceed its response temperature or the PTC input is open circuit Off : The Unit will continue to operate. Range [Off - On] Default [Off] Type [Read/Write]	53794
Advanced | Trip Settings | >>>>>>>>> | **L1-L2-L3 Trip**		Determines if supply phase sequence is incorrect for motor rotation On : Trips if the phase sequence is L1, L2, L3. Off : The Unit will continue to operate normally Range [Off - On] Default [Off] Type [Read/Write]	53808
Advanced | Trip Settings | >>>>>>>>> | **L1-L3-L2 Trip**		Determines if supply phase sequence is incorrect for motor rotation On : Trips if the phase sequence is L1, L3, L2. Off : The Unit will continue to operate normally Range [Off - On] Default [Off] Type [Read/Write]	53807
Advanced | Trip Settings | >>>>>>>>> | **Remote Start Trip**		For safety reasons the Unit will trip during some operations if the remote start signal is active On : Trips if the remote start signal is active when the Unit is powered up or a reset is applied. Off : The Unit will not trip and may start unexpectedly if the start signal is accidently left active. Range [Off - On] Default [On] Type [Read/Write]	53804

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Advanced / **Trip Settings** / >>>>>>>>> / **Current Sensor Trip**		Detects if the internal current sensors have failed or reading a very low level. On : The Unit will trip if the internal current sensors fail or the current measured falls to a very low level Off : Will continue to operate even if the sensor has failed. Measurements and overload protection may be effected — Range: Off - On — Default: Off — Type: Read/Write	53775
Advanced / **Trip Settings** / >>>>>>>>> / **Fan Trip**		Detects if the cooling fans have failed. On : The Unit trips if the cooling fans fitted to the Unit fail. Off : Will continue to operate and is likely to trip on a thermal trip as the heatsink will not be sufficiently cooled — Range: Off - On — Default: On — Type: Read/Write	53782
Advanced / **Trip Settings** / >>>>>>>>> / **Communications Trip**		Detects if the communications bus has failed or become inactive. To keep the bus active there must be at least one Modbus read or write (any PNU) during the "Timeout ms" period (ModbusPNU 15808) On :Communication trip enabled. Off : Communication trip disabled. — Range: Off - On — Default: On — Type: Read/Write	53796
Advanced / **Trip Settings** / >>>>>>>>> / **Shut Down (1)**		This features controls the soft stop improve stability On : The stop time is truncated if the motor experiences severe torque fluctuations during the soft stop Off : The motor will stop in the set time. — Range: Off - On — Default: On — Type: Read/Write	53769
Advanced / **Trip Settings** / >>>>>>>>> / **Shut Down (2)**		This features controls the soft stop improve stability On : The stop time is truncated if the motor experiences severe torque fluctuations during the soft stop Off : The motor will stop in the set time. — Range: Off - On — Default: On — Type: Read/Write	53770

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Advanced **Trip Settings** >>>>>>>>>	**Thyristor Firing Trip**	Detects if there is a fault with one or more of the internal Thyristors or bypass relays On : Trips if one or more of the Thyristors / bypass relays has failed short circuit. ISOLATE SUPPLY. Check by measuring the resistance between L1 -T1, L2 -T2, L3 -T3 (Anything < 10R is assumed short circuit) Off : The Unit will attempt to start and run although the operation may be erratic. Operating in this mode for prolonged periods may result in SCR failure Range Off - On Default On Type Read/Write	53774
Advanced **Trip Settings** >>>>>>>>>	**Motor Side Phase Loss**	Detects if there is a disconnection between the Unit output and the motor On : Trips if there is a disconnection between the output side of the Unit and the motor Off : The Unit will attempt to start and run although the operation may be erratic. Operating in this mode for prolonged periods may result in SCR failure Range Off - On Default On Type Read/Write	53777
Advanced **Trip Settings** >>>>>>>>>	**Sensing Fault Trip**	Detects if there is a fault with operation of one or more of the internal Thyristors On : Trips if one or more of the Thyristors fails to turn on properly. Off : The Unit will attempt to start and run although the operation may be erratic. Operating in this mode for prolonged periods may result in SCR failure Range Off - On Default On Type Read/Write	53781
Advanced **Trip Settings** >>>>>>>>>	**Thermal Sensor Trip**	Detects if the internal temperature sensor has malfunctioned On : The Unit will trip if the internal temperature sensor malfunctions Off : The Unit will continue to operate even if the temperature sensor has malfunctioned. Operating in this mode for prolonged periods may result in SCR failure Range Off - On Default On Type Read/Write	53768
Advanced **Trip Settings** >>>>>>>>>	**External Trip**	Allows a trip to be forced using one of the digital inputs On : Trips when the programmed input is active Off : External Trip is disabled Range Off - On Default On Type Read/Write	53795

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Advanced	Trip Settings	>>>>>>>>>	Operation 3 Trip	Detects if the Control Board has failed to operate normally On : Operation 3 trip enabled. Off : Operation 3 trip disabled. Range [Off - On] Default [On] Type [Read/Write]	53800
Advanced	Trip Settings	>>>>>>>>>	Operation 1 Trip	Detects if the keypad Board has failed to operate normally On : Operation 1 trip enabled. Off : Operation 1 trip disabled. Range [Off - On] Default [Off] Type [Read/Write]	53798
Advanced	Trip Settings	>>>>>>>>>	Operation 2 Trip	Detects if the logging function has failed to operate normally On : Operation 2 trip enabled. Off : Operation 2 trip disabled. Range [Off - On] Default [Off] Type [Read/Write]	53799
Advanced	Trip Settings	>>>>>>>>>	Input Side Phase Loss	Detects if there is a disconnection between the Unit input and the supply when the motor is running. On : Trips if there is a disconnection between the input side of the Unit and the supply when the motor is running. Off : The Unit will attempt to run although the operation may be erratic. Operating in this mode for prolonged periods may result in SCR failure Range [Off - On] Default [On] Type [Read/Write]	53762
Advanced	>>>>>>>>>	>>>>>>>>>	Firing Mode	Set to correspond with Unit connection to the Motor. Refer to connection diagrams in the Quick Start Guide. In-Line : The Unit is connected in-line with a delta or star connected motor. In-Delta : The Unit is connected inside the Delta of the motor. The iERS function is disabled Range [In-Line - In-Delta] Default [In-Line] Type [Read/Write]	128

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Advanced	>>>>>>>>>	>>>>>>>>>	Legacy Delta Mode	Allows the Unit to be retro-fitted into "Delta" applications that previously used QFE / XFE (5MC) On : Operates in QFE / XFE (5MC) delta compatibility mode. Off : Operates normally. Refer to Unit Delta connection diagram in the Quick Start Guide. Range [Off - On] Default [Off] Type [Read/Write]	192

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
I/O **I/O**	**Digital Inputs**	**>>>>>>>>>**	**Digital Input Voltage**	The digital inputs D1-1I, D1-2I, D2-1I are designed to work with a range of control supplies 230V : 'Active high level' Input voltage must be in the range 195.5V - 253V 110V : 'Active high level' Input voltage must be in the range 93.5V - 121V 24V : 'Active high level ' input voltage must be in the range 20.4V-26.4V It is important to ensure the "Digital input Voltage" corresponds to the voltage applied to the input. Failure to do so may result in damage. Range 230V - 24VDC Default 230V Type Read/Write	10880
I/O	**Digital Inputs**	**>>>>>>>>>**	**Control Method**	Local Touch Screen : Control using the button on the keypad User Programmable : Control using the terminals, function defined in "I/O" menu Two Wire Control : Control using terminals, functions fixed as shown on screen Three Wire Control : Control using terminals, functions fixed as shown on screen Modbus Network : Control via remote Modbus network or remote Keypad or Modbus TCP Range Local Touch Screen - Modbus Network Default Local Touch Screen Type Read/Write	59392
I/O	**Digital Inputs**	**Digital Input 1 (D1-1I)**	**Select Function**	Allows the Digital input (D1-1I) to be mapped to different functions The selected function will change in proportion with the input Digital inputs can only be mapped if the "Control Method" is set to "User Programmable" Range Off - End of list Default Start/Stop Type Read/Write	10944
I/O	**Digital Inputs**	**Digital Input 1 (D1-1I)**	**High Input = 1 Sets Value**	Allows the polarity of the input to be reversed On : When the input is on the selected function will be on. Off : When the input is off the selected function will be on. Range Off - On Default On Type Read/Write	11264
I/O	**Digital Inputs**	**Digital Input 2 (D1-2I)**	**Select Function**	Allows the Digital input (D1-2I) to be mapped to different functions The selected function will change in proportion with the input Digital inputs can only be mapped if the "Control Method" is set to "User Programmable" Range Off - End of list Default Off Type Read/Write	10945

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
I/O	Digital Inputs	Digital Input 2 (D1-2I)	High Input = 1 Sets Value	Allows the polarity of the input to be reversed On : When the input is on the selected function will be on. Off : When the input is off the selected function will be on. Range Off - On Default On Type Read/Write	11266
I/O	Digital Inputs	Digital Input 3 (D2-1I)	Select Function	Allows the Digital input (D2-1I) to be mapped to different functions The selected function will change in proportion with the input Digital inputs can only be mapped if the "Control Method" is set to "User Programmable" Range Off - End of list Default Reset Type Read/Write	10946
I/O	Digital Inputs	Digital Input 3 (D2-1I)	High Input = 1 Sets Value	Allows the polarity of the input to be reversed On : When the input is on the selected function will be on. Off : When the input is off the selected function will be on. Range Off - On Default On Type Read/Write	11268
I/O	Digital Outputs	Digital Output 1 N/C(12)	Select Function	Allows the Digital output (N/C (12)) to be mapped to different functions The output will change in proportion with the selected output Range Off - End of list Default Error Type Read/Write	11584
I/O	Digital Outputs	Digital Output 1 N/C(12)	High Output = 1 When Value	Allows the polarity of the output to be reversed On : When the selected function is on the output will be on. Off : When the selected function is on the output is off Range Off - On Default On Type Read/Write	11904

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
I/O	Digital Outputs	Digital Output 2 N/O(24)	Select Function	Allows the Digital output (N/0 (24)) to be mapped to different functions The output will change in proportion with the selected output Range: Off - End of list Default: Error Type: Read/Write	11585
I/O	Digital Outputs	Digital Output 2 N/O(24)	High Output = 1 When Value	Allows the polarity of the output to be reversed On : When the selected function is on the output will be on. Off : When the selected function is on the output is off Range: Off - On Default: On Type: Read/Write	11906
I/O	Digital Outputs	Digital Output 3 N/O(34)	Select Function	Allows the Digital output (N/0 (34)) to be mapped to different functions The output will change in proportion with the selected output Range: Off - End of list Default: Running Type: Read/Write	11586
I/O	Digital Outputs	Digital Output 3 N/O(34)	High Output = 1 When Value	Allows the polarity of the output to be reversed On : When the selected function is on the output will be on. Off : When the selected function is on the output is off Range: Off - On Default: On Type: Read/Write	11908
I/O	Digital Outputs	Digital Output 4 N/O(44)	Select Function	Allows the Digital output (N/0 (44)) to be mapped to different functions The output will change in proportion with the selected output Range: Off - End of list Default: End Of Start Type: Read/Write	11587

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
I/O	**Digital Outputs**	**Digital Output 4 N/O(44)**	**High Output = 1 When Value**	Allows the polarity of the output to be reversed On : When the selected function is on the output will be on. Off : When the selected function is on the output is off Range: Off - On Default: On Type: Read/Write	11910
I/O	**Analogue Inputs**	**>>>>>>>>**	**Analogue Input Type**	Defines the function of the analogue input (AI) 0-10V : The input voltage varies from 0-10V 4-20mA : The input varies from 4 to 20mA Range: 0 - 10V - 4 - 20mA Default: 0 - 10V Type: Read/Write	9600
I/O	**Analogue Inputs**	**>>>>>>>>>**	**Select Function**	Allows the Analogue input to be mapped to different functions The selected function will change in proportion with the input By default the function will be at its maximum when the input is at it maximum Range: Off - End of list Default: Off Type: Read/Write	9664
I/O	**Analogue Inputs**	**>>>>>>>>>**	**Scaling Level**	Allows the selected function to be scaled The selected function will change in proportion with the input The function will be at its "Scaling Level" when the input is at its maximum Range: 0 - Max value Default: Max value Type: Read/Write	9728
I/O	**Analogue Outputs**	**>>>>>>>>**	**Analogue Output Type**	Defines the physical function of the analogue output (AO) 0-10V : The output voltage varies from 0 to 10V 4-20mA : The output current varies from 4 to 20mA Range: 0 - 10V - 4 - 20mA Default: 0 - 10V Type: Read/Write	8960

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
I/O	Analogue Outputs	>>>>>>>>>	Select Function	Allows the Analogue output to be mapped to different PNU functions The output will change in proportion with the selected function By default the output will be at a maximum when the selected function equals its maximum value Range [Off - End of list] Default [Off] Type [Read/Write]	9024
I/O	Analogue Outputs	>>>>>>>>>	Scaling Level	Allows the selected function to be scaled The output will change in proportion with the selected function The output will be at a maximum when the selected function equals the "Scaling Level" Range [0 - Max value] Default [0] Type [Read/Write]	9088
I/O	>>>>>>>>>	>>>>>>>>>	PTC Motor Thermistor Trip	A single PTC motor thermistor or set of PTC motor thermistors can be connected to the PTC terminals. On :The Unit will trip if the motor thermistor exceed its response temperature or the PTC input is open circuit Off : The Unit will continue to operate. Range [Off - On] Default [Off] Type [Read/Write]	53794

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Monitor			
Monitor >>>>>>>>> >>>>>>>>>	**Line Frequency**	The frequency of the 3-phase supply Range: 45 Hz - 65 Hz Default: - Hz Type: Read Only	32000
Monitor >>>>>>>>> >>>>>>>>>	**Phase Rotation**	Indicates the phase sequence of the incoming supply. RYB = L1, L2, L3 RBY = L1, L3, L2 Range: L1-L2-L3 - L1-L3-L2 Default: L1-L2-L3 Type: Read Only	32064
Monitor >>>>>>>>> >>>>>>>>>	**I1**	The RMS current on phase L1 Range: 0 A - 10000 A Default: 0 A Type: Read Only	33536
Monitor >>>>>>>>> >>>>>>>>>	**I2**	The RMS current on phase L2 Range: 0 A - 10000 A Default: 0 A Type: Read Only	33538
Monitor >>>>>>>>> >>>>>>>>>	**I3**	The RMS current on phase L3 Range: 0 A - 10000 A Default: 0 A Type: Read Only	33540

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Monitor	>>>>>>>>	>>>>>>>>	Current Irms	The RMS motor current This is the maximum of the 3 phases. This value is used for the overload and power calculations Range 0 A - 10000 A Default 0 A Type Read Only	32896
Monitor	>>>>>>>>	>>>>>>>>	True Power Factor	The True Power Factor The True Power Factor = (Displacement Power Factor x Distortion Power Factor) Range 0 - 1 Default 0 Type Read Only	33024
Monitor	>>>>>>>>	>>>>>>>>	True Power P	Total true power This is an addition of the 3 phases Range 0 kW - 10000 kW Default 0 kW Type Read Only	34688
Monitor	>>>>>>>>	>>>>>>>>	Apparent Power S	Total Apparent Power This is an addition of the 3 phases Range 0 kVA - 10000 kVA Default 0 kVA Type Read Only	34816
Monitor	>>>>>>>>	>>>>>>>>	Reactive Power Q	Total Reactive power This is an addition of the 3 phases Range 0 kvar - 10000 kvar Default 0 kvar Type Read Only	34944

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Monitor	>>>>>>>>	>>>>>>>>	iERS Saving Level	Indicates the level of potential saving 100% indicates that Unit is saving at its maximum level Range: 0 % - 100 % Default: 0 % Type: Read Only	35008
Monitor	>>>>>>>>	>>>>>>>>	Delay Angle	Internal firing delay angle in Degrees Displayed for diagnostic purposes Range: 0 Degrees - 60 Degrees Default: 0 Degrees Type: Read Only	22400
Monitor	>>>>>>>>	>>>>>>>>	BackStop	The maximum possible Delay angle for the current iERS saving phase Displayed for diagnostic purposes May decrease during heavy load periods or instability Range: 0 Degrees - 55 Degrees Default: 0 Degrees Type: Read Only	23040
Monitor	>>>>>>>>	>>>>>>>>	Delay Max	The maximum possible delay for iERS saving Displayed for diagnostic purposes Range: 0 Degrees - 55 Degrees Default: 0 Degrees Type: Read Only	22464
Monitor	>>>>>>>>	>>>>>>>>	Pres PF Degrees	The Present Power Factor used by the iERS saving function This is the actual Power Factor for the iERS saving function. The "Delay" is constantly adjusted to minimise the control loop error between "Pres PF Degrees" and "Ref PF Degrees" The parameter displays the displacement part of the True Power Factor and is used for diagnostic purposes. Range: 0 Degrees - 90 Degrees Default: 0 Degrees Type: Read Only	21824

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Monitor	>>>>>>>>>	>>>>>>>>>	Ref PF Degrees	The Reference Power Factor used by the iERS saving function This is the target Power Factor for the iERS saving function. The parameter will change dynamically dependant on motor operation The parameter displays the displacement part of the True Power Factor and is used for diagnostic purposes. Range: 0 Degrees - 90 Degrees Default: 0 Degrees Type: Read Only	21760
Monitor	>>>>>>>>>	>>>>>>>>>	Start Saving Level	The current in Amps at which the iERS is enabled or disabled. The iERS function is active when the motor current is less than the "Start Saving Level" When the iERS function is disabled internal bypass relays close to improve efficiency. Range: 50% I-motor - 80% I-motor Default: 80% I-motor Type: Read Only	21320
Monitor	>>>>>>>>>	>>>>>>>>>	Last Peak Current	Displays the peak current of the last successful start. Range: 0 A - 10000 A Default: 0 A Type: Read Only	38400
Monitor	>>>>>>>>>	>>>>>>>>>	HeatSink Temp	The temperature of the internal Unit heatsink. The Unit will trip when the heatsink temperature exceeds 80°C. The internal cooling fans will turn on if this temperature exceeds 40°C Range: -20 °C - 80 °C Default: °C Type: Read Only	36544
Monitor	>>>>>>>>>	>>>>>>>>>	Motor Thermistor	Indicates the state of the Unit PTC input, designed for single, double or triple PTC in series PTC thermistor standards DIN44081 / EN60738-1 apply (< 300R @ 25°C, typically 4K @ nominal temperature) The value indicated is a not in degrees Celsius but is an internal representation. At 25°C the value displayed should be less than 100 and the Unit trips when value > 400 (open circuit = 1024) The value will increase rapidly when the motor thermistors approach their nominal temperature. If thermistors are connected the "Thermistor trip" should be turned "on" Range: 0 - 1024 Default: 1024 Type: Read Only	10432

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Monitor >>>>>>>>> >>>>>>>>>	Overload	The Unit has an "Overload" function that is an electronic equivalent to a thermal overload. "Overload" displays the overload capacity which is a measure of how close the Unit to tripping on "Overload Trip" When "Current Irms" is greater than the "Overload Level" the "Overload" increases in accordance with the "Trip Class". When "Current Irms" is less than "Overload Level" the "Overload" decreases exponentially (if greater than 50%) When the "Overload" reaches 100% the Unit will trip. During situations when (i-motor) is equal to (i-Unit) the overload will indicate 50% Range 0 % - 100 % Default 0 % Type Read Only	33408

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description — Text in quotes refer to a Synergy parameter or function, for example "Start Time" — i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Log				Displays the last Fault trip	
Log	Trip Log	>>>>>>>>>	Last Trip	Range: 0 - 65535 Default: 0 Type: Read Only	60608
Log	Trip Log	>>>>>>>>>	Last Trip -1	Displays the last Fault trip -1 Range: 0 - 65535 Default: 0 Type: Read Only	60609
Log	Trip Log	>>>>>>>>>	Last Trip -2	Displays the last Fault trip -2 Range: 0 - 65535 Default: 0 Type: Read Only	60610
Log	Trip Log	>>>>>>>>>	Last Trip -3	Displays the last Fault trip -3 Range: 0 - 65535 Default: 0 Type: Read Only	60611
Log	Trip Log	>>>>>>>>>	Last Trip -4	Displays the last Fault trip -4 Range: 0 - 65535 Default: 0 Type: Read Only	60612

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Log	Trip Log	>>>>>>>>>	Last Trip -5	Displays the last Fault trip -5 Range 0 - 65535 Default 0 Type Read Only	60613
Log	Trip Log	>>>>>>>>>	Last Trip -6	Displays the last Fault trip -6 Range 0 - 65535 Default 0 Type Read Only	60614
Log	Trip Log	>>>>>>>>>	Last Trip -7	Displays the last Fault trip -7 Range 0 - 65535 Default 0 Type Read Only	60615
Log	Trip Log	>>>>>>>>>	Last Trip -8	Displays the last Fault trip -8 Range 0 - 65535 Default 0 Type Read Only	60616
Log	Trip Log	>>>>>>>>>	Last Trip -9	Displays the last Fault trip -9 Range 0 - 65535 Default 0 Type Read Only	60617

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	**Description** Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Log	**Trip Log**	**Trip Code Descriptions**	**101** **Input Side Phase Loss**	Phase L1 missing at the instant of start up. The L1 phase is either missing or at a very low level Check all incoming connections. If a main contactor is being controlled by a digital output set to "Running" check contactor delay is sufficient Range | - | Default | | Type | Read Only	
Log	**Trip Log**	**Trip Code Descriptions**	**102** **Input Side Phase Loss**	Phase L2 missing at the instant of start up The L2 phase is either missing or at a very low level Check all incoming connections. If a main contactor is being controlled by a digital output set to "Running" check contactor delay is sufficient Range | - | Default | | Type | Read Only	
Log	**Trip Log**	**Trip Code Descriptions**	**103** **Input Side Phase Loss**	Phase L3 missing at the instant of start up The L3 phase is either missing or at a very low level Check all incoming connections. If a main contactor is being controlled by a digital output set to "Running" check contactor delay is sufficient Range | - | Default | | Type | Read Only	
Log	**Trip Log**	**Trip Code Descriptions**	**104 - 117** **Input Side Phase Loss**	Any or all phases missing when the motor is being controlled L1 phase, L2 phase or L3 phase are missing or at a very low level. Check all incoming connections. Check any fuses / breakers incorporated in the power circuit Range | - | Default | | Type | Read Only	
Log	**Trip Log**	**Trip Code Descriptions**	**201** **Maximum Temp. Exceeded**	Internal heatsink temperature has exceeded 90°C It is possible the Unit is operating outside specified limits. Check enclosure ventilation and airflow around the Unit. If the unit trips immediately the internal temperature sensor could be faulty. Range | - | Default | | Type | Read Only	

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	**Description** Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Log	**Trip Log**	**Trip Code Descriptions**	**208 Thermal Sensor Trip**	Thermal sensor Failure The internal temperature sensor has failed Contact the supplier Range - Default Type Read Only	
Log	**Trip Log**	**Trip Code Descriptions**	**301-308 Thyristor Firing Trip**	One or more of the internal control thyristors (SCRs) have failed to turn on properly. (In-Line "Firing Mode") The Unit has detected that the SCRs are not operating as expected. Check all incoming and outgoing connections. Range - Default Type Read Only	
Log	**Trip Log**	**Trip Code Descriptions**	**350-358 Thyristor Firing Trip**	One or more of the internal control thyristors (SCRs) have failed to turn on properly. (Delta "Firing Mode") The Unit has detected that the SCRs are not operating as expected. Check all incoming and outgoing connections. Range - Default Type Read Only	
Log	**Trip Log**	**Trip Code Descriptions**	**401 Motor Side Phase Loss**	One or all of the phases are missing on the motor side during the instant of start up T1 phase, T2 phase or T3 phase are missing or at a very low level. Check that the motor is connected to T1, T2 and T3. Ensure any disconnecting device between the Unit and the motor is closed at the instant of start up. Range - Default Type Read Only	
Log	**Trip Log**	**Trip Code Descriptions**	**402-403 Motor Side Phase Loss**	One or all of the phases are missing on the motor side during the instant of start up when the motor being controlled T1 phase, T2 phase or T3 phase are missing or at a very low level. Check all incoming and outgoing connections. Range - Default Type Read Only	

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Log	Trip Log	Trip Code Descriptions	601 Control Voltage Too Low	The internal control supply of the Unit level has fallen to a low level Can be caused by a weak 24VDC control supply. Ensure 24VDC supply meets the requirements specified in the Quick Start Guide. Range - Default Type Read Only	
Log	Trip Log	Trip Code Descriptions	701-710 Sensing Fault Trip	One or more of the internal control thyristors (SCRs) have failed to turn on properly. The Unit has detected that the SCRs are not operating as expected. Check connections all incoming and outgoing connections. Range - Default Type Read Only	
Log	Trip Log	Trip Code Descriptions	801-802 Fan Problem	One or more of the internal cooling fans has failed To ensure the heatsink is cooled sufficiently the Unit Will trip if the fans fail to operate Check Unit fans for signs of damage or contamination Range - Default Type Read Only	
Log	Trip Log	Trip Code Descriptions	1001 Short Circuit Thyristor	One or more of the internal control thyristors (SCRs) have failed short circuit The Unit has detected that the SCRs are not operating as expected. ISOLATE SUPPLY. Check by measuring the resistance between L1 -T1, L2 -T2, L3 -T3 (Anything < 10R is assumed short circuit) Range - Default Type Read Only	
Log	Trip Log	Trip Code Descriptions	1101 Low Current Trip	The motor current has been lower than the low trip level for the low trip time This trip is not active during soft start and soft stop and is "off" by default. If the low current trip is not required turn "off" in "Trip Settings". Range - Default Type Read Only	

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	**Description** Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Log	Trip Log	Trip Code Descriptions	1201 Current Limit Timeout Trip	The motor has been held in current limit longer than the "Start current limit Time" It is likely that the current limit level has been set too low for the application. Increase the current limit level or timeout period. Range: - Default: Type: Read Only	
Log	Trip Log	Trip Code Descriptions	1202 Current Limit Timeout Trip	The motor has been held in current limit longer than the "Stop current limit Time" It is likely that the current limit level has been set too low for the application. Increase the current limit level or timeout period. Range: - Default: Type: Read Only	
Log	Trip Log	Trip Code Descriptions	1301 Overload Trip	The "Overload" has exceeded 100% The Unit is attempting to start an application that is outside its capacity or it is starting too often. Refer to the overload trip curves to determine whether the Unit has been sized correctly. Range: - Default: Type: Read Only	
Log	Trip Log	Trip Code Descriptions	1302 Overload Trip	The motor current has exceeded 475% (i-Unit) for a time greater than 250ms The Unit is attempting to start an application that is outside its capacity with a "high current limit level" set Refer to the overload trip curves to determine whether the Unit has been sized correctly , and check current limit level. Range: - Default: Type: Read Only	
Log	Trip Log	Trip Code Descriptions	1401 Shearpin Trip	The motor current has been higher than the "Shearpin Trip Level" for the trip time. This trip is not active during soft start and soft stop and is "off" by default. If Shearpin trip is not required turn "off" in "Trip Settings". Range: - Default: Type: Read Only	

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	**Description** Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Log	**Trip Log**	**Trip Code Descriptions**	**1501 PTC Thermistor Trip**	The PTC thermistor value has exceed the trip level. The PTC thermistor connected to the PTC input has exceeded it response temperature or the PTC input is open circuit. If the PTC TRIP is not required turn "off" in "Trip Settings". Range: - Default: Type: Read Only	
Log	**Trip Log**	**Trip Code Descriptions**	**1601 External Trip**	External Trip The input programmed to External Trip is active If the External trip is not required turn "off" in "Trip settings Range: - Default: Type: Read Only	
Log	**Trip Log**	**Trip Code Descriptions**	**1701 Communications Trip**	Communications failure The command or status PNU has not ben polled in the time set in the "Timeout" period If the communication trip is disabled the Unit cannot be stopped in the communications fail Range: - Default: Type: Read Only	
Log	**Trip Log**	**Trip Code Descriptions**	**1801-1802 Bypass Relay Trip**	One or more of the internal bypass relays has failed to close The internal bypass relay has failed or the control supply is to weak. Ensure 24VDC supply meets the requirements specified in the Quick Start Guide. Range: - Default: Type: Read Only	
Log	**Trip Log**	**Trip Code Descriptions**	**1803 Bypass Relay Trip**	One or more of the internal bypass relays has failed to open The internal bypass relay has failed or the control supply is too weak. Ensure 24VDC supply meets the requirements specified in the Quick Start Guide. Range: - Default: Type: Read Only	

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Log	Trip Log	Trip Code Descriptions	**1901** **Cover Open, Close to Enable Motor Start**	The Unit cover is open The cover is open or not closed properly Close Cover, or if Cover trip is not required turn off in "Trip Settings" Range | - | Default | | Type | Read Only	
Log	Trip Log	Trip Code Descriptions	**2001-2003** **Remote Start is Enabled**	The remote start signal is active. The remote start signal was active during power up or Reset or Parameter Load. Turn off remote, or if Remote On trip is not required turn "off" in "Trip Settings" Range | - | Default | | Type | Read Only	
Log	Trip Log	Trip Code Descriptions	**2101** **Rotation L1 L2 L3 Trip**	The input phase rotation is RYB (L1, L2,L3) The phase rotation is opposite to that required. Change phase rotation, or if "RYB" trip is not required turn "off" in trip settings. Range | - | Default | | Type | Read Only	
Log	Trip Log	Trip Code Descriptions	**2102** **Rotation L1 L3 L2 Trip**	The input phase rotation is RBY (L1, L3,L2) The phase rotation is opposite to that required. Change phase rotation, or if "RBY" trip is not required turn "off" in trip settings. Range | - | Default | | Type | Read Only	
Log	Trip Log	Trip Code Descriptions	**2201-2299** **2701-2799** **MPU Trip**	Internal Unit Failure The Unit has failed internally and is unable to recover automatically. Cycle the control supply. If the fault is not cleared then contact the supplier Range | - | Default | | Type | Read Only	

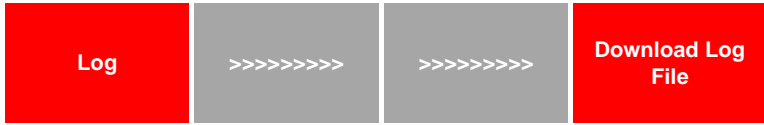| SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Log	Trip Log	Trip Code Descriptions	2301-2303 Current Sensor Trip	Current sensor failure One or more of the internal sensors used to measure current has failed or is reading a low value. Check the connections to the supply and motor as disconnection will result in a zero current reading. Check the plate FLA of the motor being controlled is at least 25% of the "i-motor" rating Range: - Default: Type: Read Only	
Log	Trip Log	Trip Code Descriptions	2401-2499 Operation 3 Trip	Fail Safe operation A process associated with the Control Board has been affected and is unable to recover automatically The trip MUST be reset by either the digital input, keypad or bus command depending on the control method set. This trip is a special case and it is NOT possible to reset this trip by cycling the control supply Range: - Default: Type: Read Only	
Log	Trip Log	Trip Code Descriptions	2501-2599 Operation 1 Trip	Fail Safe operation A process associated with the Keypad board has been affected and is unable to recover automatically The trip can be reset by either the digital input, keypad or bus command depending on the control method set. It is also possible to reset this trip by cycling the control supply Range: - Default: Type: Read Only	
Log	Trip Log	Trip Code Descriptions	2601-2699 Operation 2 Trip	Fail Safe operation A process associated with the Logging function has been affected and is unable to recover automatically The trip can be reset by either the digital input, keypad or bus command depending on the control method set. It is also possible to reset this trip by cycling the control supply Range: - Default: Type: Read Only	
Log	Trip Log	>>>>>>>>	Last Peak Current	Displays the peak current of the last successful start. Range: 0 A - 10000 A Default: 0 A Type: Read Only	38400

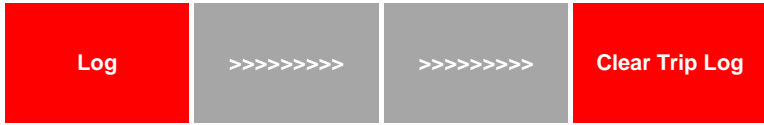| SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Log	Trip Log	>>>>>>>>>	**Last peak start current -1**	Displays the peak current of the last successful start -1 Range 0 A - 10000 A Default 0 A Type Read Only	38402
Log	Trip Log	>>>>>>>>>	**Last peak start current -2**	Displays the peak current of the last successful start -2 Range 0 A - 10000 A Default 0 A Type Read Only	38404
Log	Trip Log	>>>>>>>>>	**Last peak start current -3**	Displays the peak current of the last successful start -3 Range 0 A - 10000 A Default 0 A Type Read Only	38406
Log	Trip Log	>>>>>>>>>	**Last peak start current -4**	Displays the peak current of the last successful start -4 Range 0 A - 10000 A Default 0 A Type Read Only	38408
Log	Trip Log	>>>>>>>>>	**Last peak start current -5**	Displays the peak current of the last successful start -5 Range 0 A - 10000 A Default 0 A Type Read Only	38410

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Log	Trip Log	>>>>>>>>>	Last peak start current -6	Displays the peak current of the last successful start -6 Range 0 A - 10000 A Default 0 A Type Read Only	38412
Log	Trip Log	>>>>>>>>>	Last peak start current -7	Displays the peak current of the last successful start -7 Range 0 A - 10000 A Default 0 A Type Read Only	38414
Log	Trip Log	>>>>>>>>>	Last peak start current -8	Displays the peak current of the last successful start -8 Range 0 A - 10000 A Default 0 A Type Read Only	38416
Log	Trip Log	>>>>>>>>>	Last peak start current -9	Displays the peak current of the last successful start -9 Range 0 A - 10000 A Default 0 A Type Read Only	38418
Log	Trip Log	>>>>>>>>>	Last peak stop current	Displays the peak current of the last successful stop Range 0 A - 10000 A Default 0 A Type Read Only	39040

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Log	Trip Log	>>>>>>>>>	Last peak stop current -1	Displays the peak current of the last successful stop -1 Range: 0 A - 10000 A Default: 0 A Type: Read Only	39042
Log	Trip Log	>>>>>>>>>	Last peak stop current -2	Displays the peak current of the last successful stop -2 Range: 0 A - 10000 A Default: 0 A Type: Read Only	39044
Log	Trip Log	>>>>>>>>>	Last peak stop current -3	Displays the peak current of the last successful stop -3 Range: 0 A - 10000 A Default: 0 A Type: Read Only	39046
Log	Trip Log	>>>>>>>>>	Last peak stop current -4	Displays the peak current of the last successful stop -4 Range: 0 A - 10000 A Default: 0 A Type: Read Only	39048
Log	Trip Log	>>>>>>>>>	Last peak stop current -5	Displays the peak current of the last successful stop -5 Range: 0 A - 10000 A Default: 0 A Type: Read Only	39050

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Log Trip Log >>>>>>>>>	Last peak stop current -6	Displays the peak current of the last successful stop -6 Range 0 A - 10000 A Default 0 A Type Read Only	39052
Log Trip Log >>>>>>>>>	Last peak stop current -7	Displays the peak current of the last successful stop -7 Range 0 A - 10000 A Default 0 A Type Read Only	39054
Log Trip Log >>>>>>>>>	Last peak stop current -8	Displays the peak current of the last successful stop -8 Range 0 A - 10000 A Default 0 A Type Read Only	39056
Log Trip Log >>>>>>>>>	Last peak stop current -9	Displays the peak current of the last successful stop -9 Range 0 A - 10000 A Default 0 A Type Read Only	39058
Log Trip Log >>>>>>>>>	Last temperature	Displays the heatsink temperature at the end of the last successful start Range -20 °C - 80 °C Default °C Type Read Only	39680

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Log **Trip Log** >>>>>>>>>	**Last temperature - 1**	Displays the heatsink temperature at the end of the last successful start -1 Range -20 °C - 80 °C Default °C Type Read Only	39681
Log **Trip Log** >>>>>>>>>	**Last temperature - 2**	Displays the heatsink temperature at the end of the last successful start -2 Range -20 °C - 80 °C Default °C Type Read Only	39682
Log **Trip Log** >>>>>>>>>	**Last temperature - 3**	Displays the heatsink temperature at the end of the last successful start-3 Range -20 °C - 80 °C Default °C Type Read Only	39683
Log **Trip Log** >>>>>>>>>	**Last temperature - 4**	Displays the heatsink temperature at the end of the last successful start-4 Range -20 °C - 80 °C Default °C Type Read Only	39684
Log **Trip Log** >>>>>>>>>	**Last temperature - 5**	Displays the heatsink temperature at the end of the last successful start-5 Range -20 °C - 80 °C Default °C Type Read Only	39685

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Log	Trip Log	>>>>>>>>>	Last temperature - 6	Displays the heatsink temperature at the end of the last successful start-6 Range [-20 °C - 80 °C] Default [°C] Type [Read Only]	39686
Log	Trip Log	>>>>>>>>>	Last temperature - 7	Displays the heatsink temperature at the end of the last successful start-7 Range [-20 °C - 80 °C] Default [°C] Type [Read Only]	39687
Log	Trip Log	>>>>>>>>>	Last temperature - 8	Displays the heatsink temperature at the end of the last successful start-8 Range [-20 °C - 80 °C] Default [°C] Type [Read Only]	39688
Log	Trip Log	>>>>>>>>>	Last temperature - 9	Displays the heatsink temperature at the end of the last successful start-9 Range [-20 °C - 80 °C] Default [°C] Type [Read Only]	39689
Log	Trip Log	>>>>>>>>>	Last overload	Displays the overload level at the end of the last successful start Range [0 % - 100 %] Default [0 %] Type [Read Only]	40320

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Log Trip Log >>>>>>>>>	Last overload-1	Displays the overload level at the end of the last successful start -1 Range 0 % - 100 % Default 0 % Type Read Only	40321
Log Trip Log >>>>>>>>>	Last overload-2	Displays the overload level at the end of the last successful start -2 Range 0 % - 100 % Default 0 % Type Read Only	40322
Log Trip Log >>>>>>>>>	Last overload-3	Displays the overload level at the end of the last successful start -3 Range 0 % - 100 % Default 0 % Type Read Only	40323
Log Trip Log >>>>>>>>>	Last overload-4	Displays the overload level at the end of the last successful start -4 Range 0 % - 100 % Default 0 % Type Read Only	40324
Log Trip Log >>>>>>>>>	Last overload-5	Displays the overload level at the end of the last successful start -5 Range 0 % - 100 % Default 0 % Type Read Only	40325

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Log	Trip Log	>>>>>>>>>	Last overload-6	Displays the overload level at the end of the last successful start -6 Range [0 % - 100 %] Default [0 %] Type [Read Only]	40326
Log	Trip Log	>>>>>>>>>	Last overload-7	Displays the overload level at the end of the last successful start -7 Range [0 % - 100 %] Default [0 %] Type [Read Only]	40327
Log	Trip Log	>>>>>>>>>	Last overload-8	Displays the overload level at the end of the last successful start -8 Range [0 % - 100 %] Default [0 %] Type [Read Only]	40328
Log	Trip Log	>>>>>>>>>	Last overload-9	Displays the overload level at the end of the last successful start -9 Range [0 % - 100 %] Default [0 %] Type [Read Only]	40329
Log	Totals Log	>>>>>>>>>	Number of Starts	The total number of successful starts Range [0 - 4294836225] Default [0] Type [Read Only]	35840

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Log	>>>>>>>>>	>>>>>>>>>	**Download Log File**	Download the full log file on to the USB stick The Unit logs several parameters during normal and fault conditions Data is stored in CSV format. Please send all downloaded files to Fairford on request Range [-]　　Default [ ]　　Type [Read/Write]	
Log	>>>>>>>>>	>>>>>>>>>	**Clear Trip Log**	Deletes all of the history in the Trip Log Range [No - Yes]　　Default [No]　　Type [Read/Write]	62081

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Device					
Device	>>>>>>>>	>>>>>>>>	Update Firmware	Used to upgrade to the latest version of software using a USB stick Details for the upgrading process are supplied with the updated version of software Range: - Default: Type: Read/Write	
Device	>>>>>>>>	>>>>>>>>	Date	Enter current date Date format can be set to either dd/mm/yyyy or mm/dd/yyyy , refer to "Date format" parameter Range: - Default: Type: Read/Write	
Device	>>>>>>>>	>>>>>>>>	Time	Allows the time to be changed to 'local' time By default the time is set to GMT Range: - hh:mm:ss - - hh:mm:ss Default: GMT time hh:mm:ss Type: Read/Write	14720
Device	>>>>>>>>	>>>>>>>>	Language	Selects the display language for the keypad Enter the required language from the displayed list Range: English - End of list Default: English Type: Read/Write	13376
Device	>>>>>>>>	>>>>>>>>	Passcode	Stops unauthorised access to read/ write parameters For the passcode be active the "Screen lock" must be turned on Range: 0 - Max Value Default: 0 Type: Read/Write	12864

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	**Description** Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Device	>>>>>>>>>	>>>>>>>>>	**Backlight Timeout**	Time for backlight on display After the period set the back light on the screen will turn off To reactivate touch screen anywhere. To disable set to 0 Range [0 s - 3600 s] Default [60 s] Type [Read/Write]	14208
Device	**Networks**	**Modbus Network Settings**	**Address**	Sets the Modbus station number Range [1 - 32] Default [1] Type [Read/Write]	16000
Device	**Networks**	**Modbus Network Settings**	**Baud Rate**	Sets the serial communications baud rate The available baud rates are 9600, 19200, 38400, 57600, 115200 Range [9600 - 115200] Default [19200] Type [Read/Write]	16064
Device	**Networks**	**Modbus Network Settings**	**Parity**	Sets the serial communications parity bit The available parity options are None, Even and Odd Also sets the stop bits. No parity uses 2 stop bits, odd/even parity uses 1 stop bit Range [None - Odd] Default [Even] Type [Read/Write]	16128
Device	**Networks**	**Modbus Network Settings**	**Traffic LEDS**	Allows the user to check the state of the modbus communication network. Red LED receive, Green LED Transmit. On : The Red and Green LEDS display the traffic on the Modbus communications network Off : The Red and Green LEDs display the Unit status information Range [Off - On] Default [Off] Type [Read/Write]	14080

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]			Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Device	Networks	>>>>>>>>>	Anybus	Anybus expansion module Only active with Anybus module fitted Range: - Default: Type: Read Only	
Device	Networks	>>>>>>>>>	Timeout ms	Communications trip Timeout period To prevent a 'Communications Trip' (If enabled) the bus must be kept active. To keep the bus active there must be at least one Modbus read or write (any PNU) during the "Timeout ms" period Range: 0 ms - 60000 ms Default: 5000 ms Type: Read/Write	15808
Device	>>>>>>>>>	>>>>>>>>>	Reset Defaults	Restores the Unit to the factory defaults Range: No - Yes Default: No Type: Read/Write	62080
Device	>>>>>>>>>	>>>>>>>>>	About	Gives the Model number, serial Number and current software versions The software versions are SGY1xxxxxx SGY2xxxxxx and SGY3xxxxxx. Range: - Default: Type: Read Only	
Device	>>>>>>>>>	>>>>>>>>>	Screen Lock	Stops unauthorised access to read/ write parameters Range: Off - On Default: Off Type: Read/Write	12992

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]				Parameter	Description Text in quotes refer to a Synergy parameter or function, for example "Start Time" i-synergy = synergy Class 10 current, i-rated = synergy Class20 / Class30 current, i-motor = motor current	Modbus PNU
Device	>>>>>>>>>	>>>>>>>>>		Date Format	Allows the date format to be changed dd/mm/yyyy or mm/dd/yyyy Range dd/mm/yyyy - mm/dd/yyyy Default dd/mm/yyyy Type Read/Write	13248
Device	>>>>>>>>>	>>>>>>>>>		Temperature Format	Selects °C or °F for displayed temperatures °C : All displayed temperatures are °C °F : All displayed temperatures are °F Range °C - °F Default °C Type Read/Write	13312
Device	>>>>>>>>>	>>>>>>>>>		Parameters to USB	Allows the user to save parameters Downloads the parameters from the Unit to the USB drive Data is stored in CSV format. Range No - Yes Default No Type Read/Write	62272
Device	>>>>>>>>>	>>>>>>>>>		Parameters from USB	Allows the user to load parameters stored on a USB flash drive Uploads the parameters from the USB drive to the Unit Data is stored in CSV format. Range No - Yes Default No Type Read/Write	62336
Device	>>>>>>>>>	>>>>>>>>>		Service Code	Diagnostic parameter For Fairford use only Range - Default Type	13120