synergy™

Programming Manual

Modbus RTU

fairford
Soft Start Technology
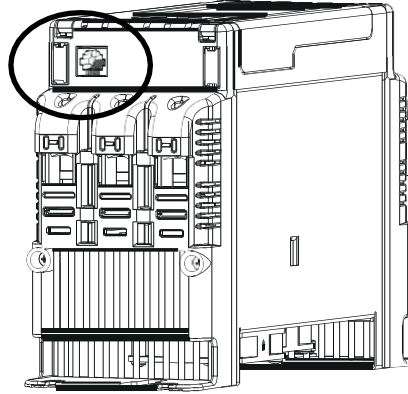

iERS
Intelligent Energy Recovery System

CE   ETL LISTED   CONFORMS TO STD UL 508 CSA 22.2 No. 14

OVERVIEW

Synergy has integrated serial communications that are a compatible subset of the widely recognised Modbus RTU protocol (slave). The serial communications (RS485) is accessible from the RJ12 connection.

MODUBUS COMMUNICATIONS CONFIGURATION

The Modbus communication settings are accessible from the Device menu:

Device >> Modbus Network Settings >> Address (1 – 32)
Device >> Modbus Network Settings >> Baud (9600 – 115200)
Device >> Modbus Network Settings >> Parity (Odd / Even)

(Data bits = 8, Stop bits = 1)

The communication parameters should be set before connecting the Modbus master.

MODBUS CONNECTOR (SOCKET) PIN-OUT (RJ12) – VIEWED FROM FRONT
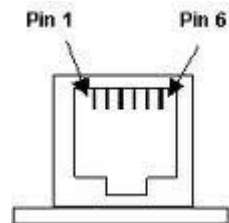
Pin1 – GND
Pin2 – Reserved*
Pin 3 – Not connected
Pin 4 – Not connected
Pin 5 – TXD0-A-OUT
Pin 6 – TXD1-B-OUT

* To avoid damage to the Synergy unit or to the RS485 master, do not connect to this pin

TRANSMISSION MODES

ASCII and RTU transmission modes are defined in the Modbus protocol specification. Synergy uses only the RTU mode for the telegram transmission.

TELEGRAM STRUCTURE FOR RTU MODE

The Modbus RTU structure uses a master-slave system for message exchange. In the case of the Synergy system, it allows up to 32 slaves, and one master. Every telegram begins with the master making a request to a slave, which responds to the master in a defined structure. In both telegrams (request and answer), the used structure is the same: Address, Function Code, Data and CRC.

Master (request telegram):

Address (1 byte)	Function (1 byte)	Request Data (n bytes)	CRC (2 bytes)

Slave (response telegram):

Address (1 byte)	Function (1 byte)	Response Data (n bytes)	CRC (2 bytes)

Address

The master initiates the communication sending a byte with the address of the destination slave. When responding, the slave also initiates the telegram with its own address. Broadcast to address 0 (zero), is not supported

Function Code

This field also contains a single byte, where the master specifies the kind of service or function requested to the slave (reading, writing, etc.). According to the protocol, each function is used to access a specific type of data. For the available list of supported functions, refer to Section 2.

Data Field
The format and contents of this field depend on the used function and the transmitted value.

CRC
The used method is the CRC-16 (Cyclic Redundancy Check). This field is formed by two bytes; where first the least significant byte is transmitted (CRC-), and then the most significant (CRC+). The CRC calculation form is described in the Modbus RTU protocol specification.

SUPPORTED FUNCTIONS

Modbus RTU specification defines the functions used to access different types of data. In Synergy the parameters are defined as being holding type registers. The following services are available:

Read Holding Registers
Description: reading of register blocks of the holding register type.
Function code: 03
Modbus function 03 transaction table:

Query		Response	
Field	Hex Byte	Field	Hex Byte
Slave address	01	Slave address	01
Function	03	Function	03
Start address Hi	00	Byte count	02
Start address Lo	01	Data Hi	01
No of registers Hi	00	Data Lo	2C
No of registers Lo	01	CRC Lo	??
CRC Lo	??	CRC Hi	??
CRC Hi	??		

Write Single Register

Description: writing in a single register of the holding type.
Function code: 06.

Modbus function 06 transaction table:

Query		Response	
Field	Hex Byte	Field	Hex Byte
Slave address	01	Slave address	01
Function	06	Function	06
Address Hi	00	Address Hi	02
Address Lo	0C	Address Lo	0C
Force data Hi	00	Force data Hi	00
Force data Lo	09	Force data Lo	09
CRC Lo	??	CRC Lo	??
CRC Hi	??	CRC Hi	??

Write Multiple Registers

Description: writing in register blocks of the holding register type.
Function code: 16.

Modbus function 16 transaction table:

| Query		Response	
Field	Hex Byte	Field	Hex Byte
Slave address	01	Slave address	01
Function	16	Function	16
Address Hi	00	Address Hi	02
Address Lo	0C	Address Lo	0C
Force data Hi	00	Force data Hi	00
Force data Lo	09	Force data Lo	09
CRC Lo	??	CRC Lo	??
CRC Hi	??	CRC Hi	??

MEMORY MAP

Synergy Modbus communication is based on reading or writing equipment parameters from or to the holding registers. The data addressing is zero offset such that the parameter number corresponds to the register number.

Parameter Number (PNU)	Modbus Data Address	
	Decimal	Hexadecimal
PNU0000	0	0000h
PNU0001	1	0001h
:	:	:
PNU0128	128	0080h
:	:	:

MESSAGE TIMING

In the RTU mode there is no specific start or stop byte that marks the beginning or the end of a telegram. Indication of when a new message begins or when it ends is achieved by the absence of data transmission for a minimum period of 3.5 times the transmission time of a data byte. Thus, in case a telegram is transmitted after this minimum time has elapsed; the network elements will assume that the first received character represents the beginning of a new telegram.
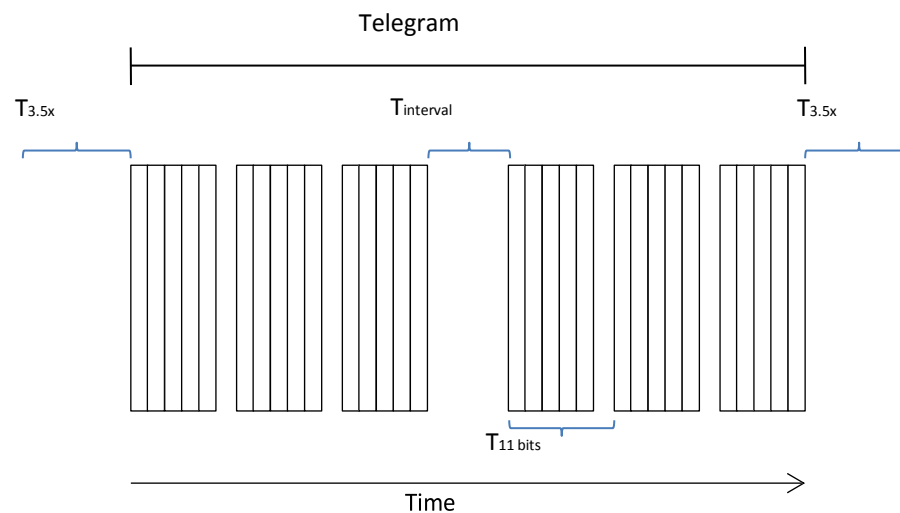
$T_{11 \, bits}$ = Time for transmitting one byte of the telegram.
$T_{between \, bytes}$ = Time between bytes.
$T_{3,5x}$ = Minimum interval to indicate beginning and end of a telegram (3.5 x T11bits).

CONNECTION

Close header S9
(last splitter)

120Ω jumper on

(Max 31 units)

Close header S6
(first splitter)

SGY-011

Set each unit to unique modbus address (1-31)
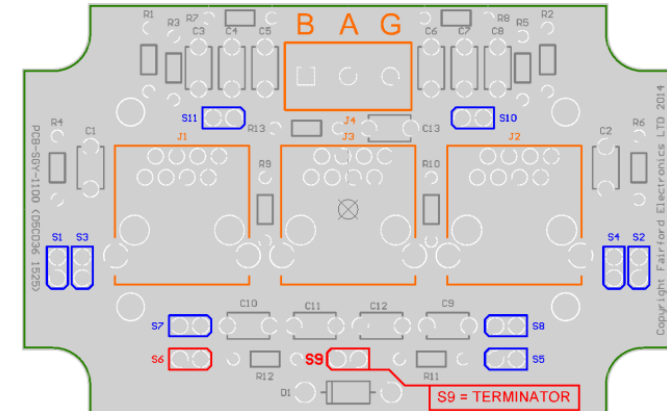
SGY-011 jumper locations

S9 = TERMINATOR

Close header S9
(last splitter)

120Ω jumper on

(Max 31 units)

Ensure S6 open on all splitters

SGY-011

Set each unit to unique modbus address (2-31)

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	128 (80 hex)	Set to correspond with Unit connection to the Motor. Refer to connection diagrams in the Quick Start Guide.
PNU Name	Firing Mode	In-Line : The Unit is connected in-line with a delta or star connected motor.
PNU Format	8 bit unsigned	In-Delta : The Unit is connected inside the Delta of the motor. The iERS function is disabled
PNU Note	Binary value	Range: 0 (0 hex) In-Line - 1 (1 hex) In-Delta Default: 0 (0 hex) In-Line Type: Read/Write

PNU Number	192 (C0 hex)	Allows the Unit to be retro-fitted into "Delta" applications that previously used QFE / XFE (5MC)
PNU Name	Legacy Delta Mode	On : Operates in QFE / XFE (5MC) delta compatibility mode.
PNU Format	8 bit unsigned	Off : Operates normally. Refer to Unit Delta connection diagram in the Quick Start Guide.
PNU Note	Binary value	Range: 0 (0 hex) Off - 1 (1 hex) On Default: 0 (0 hex) Off Type: Read/Write

PNU Number	320 (140 hex)	Applies a short duration torque pulse to dislodge 'sticky' loads
PNU Name	Kick Start	On : The torque pulse is applied at start-up, when complete the torque drops to the "Start Pedestal"
PNU Format	8 bit unsigned	Off: The initial starting torque is defined by the "Start Pedestal"
PNU Note	Binary value	Range: 0 (0 hex) Off - 1 (1 hex) On Default: 0 (0 hex) Off Type: Read/Write

PNU Number	640 (280 hex)	Percentage of the supply voltage applied to the motor during the 'kick' period
PNU Name	Kick Start Pedestal	Increase to provide more torque If the load fails to break away.
PNU Format	16 bit unsigned	Decrease if the motor accelerates too quickly.
PNU Note	Linear Scaling (1 = 0.006104 %)	Range: 4915 (1333 hex) 30% - 13107 (3333 hex) 80% Default: 12288 (3000 hex) 75% Type: Read/Write

PNU Number	704 (2C0 hex)	Percentage of the supply voltage applied to motor at the beginning of the soft start.
PNU Name	Start Pedestal	Increase to provide more torque If the load fails to break away.
PNU Format	16 bit unsigned	Decrease if the motor accelerates too quickly.
PNU Note	Linear Scaling (1 = 0.006104 %)	Range: 1638 (666 hex) 10% - 16384 (4000 hex) 100% Default: 3276 (CCC hex) 20% Type: Read/Write

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	768 (300 hex)	Adjusts the response of the "Automatic End Start (3)"						
PNU Name	Rate End Start (3)	Increase to provide a greater smoothing effect If there are torque fluctuations that occur during the soft start.						
PNU Format	16 bit unsigned	When set to zero the smoothing is effectively disabled.						
PNU Note	Linear Scaling (1 = 0.006104 %)	Range	0 (0 hex) 0%	-	16384 (4000 hex) 100%	Default	8192 (2000 hex) 50%	Type	Read/Write

PNU Number	896 (380 hex)	Percentage of the supply voltage applied to the motor at the end of the soft stop						
PNU Name	Stop Pedestal	Increase if the motor crawls at the end of the soft stop.						
PNU Format	16 bit unsigned	Decrease if a greater soft-stop effect is required at the end of the ramp.						
PNU Note	Linear Scaling (1 = 0.006104 %)	Range	1638 (666 hex) 10%	-	6553 (1999 hex) 40%	Default	1638 (666 hex) 10%	Type	Read/Write

PNU Number	7040 (1B80 hex)	Time that the torque pulse is applied to load						
PNU Name	Kick Start Time	Increase to provide more torque If the load fails to break away.						
PNU Format	16 bit unsigned	Decrease if the motor accelerates too quickly.						
PNU Note	Linear Scaling (1 = 1 ms)	Range	10 (A hex) 10ms	-	2000 (7D0 hex) 2000ms	Default	100 (64 hex) 100ms	Type	Read/Write

PNU Number	7104 (1BC0 hex)	Time taken to soft start from the "Start Pedestal" to the end of the start						
PNU Name	Start Time	Normally set between 5 and 30 seconds. Actual time to get to full voltage depends on the "Start Current Limit Level".						
PNU Format	16 bit unsigned	If set too long the motor can be at speed before the end of the time set, refer to "Automatic End Start"						
PNU Note	Linear Scaling (1 = 1 s)	Range	1 (1 hex) 1s	-	300 (12C hex) 300s	Default	10 (A hex) 10s	Type	Read/Write

PNU Number	7296 (1C80 hex)	The time taken to soft stop from full voltage or the iERS level to the 'Stop Pedestal'						
PNU Name	Stop Time	Normally set between 15 and 60 seconds. Actual time to get to 'Stop Pedestal' depends on the "Stop Current Limit Level".						
PNU Format	16 bit unsigned	If set too long motor may reach zero speed before the end of the time set, refer to "Automatic End Stop"						
PNU Note	Linear Scaling (1 = 1 s)	Range	0 (0 hex) 0s	-	300 (12C hex) 300s	Default	0 (0 hex) 0s	Type	Read/Write

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	7360 (1CC0 hex)
PNU Name	Dwell Time
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 1 s)

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 (1 hex) 1s - 300 (12C hex) 300s	Default	5 (5 hex) 5s	Type	Read/Write

---

PNU Number	8320 (2080 hex)
PNU Name	Contactor Delay
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 1 ms)

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 (14 hex) 20ms - 800 (320 hex) 800ms	Default	160 (A0 hex) 160ms	Type	Read/Write

---

PNU Number	8960 (2300 hex)
PNU Name	Analogue Output Type
PNU Format	8 bit unsigned
PNU Note	Binary value

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 (0 hex) 0 - 10V - 1 (1 hex) 4 - 20mA	Default	0 (0 hex) 0 - 10V	Type	Read/Write

---

PNU Number	9024 (2340 hex)
PNU Name	Select Function
PNU Format	16 bit unsigned
PNU Note	514=Imeasued, 522=Overload, 161=OverloadSCR, 542=Ptotal

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	0 (0 hex) Off - 999 (3E7 hex) End of list	Default	0 (0 hex) Off	Type	Read/Write

---

PNU Number	9088 (2380 hex)
PNU Name	Scaling Level
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 0.006104 %)

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 (0 hex) 0 - 16384 (4000 hex) Max value	Default	0 (0 hex) 0	Type	Read/Write

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	9152 (23C0 hex)	The value of the Analogue output
PNU Name	Analogue Output Value	The internal Digital to analogue converter is 10 bit.
PNU Format	16 bit unsigned	
PNU Note	Linear (1 = 0.0625)	Range 0 (0 hex) 0 - 1024 (400 hex) 1024 Default 0 (0 hex) 0 Type Read Only

PNU Number	9600 (2580 hex)	Defines the function of the analogue input (AI)
PNU Name	Analogue Input Type	0-10V : The input voltage varies from 0-10V
PNU Format	8 bit unsigned	4-20mA : The input varies from 4 to 20mA
PNU Note	Binary value	Range 0 (0 hex) 0 - 10V - 1 (1 hex) 4 - 20mA Default 0 (0 hex) 0 - 10V Type Read/Write

PNU Number	9664 (25C0 hex)	Allows the Analogue input to be mapped to different functions
PNU Name	Select Function	The selected function will change in proportion with the input
PNU Format	16 bit unsigned	By default the function will be at its maximum when the input is at it maximum
PNU Note	420=CurrentLimitStart, 431=Ishearpin, 441=Ioverlaod	Range 0 (0 hex) Off - 999 (3E7 hex) End of list Default 0 (0 hex) Off Type Read/Write

PNU Number	9728 (2600 hex)	Allows the selected function to be scaled
PNU Name	Scaling Level	The selected function will change in proportion with the input
PNU Format	16 bit unsigned	The function will be at its "Scaling Level" when the input is at its maximum
PNU Note	Linear Scaling (1 = 0.006104 %)	Range 0 (0 hex) 0 - 16384 (4000 hex) Max value Default 0 (0 hex) Max value Type Read/Write

PNU Number	9792 (2640 hex)	The value of the analogue Input
PNU Name	Analogue Input Value	The internal Analogue to Digital converter is 10 bit.
PNU Format	16 bit unsigned	
PNU Note	Linear (1 = 0.0625)	Range 0 (0 hex) 0 - 1024 (400 hex) 1024 Default 0 (0 hex) 0 Type Read Only

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	10432 (28C0 hex)	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)
PNU Name	Motor Thermistor	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)
PNU Format	16 bit unsigned	The value will increase rapidly when the motor thermistors approach their nominal temperature. If thermistors are connected the "Thermistor trip" should be turned "on"
PNU Note	Linear Scaling (1 = 1)	Range: 0 (0 hex) 0 - 1024 (400 hex) 1024 Default: 0 (0 hex) 1024 Type: Read Only

PNU Number	10880 (2A80 hex)	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
PNU Name	Digital Input Voltage	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
PNU Format	16 bit unsigned	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.
PNU Note	0=230V, 1=110V, 2=24V	Range: 0 (0 hex) 230V - 2 (2 hex) 24VDC Default: 0 (0 hex) 230V Type: Read/Write

PNU Number	10944 (2AC0 hex)	Allows the Digital input (D1-1I) to be mapped to different functions
PNU Name	Select Function	The selected function will change in proportion with the input
PNU Format	16 bit unsigned	Digital inputs can only be mapped if the "Control Method" is set to "User Programmable"
PNU Note	280=Start/Stop, 285=FreezeRamp 287=Reset, 330=iErs,295=ExternalTrip	Range: 0 (0 hex) Off - 999 (3E7 hex) End of list Default: 280 (118 hex) Start/Stop Type: Read/Write

PNU Number	10945 (2AC1 hex)	Allows the Digital input (D1-2I) to be mapped to different functions
PNU Name	Select Function	The selected function will change in proportion with the input
PNU Format	16 bit unsigned	Digital inputs can only be mapped if the "Control Method" is set to "User Programmable"
PNU Note	280=Start/Stop, 285=FreezeRamp 287=Reset, 330=iErs,295=ExternalTrip	Range: 0 (0 hex) Off - 999 (3E7 hex) End of list Default: 0 (0 hex) Off Type: Read/Write

PNU Number	10946 (2AC2 hex)	Allows the Digital input (D2-1I) to be mapped to different functions
PNU Name	Select Function	The selected function will change in proportion with the input
PNU Format	16 bit unsigned	Digital inputs can only be mapped if the "Control Method" is set to "User Programmable"
PNU Note	280=Start/Stop, 285=FreezeRamp 287=Reset, 330=iErs,295=ExternalTrip	Range: 0 (0 hex) Off - 999 (3E7 hex) End of list Default: 287 (11F hex) Reset Type: Read/Write

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	11584 (2D40 hex)	Allows the Digital output (N/C (12)) to be mapped to different functions
PNU Name	Select Function	The output will change in proportion with the selected output
PNU Format	16 bit unsigned	
PNU Note	581=Rdy,582=En,583=Error,588=Running 590=EndOfStart,591=C/L,595=iErsActive	

Range	0 (0 hex) Off	-	999 (3E7 hex) End of list	Default	583 Error	Type	Read/Write

PNU Number	11585 (2D41 hex)	Allows the Digital output (N/0 (24)) to be mapped to different functions
PNU Name	Select Function	The output will change in proportion with the selected output
PNU Format	16 bit unsigned	
PNU Note	581=Rdy,582=En,583=Error,588=Running 590=EndOfStart,591=C/L,595=iErsActive	

Range	0 (0 hex) Off	-	999 (3E7 hex) End of list	Default	583 Error	Type	Read/Write

PNU Number	11586 (2D42 hex)	Allows the Digital output (N/0 (34)) to be mapped to different functions
PNU Name	Select Function	The output will change in proportion with the selected output
PNU Format	16 bit unsigned	
PNU Note	581=Rdy,582=En,583=Error,588=Running 590=EndOfStart,591=C/L,595=iErsActive	

Range	0 (0 hex) Off	-	999 (3E7 hex) End of list	Default	588 Running	Type	Read/Write

PNU Number	11587 (2D43 hex)	Allows the Digital output (N/0 (44)) to be mapped to different functions
PNU Name	Select Function	The output will change in proportion with the selected output
PNU Format	16 bit unsigned	
PNU Note	581=Rdy,582=En,583=Error,588=Running 590=EndOfStart,591=C/L,595=iErsActive	

Range	0 (0 hex) Off	-	999 (3E7 hex) End of list	Default	590 End Of Start	Type	Read/Write

PNU Number	12800 (3200 hex)	The device serial number stored at the point of manufacture
PNU Name	Serial Number	
PNU Format	8 bit unsigned	
PNU Note	ASCII alpha numeric character Byte 7 (MSB)	

Range	0 (0 hex) 0	-	255 (FF hex) 255	Default	Not Applicable	Type	Read Only

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]		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					

PNU Number	12801 (3201 hex)	The device serial number stored at the point of manufacture					
PNU Name	Serial Number						
PNU Format	8 bit unsigned						
PNU Note	ASCII alpha numeric character Byte 6	Range	0 (0 hex) 0　　-　　255 (FF hex) 255	Default	Not Applicable	Type	Read Only

PNU Number	12802 (3202 hex)	The device serial number stored at the point of manufacture					
PNU Name	Serial Number						
PNU Format	8 bit unsigned						
PNU Note	ASCII alpha numeric character Byte 5	Range	0 (0 hex) 0　　-　　255 (FF hex) 255	Default	Not Applicable	Type	Read Only

PNU Number	12803 (3203 hex)	The device serial number stored at the point of manufacture					
PNU Name	Serial Number						
PNU Format	8 bit unsigned						
PNU Note	ASCII alpha numeric character Byte 4	Range	0 (0 hex) 0　　-　　255 (FF hex) 255	Default	Not Applicable	Type	Read Only

PNU Number	12804 (3204 hex)	The device serial number stored at the point of manufacture					
PNU Name	Serial Number						
PNU Format	8 bit unsigned						
PNU Note	ASCII alpha numeric character Byte 3	Range	0 (0 hex) 0　　-　　255 (FF hex) 255	Default	Not Applicable	Type	Read Only

PNU Number	12805 (3205 hex)	The device serial number stored at the point of manufacture					
PNU Name	Serial Number						
PNU Format	8 bit unsigned						
PNU Note	ASCII alpha numeric character Byte 2	Range	0 (0 hex) 0　　-　　255 (FF hex) 255	Default	Not Applicable	Type	Read Only

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]		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					
PNU Number	12806 (3206 hex)	The device serial number stored at the point of manufacture					
PNU Name	Serial Number						
PNU Format	8 bit unsigned						
PNU Note	ASCII alpha numeric character Byte 1	Range	0 (0 hex) 0 - 255 (FF hex) 255	Default	Not Applicable	Type	Read Only
PNU Number	12807 (3207 hex)	The device serial number stored at the point of manufacture					
PNU Name	Serial Number						
PNU Format	8 bit unsigned						
PNU Note	ASCII alpha numeric character Byte 0	Range	0 (0 hex) 0 - 255 (FF hex) 255	Default	Not Applicable	Type	Read Only
PNU Number	12864 (3240 hex)	Stops unauthorised access to read/ write parameters					
PNU Name	Passcode	For the passcode be active the "Screen lock" must be turned on					
PNU Format	8 bit unsigned						
PNU Note	ASCII alpha numeric character Byte 3 (MSB)	Range	48 (30 hex) 0 - 57 (39 hex) Max Value	Default	48 (30 hex) 0	Type	Read/Write
PNU Number	12865 (3241 hex)	Stops unauthorised access to read/ write parameters					
PNU Name	Passcode	For the passcode be active the "Screen lock" must be turned on					
PNU Format	8 bit unsigned						
PNU Note	ASCII alpha numeric character Byte 2	Range	48 (30 hex) 0 - 57 (39 hex) Max Value	Default	48 (30 hex) 0	Type	Read/Write
PNU Number	12866 (3242 hex)	Stops unauthorised access to read/ write parameters					
PNU Name	Passcode	For the passcode be active the "Screen lock" must be turned on					
PNU Format	8 bit unsigned						
PNU Note	ASCII alpha numeric character Byte 1	Range	48 (30 hex) 0 - 57 (39 hex) Max Value	Default	48 (30 hex) 0	Type	Read/Write

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	12867 (3243 hex)	Stops unauthorised screen access to read/ write parameters
PNU Name	Passcode	For the passcode be active the "Screen lock" must be turned on
PNU Format	8 bit unsigned	
PNU Note	ASCII alpha numeric character Byte 0	Range 48 (30 hex) 0 - 57 (39 hex) Max Value Default 48 (30 hex) 0 Type Read/Write

PNU Number	12928 (3280 hex)	The device Model number stored at the point of manufacture
PNU Name	Model Number	
PNU Format	16 bit unsigned	
PNU Note	Linear Scaling (1 = 1)	Range 0 (0 hex) 0 - 65535 (FFFF hex) Max Value Default Not Applicable Type Read Only

PNU Number	12992 (32C0 hex)	Stops unauthorised access to read/ write parameters
PNU Name	Screen Lock	
PNU Format	8 bit unsigned	
PNU Note	Binary value	Range 0 (0 hex) Off - 1 (1 hex) On Default 0 (0 hex) Off Type Read/Write

PNU Number	13120 (3340 hex)	Diagnostic parameter
PNU Name	Service Code	For Fairford use only
PNU Format		
PNU Note		Range - Default Type

PNU Number	13184 (3380 hex)	Software Version for the Main control PCB.
PNU Name	Software Version (PCB2)	Software version recorded in log file
PNU Format	32 bit unsigned	
PNU Note	Linear Scaling (1 = 1)	Range 0 (0 hex) 0 - 4294967295 (FFFFFFFF hex) Max Value Default Not Applicable Type Read Only

SWI-SGY-USB-V05504		Description
[SGY1051100 SGY2061600 SGY3023400]		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

PNU Number	13248 (33C0 hex)	Allows the date format to be changed
PNU Name	Date Format	dd/mm/yyyy or mm/dd/yyyy
PNU Format	8 bit unsigned	
PNU Note	Binary value	Range: 0 (0 hex) dd/mm/yyyy - 1 (1 hex) mm/dd/yyyy Default: 0 (0 hex) dd/mm/yyyy Type: Read/Write

PNU Number	13312 (3400 hex)	Selects °C or °F for displayed temperatures
PNU Name	Temperature Format	°C : All displayed temperatures are °C
PNU Format	8 bit unsigned	°F : All displayed temperatures are °F
PNU Note	Binary value	Range: 0 (0 hex) °C - 1 (1 hex) °F Default: 0 (0 hex) °C Type: Read/Write

PNU Number	13376 (3440 hex)	Selects the display language for the keypad
PNU Name	Language	Enter the required language from the displayed list
PNU Format	16 bit unsigned	
PNU Note	1=GBR,2=DEU,3=FRA,4=ITA,5=CHN, 6=TUR,7=POR,8=JPN,9=SRB,10=RUS	Range: 1 (1 hex) English - 10 (A hex) End of list Default: 1 (1 hex) English Type: Read/Write

PNU Number	14080 (3700 hex)	Allows the user to check the state of the modbus communication network. Red LED receive, Green LED Transmit.
PNU Name	Traffic LEDS	On : The Red and Green LEDS display the traffic on the Modbus communications network
PNU Format	8 bit unsigned	Off : The Red and Green LEDs display the Unit status information
PNU Note	Binary value	Range: 0 (0 hex) Off - 1 (1 hex) On Default: 0 (0 hex) Off Type: Read/Write

PNU Number	14208 (3780 hex)	Time for backlight on display
PNU Name	Backlight Timeout	After the period set the back light on the screen will turn off
PNU Format	16 bit unsigned	To reactivate touch screen anywhere. To disable set to 0
PNU Note	Linear Scaling (1 = 1 s)	Range: 0 (0 hex) 0s - 3600 (E10 hex) 3600s Default: 60 (3C hex) 60s Type: Read/Write

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	14720 (3980 hex)
PNU Name	Time
PNU Format	6 Bytes
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)

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 timehh:mm:ss	Type	Read/Write

PNU Number	15808 (3DC0 hex)
PNU Name	Timeout ms
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 1 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 (0 hex) 0ms	-	60000 (EA60 hex) 60000ms	Default	5000 (1388 hex) 5000ms	Type	Read/Write

PNU Number	16000 (3E80 hex)
PNU Name	Address
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 1)

Sets the Modbus station number

Range	1 (1 hex) 1	-	32 (20 hex) 32	Default	1 (1 hex) 1	Type	Read/Write

PNU Number	16064 (3EC0 hex)
PNU Name	Baud Rate
PNU Format	16 bit unsigned
PNU Note	0=9600, 1=19200, 2=38400, 3=57600, 4=115200

Sets the serial communications baud rate

The available baud rates are 9600, 19200, 38400, 57600, 115200

Range	0 (0 hex) 9600	-	4 (4 hex) 115200	Default	1 (1 hex) 19200	Type	Read/Write

PNU Number	16128 (3F00 hex)
PNU Name	Parity
PNU Format	16 bit unsigned
PNU Note	0=None, 1=Even, 2=Odd

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	0 (0 hex) None	-	2 (2 hex) Odd	Default	1 (1 hex) Even	Type	Read/Write

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	17920 (4600 hex)
PNU Name	Start/Stop
PNU Format	8 bit unsigned
PNU Note	Binary value

CONTROL COMMAND : Start / Stop

On : Starts the Unit
Off : Stops or Soft stops the Unit

To map to digital input refer to PNU10944-PNU10946

Range	0 (0 hex) (Soft) Stop - 1 (1 hex) Start	Default	0 (0 hex) (Soft) Stop	Type	Read/Write

PNU Number	18240 (4740 hex)
PNU Name	Freeze Ramp
PNU Format	8 bit unsigned
PNU Note	Binary value

CONTROL COMMAND : Freeze Ramp

On : The Soft Start Ramp is held and the Unit will take longer than the time set to start
Off : The Soft Start Ramp is not held and the Unit will start in the time set.

If set to On this parameter will hold the Start Ramp even if "Current Irms" is less than the "Current Limit Level"
To map to digital input refer to PNU10944-PNU10946

Range	0 (0 hex) Off - 1 (1 hex) On	Default	0 (0 hex) Off	Type	Read/Write

PNU Number	18368 (47C0 hex)
PNU Name	Reset
PNU Format	8 bit unsigned
PNU Note	Binary value

CONTROL COMMAND : Reset

On : The initial state required for a reset.
Off : The final state required for a reset.

To reset pulse high and then low
To map to digital input refer to PNU10944-PNU10946

Range	0 (0 hex) Off - 1 (1 hex) On	Default	0 (0 hex) Off	Type	Read/Write

PNU Number	18880 (49C0 hex)
PNU Name	External Trip
PNU Format	8 bit unsigned
PNU Note	Binary value

CONTROL COMMAND : External Trip

On : If "External Trip" is enabled the Unit trips
Off : The Unit will not trip

Ensure start signal is low before reset.
To map to digital input refer to PNU10944-PNU10946

Range	0 (0 hex) Off - 1 (1 hex) On	Default	0 (0 hex) Off	Type	Read/Write

PNU Number	19200 (4B00 hex)
PNU Name	Application:
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 1)

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	0 (0 hex) Default - 65535 (FFFF hex) End of list	Default	0 (0 hex) Default	Type	Read/Write

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	19840 (4D80 hex)	Automatically controls the starting torque
PNU Name	Automatic Pedestal	On : The initial torque is increased until the motor starts to rotate at a moderate speed.
PNU Format	8 bit unsigned	Off: The initial torque is defined by the "Start Pedestal"

PNU Note	Binary value	Range	0 (0 hex) Off - 1 (1 hex) On	Default	0 (0 hex) Off	Type	Read/Write

PNU Number	19904 (4DC0 hex)	Automatically controls the time taken for the motor to start
PNU Name	Automatic End Start (2)	On : The ramp time is shortened if the motor current falls below the current limit level before the end of the "Start Time".
PNU Format	8 bit unsigned	Off: The ramp time depends on the "Start Time" and "Current Limit"

PNU Note	Binary value	Range	0 (0 hex) Off - 1 (1 hex) On	Default	0 (0 hex) Off	Type	Read/Write

PNU Number	19968 (4E00 hex)	Automatically controls the time taken for the motor to start
PNU Name	Automatic End Start (1)	On : The ramp time is shortened if the motor is at speed before the end of the "Start Time"
PNU Format	8 bit unsigned	Off: The ramp time depends on the "Start Time" and "Current Limit"

PNU Note	Binary value	Range	0 (0 hex) Off - 1 (1 hex) On	Default	0 (0 hex) Off	Type	Read/Write

PNU Number	20032 (4E40 hex)	Automatically controls the time taken for the motor to start
PNU Name	Automatic End Start (3)	On : The ramp time is shortened if torque fluctuations occur before the end of the "Start Time"
PNU Format	8 bit unsigned	Off: The ramp time depends on the "Start Time" and "Current Limit"

PNU Note	Binary value	Range	0 (0 hex) Off - 1 (1 hex) On	Default	0 (0 hex) Off	Type	Read/Write

PNU Number	20160 (4EC0 hex)	Automatically controls the soft stop to suit the application. This feature is particularly useful with pumping applications
PNU Name	Automatic Stop	On : If the motor is lightly loaded it decelerates rapidly to the point where the soft stop becomes useful.
PNU Format	8 bit unsigned	Off : The deceleration to the point where the soft stop becomes useful will be slower.

PNU Note	Binary value	Range	0 (0 hex) Off - 1 (1 hex) On	Default	0 (0 hex) Off	Type	Read/Write

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	20224 (4F00 hex)	Automatically controls the soft stop to eliminate oscillations that can occur towards the end of the ramp
PNU Name	Auto Smooth Stop	On : The soft stop is adjusted when oscillations are detected. Refer to "Auto smoothing Level"
PNU Format	8 bit unsigned	Off : The soft stop is unadjusted and torque fluctuations may cause instability. This can often occur in pumping applications
PNU Note	Binary value	Range: 0 (0 hex) Off - 1 (1 hex) On Default: 0 (0 hex) Off Type: Read/Write

PNU Number	20352 (4F80 hex)	Automatically controls the torque applied to the motor during the soft start.
PNU Name	Automatic Ramp	On : The torque is adjusted to suit the load.
PNU Format	8 bit unsigned	Off: The ramp time depends on the "Start Time" and "Current Limit"
PNU Note	Binary value	Range: 0 (0 hex) Off - 1 (1 hex) On Default: 0 (0 hex) Off Type: Read/Write

PNU Number	20416 (4FC0 hex)	Automatically controls the "Stop Time"
PNU Name	Automatic End Stop	On : The ramp time is shortened if the motor reaches a very low speed before the end of the "Stop Time"
PNU Format	8 bit unsigned	Off: The ramp time " depends on the "Stop Time" and "Current Limit"
PNU Note	Binary value	Range: 0 (0 hex) Off - 1 (1 hex) On Default: 0 (0 hex) Off Type: Read/Write

PNU Number	20480 (5000 hex)	Automatically controls the maximum iERS saving level.
PNU Name	Automatic Impact Load	On : The maximum iERS saving level ("BackStop") is reset to maximum during each load cycle.
PNU Format	8 bit unsigned	Off : The saving potential may be reduced on applications with heavy load cycles , such as injection moulding machines.
PNU Note	Binary value	Range: 0 (0 hex) Off - 1 (1 hex) On Default: 0 (0 hex) Off Type: Read/Write

PNU Number	20608 (5080 hex)	Adjusts the response of the "Automatic Stop"
PNU Name	Automatic Stop Profile	Increase if the motor speed doesn't drop quickly enough.
PNU Format	16 bit unsigned	When the value is set to zero the "Automatic Stop" is effectively disabled
PNU Note	Linear Scaling (1 = 0.006104 %)	Range: 0 (0 hex) 0% - 16384 (4000 hex) 100% Default: 8192 (2000 hex) 50% Type: Read/Write

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	20672 (50C0 hex)
PNU Name	Auto Smoothing Level
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 0.006104 %)

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	1638 (666 hex) 10% - 16384 (4000 hex) 100%	Default	8192 (2000 hex) 50%	Type	Read/Write

PNU Number	21120 (5280 hex)
PNU Name	iERS
PNU Format	8 bit unsigned
PNU Note	Binary value

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	0 (0 hex) Off - 1 (1 hex) On	Default	1 (1 hex) On	Type	Read/Write

PNU Number	21184 (52C0 hex)
PNU Name	iERS Rate
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 0.006104 %)

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 (0 hex) 0% - 16384 (4000 hex) 100%	Default	4096 (1000 hex) 25%	Type	Read/Write

PNU Number	21320 (5348 hex)
PNU Name	Start Saving Level
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 0.006104 %)

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	8192 (2000 hex) 50% I-motor - 13107 (3333 hex) 80% I-motor	Default	13107 (3333 hex) 80% I-motor	Type	Read Only

PNU Number	21376 (5380 hex)
PNU Name	iERS Level
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 0.006104 %)

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 (0 hex) 0% - 16384 (4000 hex) 100%	Default	16384 (4000 hex) 100%	Type	Read/Write

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	21760 (5500 hex)
PNU Name	Ref PF Degrees
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 1° of mains cycle) Time(ms)=(Value/PNU32000)*(25/9)

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 (0 hex) 0Degrees - 90 (5A hex) 90Degrees	Default	0 (0 hex) 0Degrees	Type	Read Only

PNU Number	21824 (5540 hex)
PNU Name	Pres PF Degrees
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 1° of mains cycle) Time(ms)=(Value/PNU32000)*(25/9)

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 (0 hex) 0Degrees - 90 (5A hex) 90Degrees	Default	0 (0 hex) 0Degrees	Type	Read Only

PNU Number	22400 (5780 hex)
PNU Name	Delay Angle
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 1° of mains cycle) Time(ms)=(Value/PNU32000)*(25/9)

Internal firing delay angle in Degrees

Displayed for diagnostic purposes

Range	0 (0 hex) 0Degrees - 60 (3C hex) 60Degrees	Default	0 (0 hex) 0Degrees	Type	Read Only

PNU Number	22464 (57C0 hex)
PNU Name	Delay Max
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 1° of mains cycle) Time(ms)=(Value/PNU32000)*(25/9)

The maximum possible delay for iERS saving

Displayed for diagnostic purposes

Range	0 (0 hex) 0Degrees - 55 (37 hex) 55Degrees	Default	0 (0 hex) 0Degrees	Type	Read Only

PNU Number	23040 (5A00 hex)
PNU Name	BackStop
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 1° of mains cycle) Time(ms)=(Value/PNU32000)*(25/9)

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 (0 hex) 0Degrees - 55 (37 hex) 55Degrees	Default	0 (0 hex) 0Degrees	Type	Read Only

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	25600 (6400 hex)	Unit Class20 / Class30 Current Rating					
PNU Name	i-rated						
PNU Format	32 bit unsigned						
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)	Range	17000 (4268 hex) 17A - 2000000 (1E8480 hex) 2000A	Default	17000 (4268 hex) 17A	Type	Read Only

PNU Number	25664 (6440 hex)	The trip class is a numeric value that correlates the trip time with overload level. Select Trip class according to application requirements					
PNU Name	Trip Class	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.					
PNU Format	16 bit unsigned	When "Class 20" or "Class30" are selected the Unit current rating (i-Unit) will be reduced to a lower value (i-rated).					
PNU Note	10=class10, 20=class20, 30=class30	Range	10 (A hex) 10 - 30 (1E hex) 30	Default	10 (A hex) 10	Type	Read/Write

PNU Number	25728 (6480 hex)	This should be set to the Full Load Current shown on the motor plate					
PNU Name	Motor Current	The overload works with multiples of the set "Motor Current" (i-motor)					
PNU Format	32 bit unsigned	Also referred to as Motor FLA					
PNU Note	Linear Scaling (1 = 1mA)	Range	(0.5 x PNU25600) 50% I-rated - (1 x PNU25600) 100% I-rated	Default	(1 x PNU25600) 100% I-rated	Type	Read/Write

PNU Number	25792 (64C0 hex)	Unit Class10 Current Rating					
PNU Name	i-Synergy						
PNU Format	32 bit unsigned						
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)	Range	17000 (4268 hex) 17A - 2000000 (1E8480 hex) 2000A	Default	17000 (4268 hex) 17A	Type	Read Only

PNU Number	26304 (66C0 hex)	The current in Amps that will cause a trip					
PNU Name	Low Current Trip Level	A trip will occur if the motor current is less than the "Trip Level" for the "Trip Time"					
PNU Format	16 bit unsigned						
PNU Note	Linear Scaling (1 = 1mA)	Range	0.25 x PNU25728) 25% I-moto - (1 x PNU25728) 100% I-motor	Default	(0.25 x PNU25728) 25% I-motor	Type	Read/Write

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	26368 (6700 hex)	The trip time for the Low current trip
PNU Name	Low Current Trip Time	A trip will occur if the motor current is less than the "Trip Level" for the "Trip Time"
PNU Format	16 bit unsigned	
PNU Note	Linear Scaling (1 = 1 ms)	Range: 100 (64 hex) 100ms - 9000 (2328 hex) 9000ms Default: 100 (64 hex) 100ms Type: Read/Write

PNU Number	26880 (6900 hex)	The current in Amps at which the soft Start ramp is held.
PNU Name	Start Current Limit Level	Normally set to 350% of motor FLC. Increase if motor fails to accelerate at required rate
PNU Format	16 bit unsigned	The "Current Limit Level" will effect actual time to start, if set too low the motor may not accelerate to full speed.
PNU Note	Linear Scaling (1 = 1mA)	Range: (0.5 x PNU25728) 50% I-motor - (4.5 x PNU25792) 450% I-synergy Default: (3.5 x PNU25728) 350% I-motor Type: Read/Write

PNU Number	26944 (6940 hex)	The maximum time allowed for the current limit.
PNU Name	Start Current Limit Time	If the current limit is still active at the end of this period the Unit will either 'Trip' or 'continue'
PNU Format	16 bit unsigned	
PNU Note	Linear Scaling (1 = 1 s)	Range: 1 (1 hex) 1s - 600 (258 hex) 600s Default: 30 (1E hex) 30s Type: Read/Write

PNU Number	27584 (6BC0 hex)	The current in Amps that will cause a "Shearpin Trip"
PNU Name	Shearpin Trip Current	A trip will occur if the motor current is greater than the "Trip Level" for the "Trip Time"
PNU Format	16 bit unsigned	
PNU Note	Linear Scaling (1 = 1mA)	Range: (1 x PNU25728) 100% I-motor - (4.5 x PNU25792) 450% I-synergy Default: 4.5 x PNU25792) 450% I-synergy Type: Read/Write

PNU Number	27648 (6C00 hex)	The trip time for the Shearpin trip
PNU Name	Shearpin Trip Time	A trip will occur if the motor current is greater than the "Trip Level" for the "Trip Time"
PNU Format	16 bit unsigned	
PNU Note	Linear Scaling (1 = 1 ms)	Range: 100 (64 hex) 100ms - 9000 (2328 hex) 9000ms Default: 100 (64 hex) 100ms Type: Read/Write

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	28224 (6E40 hex)	Determines the level in Amps at which the overload will start.				
PNU Name	Overload Level	Normally set to 115% of the set motor current (i-motor)				
PNU Format	16 bit unsigned	Reduce to speed up trip response				
PNU Note	Linear Scaling (1 = 1mA)	Range (0.5 x PNU25728) 50% I-motor - (4.5 x PNU25792) 125% I-motor		Default	(1.15 x PNU25728) 115% I-motor	Type	Read/Write

PNU Number	28800 (7080 hex)	The current in Amps at which the soft stop ramp is not allowed to go above.				
PNU Name	Stop Current Limit Level	Normally set to 350% motor FLC. Increase if motor decelerates too rapidly.				
PNU Format	16 bit unsigned	The current limit level will effect actual time to stop the motor.				
PNU Note	Linear Scaling (1 = 1mA)	Range (1 x PNU25728) 100% I-motor - (4.5 x PNU25792) 450% I-synergy		Default	(3.5 x PNU25728) 350% I-motor	Type	Read/Write

PNU Number	28864 (70C0 hex)	The maximum time allowed for the current limit.				
PNU Name	Stop Current Limit Time	If the current limit is still active at the end of this period the Unit will either trip or continue				
PNU Format	16 bit unsigned					
PNU Note	Linear Scaling (1 = 1 s)	Range	1 (1 hex) 1s - 300 (12C hex) 300s	Default	10 (A hex) 10s	Type	Read/Write

PNU Number	32000 (7D00 hex)	The frequency of the 3-phase supply				
PNU Name	Line Frequency					
PNU Format	16 bit unsigned					
PNU Note	Linear Scaling (1 = mHz) Freq(Hz) = (Value / 1000)	Range	45000 (AFC8 hex) 45Hz - 65000 (FDE8 hex) 65Hz	Default	Not Applicable -Hz	Type	Read Only

PNU Number	32064 (7D40 hex)	Indicates the phase sequence of the incoming supply.				
PNU Name	Phase Rotation	RYB = L1, L2, L3				
PNU Format	16 bit unsigned	RBY = L1, L3, L2				
PNU Note	Binary value	Range	0 (0 hex) L1-L2-L3 - 1 (1 hex) L1-L3-L2	Default	0 (0 hex) L1-L2-L3	Type	Read Only

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	32896 (8080 hex)
PNU Name	Current Irms
PNU Format	32 bit unsigned
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)

The RMS motor current

This is the maximum of the 3 phases.
This value is used for the overload and power calculations

Range	0 (0 hex) 0A	-	10000000 (989680 hex) 10000A	Default	0 (0 hex) 0A	Type	Read Only

PNU Number	32960 (80C0 hex)
PNU Name	Vrms (Approx)
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 1 V)

The RMS 3-phase supply voltage.

This is the average of the 3 phases.
This value is used for power calculations

This value is derived internally. If a higher level of accuracy is required a "Fixed Voltage" value can be used.

Range	0 (0 hex) 0V	-	500 (1F4 hex) 500V	Default	0 (0 hex) 0V	Type	Read Only

PNU Number	33024 (8100 hex)
PNU Name	True Power Factor
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 0.001)

The True Power Factor

The True Power Factor = (Displacement Power Factor x Distortion Power Factor)

Range	0 (0 hex) 0	-	1000 (3E8 hex) 1	Default	0 (0 hex) 0	Type	Read Only

PNU Number	33408 (8280 hex)
PNU Name	Overload
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 0.006104 %)

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 (0 hex) 0%	-	16384 (4000 hex) 100%	Default	0 (0 hex) 0%	Type	Read Only

PNU Number	33536 (8300 hex)
PNU Name	I1
PNU Format	32 bit unsigned
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)

The RMS current on phase L1

Range	0 (0 hex) 0A	-	10000000 (989680 hex) 10000A	Default	0 (0 hex) 0A	Type	Read Only

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	33538 (8302 hex)
PNU Name	I2
PNU Format	32 bit unsigned
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)

The RMS current on phase L2

Range	0 (0 hex) 0A - 10000000 (989680 hex) 10000A	Default	0 (0 hex) 0A	Type	Read Only

PNU Number	33540 (8304 hex)
PNU Name	I3
PNU Format	32 bit unsigned
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)

The RMS current on phase L3

Range	0 (0 hex) 0A - 10000000 (989680 hex) 10000A	Default	0 (0 hex) 0A	Type	Read Only

PNU Number	34688 (8780 hex)
PNU Name	True Power P
PNU Format	32 bit unsigned
PNU Note	Linear Scaling (1 = 1W) True Power (KW) = (Value / 1000)

Total true power

This is an addition of the 3 phases

Range	0 (0 hex) 0kW - 10000000 (989680 hex) 10000kW	Default	0 (0 hex) 0kW	Type	Read Only

PNU Number	34816 (8800 hex)
PNU Name	Apparent Power S
PNU Format	32 bit unsigned
PNU Note	Linear Scaling (1 = 1VA) Apparent Power (kVA) = (Value/1000)

Total Apparent Power

This is an addition of the 3 phases

Range	0 (0 hex) 0kVA - 10000000 (989680 hex) 10000kVA	Default	0 (0 hex) 0kVA	Type	Read Only

PNU Number	34944 (8880 hex)
PNU Name	Reactive Power Q
PNU Format	32 bit unsigned
PNU Note	Linear Scaling (1 = 1Var) Reactive Power (KVar) = (Value / 1000)

Total Reactive power

This is an addition of the 3 phases

Range	0 (0 hex) 0kvar - 10000000 (989680 hex) 10000kvar	Default	0 (0 hex) 0kvar	Type	Read Only

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	35008 (88C0 hex)	Indicates the level of potential saving	
PNU Name	iERS Saving Level	100% indicates that Unit is saving at its maximum level	
PNU Format	16 bit unsigned		
PNU Note	Linear Scaling (1 = 0.006104 %)	Range 0 (0 hex) 0% - 16384 (4000 hex) 100% Default 0 (0 hex) 0% Type Read Only

PNU Number	35200 (8980 hex)	User settable voltage level for power calculations
PNU Name	Fixed Voltage	If required can be used to improve accuracy of power calculations
PNU Format	16 bit unsigned	
PNU Note	Linear Scaling (1 = 1 V)	Range 100 (64 hex) 100V - 500 (1F4 hex) 500V Default 500 (1F4 hex) 100V Type Read/Write

PNU Number	35264 (89C0 hex)	Selects the source for the voltage value used in the power calculations.
PNU Name	Fixed Voltage	on: KW, KVar and KVA are calculated using the "Fixed Voltage"
PNU Format	8 bit unsigned	off: KW, KVar and KVA are calculated using the internally measured voltage.
PNU Note	Binary value	Range 0 (0 hex) Off - 1 (1 hex) On Default 0 (0 hex) Off Type Read/Write

PNU Number	35840 (8C00 hex)	The total number of successful starts
PNU Name	Number of Starts	
PNU Format	32 bit unsigned	
PNU Note	Linear Scaling (1 = 1)	Range 0 (0 hex) 0 - 4294967295 (FFFFFFFF hex) 4294836221 Default 0 (0 hex) 0 Type Read Only

PNU Number	36544 (8EC0 hex)	The temperature of the internal Unit heatsink.
PNU Name	HeatSink Temp	The Unit will trip when the heatsink temperature exceeds 80°C.
PNU Format	16 bit (Highbyte=b11-b8, LowByte=b7-b0) Ta >= 0 b12=0 Ta < 0 b12=1	The internal cooling fans will turn on if this temperature exceeds 40°C
PNU Note	bit12=0 [HighByte*16 + LowByte/16] bit12=1 256-[HighByte*16 + LowByte/16]	Range 7872 (1EC0 hex) -20°C - 1280 (500 hex) 80°C Default Not Applicable °C Type Read Only

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	37184 (9140 hex)
PNU Name	Ready
PNU Format	8 bit unsigned
PNU Note	Binary value

STATUS INDICATION : Ready

On : Indicates that the Unit is healthy and ready for a start. Remains on when Running
Off : The Unit has not powered up successfully or failed to reset from a trip

To map to digital output refer to PNU11584-PNU11587

Range	0 (0 hex) Off - 1 (1 hex) On	Default	0 (0 hex) Off	Type	Read Only

PNU Number	37248 (9180 hex)
PNU Name	Enabled
PNU Format	8 bit unsigned
PNU Note	Binary value

STATUS INDICATION : Enabled

On : Indicates that the Unit is enabled and the motor is being controlled. Remains on when Running
Off : The Unit has detected a fault and tripped

To map to digital output refer to PNU11584-PNU11587

Range	0 (0 hex) Off - 1 (1 hex) On	Default	0 (0 hex) Off	Type	Read Only

PNU Number	37312 (91C0 hex)
PNU Name	Error
PNU Format	8 bit unsigned
PNU Note	Binary value

STATUS INDICATION : Error

On : Indicates that the Unit has detected a fault and has shut down.
Off : The Unit is fault free

The fault must be cleared before a reset
To map to digital output refer to PNU11584-PNU11587

Range	0 (0 hex) Off - 1 (1 hex) On	Default	0 (0 hex) Off	Type	Read Only

PNU Number	37632 (9300 hex)
PNU Name	Running
PNU Format	8 bit unsigned
PNU Note	Binary value

STATUS INDICATION : Running

On : Indicates that the unit has been given a run command and the motor is being controlled.
Off : The Unit has detected a fault and tripped

To map to digital output refer to PNU11584-PNU11587

Range	0 (0 hex) Off - 1 (1 hex) On	Default	0 (0 hex) Off	Type	Read Only

PNU Number	37760 (9380 hex)
PNU Name	End Of Start
PNU Format	8 bit unsigned
PNU Note	Binary value

STATUS INDICATION : End Of Start

On : Indicates that the Soft Start ramp has been completed.
Off : The Unit is disabled or ramping down.

To map to digital output refer to PNU11584-PNU11587

Range	0 (0 hex) Off - 1 (1 hex) On	Default	0 (0 hex) Off	Type	Read Only

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	37824 (93C0 hex)
PNU Name	Current Limit
PNU Format	8 bit unsigned
PNU Note	Binary value

STATUS INDICATION : Current Limit

On : The ramp is being held because "Current Irms" is greater or equal to " Current Limit Level "
Off : The ramp is not being held because " Current Irms " is less than " Current Limit Level "

To map to digital output refer to PNU11584-PNU11588

Range	0 (0 hex) Off - 1 (1 hex) On	Default	0 (0 hex) Off	Type	Read Only

PNU Number	38080 (94C0 hex)
PNU Name	iERS Active
PNU Format	8 bit unsigned
PNU Note	Binary value

STATUS INDICATION : iERS Active

On : Indicates that the Unit is operating in the iERS energy saving Mode.
Off : The iERS saving mode has been disabled either internally or via ModbusPNU 21120

To map to digital output refer to PNU11584-PNU11587

Range	0 (0 hex) 0 - 1 (1 hex) 1	Default	0 (0 hex) 0	Type	Read Only

PNU Number	38400 (9600 hex)
PNU Name	Last Peak Current
PNU Format	32 bit unsigned
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)

Displays the peak current of the last successful start.

Range	0 (0 hex) 0A - 10000000 (989680 hex) 10000A	Default	0 (0 hex) 0A	Type	Read Only

PNU Number	38402 (9602 hex)
PNU Name	Last peak start current -1
PNU Format	32 bit unsigned
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)

Displays the peak current of the last successful start -1

Range	0 (0 hex) 0A - 10000000 (989680 hex) 10000A	Default	0 (0 hex) 0A	Type	Read Only

PNU Number	38404 (9604 hex)
PNU Name	Last peak start current -2
PNU Format	32 bit unsigned
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)

Displays the peak current of the last successful start -2

Range	0 (0 hex) 0A - 10000000 (989680 hex) 10000A	Default	0 (0 hex) 0A	Type	Read Only

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	38406 (9606 hex)	Displays the peak current of the last successful start -3
PNU Name	Last peak start current -3	
PNU Format	32 bit unsigned	
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)	Range: 0 (0 hex) 0A - 10000000 (989680 hex) 10000A Default: 0 (0 hex) 0A Type: Read Only

PNU Number	38408 (9608 hex)	Displays the peak current of the last successful start -4
PNU Name	Last peak start current -4	
PNU Format	32 bit unsigned	
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)	Range: 0 (0 hex) 0A - 10000000 (989680 hex) 10000A Default: 0 (0 hex) 0A Type: Read Only

PNU Number	38410 (960A hex)	Displays the peak current of the last successful start -5
PNU Name	Last peak start current -5	
PNU Format	32 bit unsigned	
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)	Range: 0 (0 hex) 0A - 10000000 (989680 hex) 10000A Default: 0 (0 hex) 0A Type: Read Only

PNU Number	38412 (960C hex)	Displays the peak current of the last successful start -6
PNU Name	Last peak start current -6	
PNU Format	32 bit unsigned	
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)	Range: 0 (0 hex) 0A - 10000000 (989680 hex) 10000A Default: 0 (0 hex) 0A Type: Read Only

PNU Number	38414 (960E hex)	Displays the peak current of the last successful start -7
PNU Name	Last peak start current -7	
PNU Format	32 bit unsigned	
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)	Range: 0 (0 hex) 0A - 10000000 (989680 hex) 10000A Default: 0 (0 hex) 0A Type: Read Only

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	38416 (9610 hex)
PNU Name	Last peak start current -8
PNU Format	32 bit unsigned
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)

Displays the peak current of the last successful start -8

Range	0 (0 hex) 0A - 10000000 (989680 hex) 10000A	Default	0 (0 hex) 0A	Type	Read Only

PNU Number	38418 (9612 hex)
PNU Name	Last peak start current -9
PNU Format	32 bit unsigned
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)

Displays the peak current of the last successful start -9

Range	0 (0 hex) 0A - 10000000 (989680 hex) 10000A	Default	0 (0 hex) 0A	Type	Read Only

PNU Number	38464 (9640 hex)
PNU Name	Last peak start current / Last Temperature / Last Overload (Time)
PNU Format	6 Bytes
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)

Displays the event time

Range	-hh:mm:ss - -hh:mm:ss	Default	GMT timehh:mm:ss	Type	Read/Write

PNU Number	38467 (9643 hex)
PNU Name	Last peak start current / Last Temperature / Last Overload -1 (Time)
PNU Format	6 Bytes
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)

Displays the event time

Range	-hh:mm:ss - -hh:mm:ss	Default	GMT timehh:mm:ss	Type	Read/Write

PNU Number	38470 (9646 hex)
PNU Name	Last peak start current / Last Temperature / Last Overload -2 (Time)
PNU Format	6 Bytes
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)

Displays the event time

Range	-hh:mm:ss - -hh:mm:ss	Default	GMT timehh:mm:ss	Type	Read/Write

SWI-SGY-USB-V05504		Description
[SGY1051100 SGY2061600 SGY3023400]		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

PNU Number	38473 (9649 hex)		Displays the event time
PNU Name	Last peak start current / Last Temperature / Last Overload -3 (Time)		
PNU Format	6 Bytes		
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)		Range -hh:mm:ss - -hh:mm:ss Default GMT timehh:mm:ss Type Read/Write

PNU Number	38476 (964C hex)		Displays the event time
PNU Name	Last peak start current / Last Temperature / Last Overload -4 (Time)		
PNU Format	6 Bytes		
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)		Range -hh:mm:ss - -hh:mm:ss Default GMT timehh:mm:ss Type Read/Write

PNU Number	38479 (964F hex)		Displays the event time
PNU Name	Last peak start current / Last Temperature / Last Overload -5 (Time)		
PNU Format	6 Bytes		
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)		Range -hh:mm:ss - -hh:mm:ss Default GMT timehh:mm:ss Type Read/Write

PNU Number	38482 (9652 hex)		Displays the event time
PNU Name	Last peak start current / Last Temperature / Last Overload -6 (Time)		
PNU Format	6 Bytes		
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)		Range -hh:mm:ss - -hh:mm:ss Default GMT timehh:mm:ss Type Read/Write

PNU Number	38485 (9655 hex)		Displays the event time
PNU Name	Last peak start current / Last Temperature / Last Overload -7 (Time)		
PNU Format	6 Bytes		
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)		Range -hh:mm:ss - -hh:mm:ss Default GMT timehh:mm:ss Type Read/Write

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	38488 (9658 hex)							
PNU Name	Last peak start current / Last Temperature / Last Overload -8 (Time)	Displays the event time						
PNU Format	6 Bytes							
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range	-hh:mm:ss - -hh:mm:ss	Default	GMT timehh:mm:ss	Type	Read/Write

PNU Number	38491 (965B hex)							
PNU Name	Last peak start current / Last Temperature / Last Overload -9 (Time)	Displays the event time						
PNU Format	6 Bytes							
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range	-hh:mm:ss - -hh:mm:ss	Default	GMT timehh:mm:ss	Type	Read/Write

PNU Number	39040 (9880 hex)							
PNU Name	Last peak stop current	Displays the peak current of the last successful stop						
PNU Format	32 bit unsigned							
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)	Range	0 (0 hex) 0A - 10000000 (989680 hex) 10000A	Default	0 (0 hex) 0A	Type	Read Only

PNU Number	39042 (9882 hex)							
PNU Name	Last peak stop current -1	Displays the peak current of the last successful stop -1						
PNU Format	32 bit unsigned							
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)	Range	0 (0 hex) 0A - 10000000 (989680 hex) 10000A	Default	0 (0 hex) 0A	Type	Read Only

PNU Number	39044 (9884 hex)							
PNU Name	Last peak stop current -2	Displays the peak current of the last successful stop -2						
PNU Format	32 bit unsigned							
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)	Range	0 (0 hex) 0A - 10000000 (989680 hex) 10000A	Default	0 (0 hex) 0A	Type	Read Only

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	39046 (9886 hex)
PNU Name	Last peak stop current -3
PNU Format	32 bit unsigned
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)

Displays the peak current of the last successful stop -3

Range	0 (0 hex) 0A	-	10000000 (989680 hex) 10000A	Default	0 (0 hex) 0A	Type	Read Only

PNU Number	39048 (9888 hex)
PNU Name	Last peak stop current -4
PNU Format	32 bit unsigned
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)

Displays the peak current of the last successful stop -4

Range	0 (0 hex) 0A	-	10000000 (989680 hex) 10000A	Default	0 (0 hex) 0A	Type	Read Only

PNU Number	39050 (988A hex)
PNU Name	Last peak stop current -5
PNU Format	32 bit unsigned
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)

Displays the peak current of the last successful stop -5

Range	0 (0 hex) 0A	-	10000000 (989680 hex) 10000A	Default	0 (0 hex) 0A	Type	Read Only

PNU Number	39052 (988C hex)
PNU Name	Last peak stop current -6
PNU Format	32 bit unsigned
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)

Displays the peak current of the last successful stop -6

Range	0 (0 hex) 0A	-	10000000 (989680 hex) 10000A	Default	0 (0 hex) 0A	Type	Read Only

PNU Number	39054 (988E hex)
PNU Name	Last peak stop current -7
PNU Format	32 bit unsigned
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)

Displays the peak current of the last successful stop -7

Range	0 (0 hex) 0A	-	10000000 (989680 hex) 10000A	Default	0 (0 hex) 0A	Type	Read Only

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	39056 (9890 hex)	Displays the peak current of the last successful stop -8
PNU Name	Last peak stop current -8	
PNU Format	32 bit unsigned	
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)	Range: 0 (0 hex) 0A - 10000000 (989680 hex) 10000A Default: 0 (0 hex) 0A Type: Read Only

PNU Number	39058 (9892 hex)	Displays the peak current of the last successful stop -9
PNU Name	Last peak stop current -9	
PNU Format	32 bit unsigned	
PNU Note	Linear Scaling (1 = 1mA) Current (A) = (Value / 1000)	Range: 0 (0 hex) 0A - 10000000 (989680 hex) 10000A Default: 0 (0 hex) 0A Type: Read Only

PNU Number	39104 (98C0 hex)	Displays the event time
PNU Name	Last peak stop current (Time)	
PNU Format	6 Bytes	
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range: -hh:mm:ss - -hh:mm:ss Default: GMT timehh:mm:ss Type: Read/Write

PNU Number	39107 (98C3 hex)	Displays the event time
PNU Name	Last peak stop current -1 (Time)	
PNU Format	6 Bytes	
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range: -hh:mm:ss - -hh:mm:ss Default: GMT timehh:mm:ss Type: Read/Write

PNU Number	39110 (98C6 hex)	Displays the event time
PNU Name	Last peak stop current -2 (Time)	
PNU Format	6 Bytes	
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range: -hh:mm:ss - -hh:mm:ss Default: GMT timehh:mm:ss Type: Read/Write

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	39113 (98C9 hex)	Displays the event time						
PNU Name	Last peak stop current -3 (Time)							
PNU Format	6 Bytes							
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range	-hh:mm:ss - -hh:mm:ss	Default	GMT timehh:mm:ss	Type	Read/Write

PNU Number	39116 (98CC hex)	Displays the event time						
PNU Name	Last peak stop current -4 (Time)							
PNU Format	6 Bytes							
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range	-hh:mm:ss - -hh:mm:ss	Default	GMT timehh:mm:ss	Type	Read/Write

PNU Number	39119 (98CF hex)	Displays the event time						
PNU Name	Last peak stop current -5 (Time)							
PNU Format	6 Bytes							
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range	-hh:mm:ss - -hh:mm:ss	Default	GMT timehh:mm:ss	Type	Read/Write

PNU Number	39122 (98D2 hex)	Displays the event time						
PNU Name	Last peak stop current -6 (Time)							
PNU Format	6 Bytes							
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range	-hh:mm:ss - -hh:mm:ss	Default	GMT timehh:mm:ss	Type	Read/Write

PNU Number	39125 (98D5 hex)	Displays the event time						
PNU Name	Last peak stop current -7 (Time)							
PNU Format	6 Bytes							
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range	-hh:mm:ss - -hh:mm:ss	Default	GMT timehh:mm:ss	Type	Read/Write

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	39128 (98D8 hex)	Displays the event time
PNU Name	Last peak stop current -8 (Time)	
PNU Format	6 Bytes	
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range: -hh:mm:ss - -hh:mm:ss Default: GMT timehh:mm:ss Type: Read/Write

PNU Number	39131 (98DB hex)	Displays the event time
PNU Name	Last peak stop current -9 (Time)	
PNU Format	6 Bytes	
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range: -hh:mm:ss - -hh:mm:ss Default: GMT timehh:mm:ss Type: Read/Write

PNU Number	39680 (9B00 hex)	Displays the heatsink temperature at the end of the last successful start
PNU Name	Last temperature	
PNU Format	16 bit (Highbyte=b11-b8, LowByte=b7-b0) Ta >= 0 b12=0 Ta < 0 b12=1	
PNU Note	bit12=0 [HighByte*16 + LowByte/16] bit12=1 256-[HighByte*16 + LowByte/16]	Range: 7872 (1EC0 hex) -20°C - 1280 (500 hex) 80°C Default: Not Applicable °C Type: Read Only

PNU Number	39681 (9B01 hex)	Displays the heatsink temperature at the end of the last successful start -1
PNU Name	Last temperature -1	
PNU Format	16 bit (Highbyte=b11-b8, LowByte=b7-b0) Ta >= 0 b12=0 Ta < 0 b12=1	
PNU Note	bit12=0 [HighByte*16 + LowByte/16] bit12=1 256-[HighByte*16 + LowByte/16]	Range: 7872 (1EC0 hex) -20°C - 1280 (500 hex) 80°C Default: Not Applicable °C Type: Read Only

PNU Number	39682 (9B02 hex)	Displays the heatsink temperature at the end of the last successful start -2
PNU Name	Last temperature -2	
PNU Format	16 bit (Highbyte=b11-b8, LowByte=b7-b0) Ta >= 0 b12=0 Ta < 0 b12=1	
PNU Note	bit12=0 [HighByte*16 + LowByte/16] bit12=1 256-[HighByte*16 + LowByte/16]	Range: 7872 (1EC0 hex) -20°C - 1280 (500 hex) 80°C Default: Not Applicable °C Type: Read Only

SWI-SGY-USB-V05504		Description
[SGY1051100 SGY2061600 SGY3023400]		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

		Displays the heatsink temperature at the end of the last successful start-3
PNU Number	39683 (9B03 hex)	
PNU Name	Last temperature -3	
PNU Format	16 bit (Highbyte=b11-b8, LowByte=b7-b0) Ta >= 0 b12=0 Ta < 0 b12=1	
PNU Note	bit12=0 [HighByte*16 + LowByte/16] bit12=1 256-[HighByte*16 + LowByte/16]	Range 7872 (1EC0 hex) -20°C - 1280 (500 hex) 80°C Default Not Applicable °C Type Read Only

		Displays the heatsink temperature at the end of the last successful start-4
PNU Number	39684 (9B04 hex)	
PNU Name	Last temperature -4	
PNU Format	16 bit (Highbyte=b11-b8, LowByte=b7-b0) Ta >= 0 b12=0 Ta < 0 b12=1	
PNU Note	bit12=0 [HighByte*16 + LowByte/16] bit12=1 256-[HighByte*16 + LowByte/16]	Range 7872 (1EC0 hex) -20°C - 1280 (500 hex) 80°C Default Not Applicable °C Type Read Only

		Displays the heatsink temperature at the end of the last successful start-5
PNU Number	39685 (9B05 hex)	
PNU Name	Last temperature -5	
PNU Format	16 bit (Highbyte=b11-b8, LowByte=b7-b0) Ta >= 0 b12=0 Ta < 0 b12=1	
PNU Note	bit12=0 [HighByte*16 + LowByte/16] bit12=1 256-[HighByte*16 + LowByte/16]	Range 7872 (1EC0 hex) -20°C - 1280 (500 hex) 80°C Default Not Applicable °C Type Read Only

		Displays the heatsink temperature at the end of the last successful start-6
PNU Number	39686 (9B06 hex)	
PNU Name	Last temperature -6	
PNU Format	16 bit (Highbyte=b11-b8, LowByte=b7-b0) Ta >= 0 b12=0 Ta < 0 b12=1	
PNU Note	bit12=0 [HighByte*16 + LowByte/16] bit12=1 256-[HighByte*16 + LowByte/16]	Range 7872 (1EC0 hex) -20°C - 1280 (500 hex) 80°C Default Not Applicable °C Type Read Only

		Displays the heatsink temperature at the end of the last successful start-7
PNU Number	39687 (9B07 hex)	
PNU Name	Last temperature -7	
PNU Format	16 bit (Highbyte=b11-b8, LowByte=b7-b0) Ta >= 0 b12=0 Ta < 0 b12=1	
PNU Note	bit12=0 [HighByte*16 + LowByte/16] bit12=1 256-[HighByte*16 + LowByte/16]	Range 7872 (1EC0 hex) -20°C - 1280 (500 hex) 80°C Default Not Applicable °C Type Read Only

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	39688 (9B08 hex)	Displays the heatsink temperature at the end of the last successful start-8					
PNU Name	Last temperature -8						
PNU Format	16 bit (Highbyte=b11-b8, LowByte=b7-b0) Ta >= 0 b12=0 Ta < 0 b12=1						
PNU Note	bit12=0 [HighByte*16 + LowByte/16] bit12=1 256-[HighByte*16 + LowByte/16]	Range	7872 (1EC0 hex) -20°C - 1280 (500 hex) 80°C	Default	Not Applicable °C	Type	Read Only

PNU Number	39689 (9B09 hex)	Displays the heatsink temperature at the end of the last successful start-9					
PNU Name	Last temperature -9						
PNU Format	16 bit (Highbyte=b11-b8, LowByte=b7-b0) Ta >= 0 b12=0 Ta < 0 b12=1						
PNU Note	bit12=0 [HighByte*16 + LowByte/16] bit12=1 256-[HighByte*16 + LowByte/16]	Range	7872 (1EC0 hex) -20°C - 1280 (500 hex) 80°C	Default	Not Applicable °C	Type	Read Only

PNU Number	40320 (9D80 hex)	Displays the overload level at the end of the last successful start					
PNU Name	Last overload						
PNU Format	16 bit unsigned						
PNU Note	Linear Scaling (1 = 0.006104 %)	Range	0 (0 hex) 0% - 16384 (4000 hex) 100%	Default	0 (0 hex) 0%	Type	Read Only

PNU Number	40321 (9D81 hex)	Displays the overload level at the end of the last successful start -1					
PNU Name	Last overload-1						
PNU Format	16 bit unsigned						
PNU Note	Linear Scaling (1 = 0.006104 %)	Range	0 (0 hex) 0% - 16384 (4000 hex) 100%	Default	0 (0 hex) 0%	Type	Read Only

PNU Number	40322 (9D82 hex)	Displays the overload level at the end of the last successful start -2					
PNU Name	Last overload-2						
PNU Format	16 bit unsigned						
PNU Note	Linear Scaling (1 = 0.006104 %)	Range	0 (0 hex) 0% - 16384 (4000 hex) 100%	Default	0 (0 hex) 0%	Type	Read Only

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	40323 (9D83 hex)		Displays the overload level at the end of the last successful start -3					
PNU Name	Last overload-3							
PNU Format	16 bit unsigned							
PNU Note	Linear Scaling (1 = 0.006104 %)	Range	0 (0 hex) 0%	-	16384 (4000 hex) 100%	Default	0 (0 hex) 0%	Type	Read Only

PNU Number	40324 (9D84 hex)		Displays the overload level at the end of the last successful start -4					
PNU Name	Last overload-4							
PNU Format	16 bit unsigned							
PNU Note	Linear Scaling (1 = 0.006104 %)	Range	0 (0 hex) 0%	-	16384 (4000 hex) 100%	Default	0 (0 hex) 0%	Type	Read Only

PNU Number	40325 (9D85 hex)		Displays the overload level at the end of the last successful start -5					
PNU Name	Last overload-5							
PNU Format	16 bit unsigned							
PNU Note	Linear Scaling (1 = 0.006104 %)	Range	0 (0 hex) 0%	-	16384 (4000 hex) 100%	Default	0 (0 hex) 0%	Type	Read Only

PNU Number	40326 (9D86 hex)		Displays the overload level at the end of the last successful start -6					
PNU Name	Last overload-6							
PNU Format	16 bit unsigned							
PNU Note	Linear Scaling (1 = 0.006104 %)	Range	0 (0 hex) 0%	-	16384 (4000 hex) 100%	Default	0 (0 hex) 0%	Type	Read Only

PNU Number	40327 (9D87 hex)		Displays the overload level at the end of the last successful start -7					
PNU Name	Last overload-7							
PNU Format	16 bit unsigned							
PNU Note	Linear Scaling (1 = 0.006104 %)	Range	0 (0 hex) 0%	-	16384 (4000 hex) 100%	Default	0 (0 hex) 0%	Type	Read Only

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	40328 (9D88 hex)
PNU Name	Last overload-8
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 0.006104 %)

Displays the overload level at the end of the last successful start -8

Range	0 (0 hex) 0%	-	16384 (4000 hex) 100%	Default	0 (0 hex) 0%	Type	Read Only

PNU Number	40329 (9D89 hex)
PNU Name	Last overload-9
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 0.006104 %)

Displays the overload level at the end of the last successful start -9

Range	0 (0 hex) 0%	-	16384 (4000 hex) 100%	Default	0 (0 hex) 0%	Type	Read Only

PNU Number	44864 (AF40 hex)
PNU Name	Trip Sensitivity
PNU Format	16 bit unsigned
PNU Note	Linear Scaling (1 = 0.006104 %)

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 (0 hex) 0%	-	16384 (4000 hex) 100%	Default	0 (0 hex) 0%	Type	Read/Write

PNU Number	53762 (D202 hex)
PNU Name	Input Side Phase Loss
PNU Format	8 bit unsigned
PNU Note	Binary value

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	0 (0 hex) Off	-	1 (1 hex) On	Default	1 (1 hex) On	Type	Read/Write

PNU Number	53768 (D208 hex)
PNU Name	Thermal Sensor Trip
PNU Format	8 bit unsigned
PNU Note	Binary value

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	0 (0 hex) Off	-	1 (1 hex) On	Default	1 (1 hex) On	Type	Read/Write

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	53769 (D209 hex)	This features controls the soft stop improve stability
PNU Name	Shut Down (1)	On : The stop time is truncated if the motor experiences severe torque fluctuations during the soft stop
PNU Format	8 bit unsigned	Off : The motor will stop in the set time.
PNU Note	Binary value	Range 0 (0 hex) Off - 1 (1 hex) On Default 1 (1 hex) On Type Read/Write

PNU Number	53770 (D20A hex)	This features controls the soft stop improve stability
PNU Name	Shut Down (2)	On : The stop time is truncated if the motor experiences severe torque fluctuations during the soft stop
PNU Format	8 bit unsigned	Off : The motor will stop in the set time.
PNU Note	Binary value	Range 0 (0 hex) Off - 1 (1 hex) On Default 1 (1 hex) On Type Read/Write

PNU Number	53774 (D20E hex)	Detects if there is a fault with one or more of the internal Thyristors or bypass relays
PNU Name	Thyristor Firing Trip	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)
PNU Format	8 bit unsigned	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
PNU Note	Binary value	Range 0 (0 hex) Off - 1 (1 hex) On Default 1 (1 hex) On Type Read/Write

PNU Number	53775 (D20F hex)	Detects if the internal current sensors have failed or reading a very low level.
PNU Name	Current Sensor Trip	On : The Unit will trip if the internal current sensors fail or the current measured falls to a very low level
PNU Format	8 bit unsigned	Off : Will continue to operate even if the sensor has failed. Measurements and overload protection may be effected
PNU Note	Binary value	Range 0 (0 hex) Off - 1 (1 hex) On Default 0 (0 hex) Off Type Read/Write

PNU Number	53777 (D211 hex)	Detects if there is a disconnection between the Unit output and the motor
PNU Name	Motor Side Phase Loss	On : Trips if there is a disconnection between the output side of the Unit and the motor
PNU Format	8 bit unsigned	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
PNU Note	Binary value	Range 0 (0 hex) Off - 1 (1 hex) On Default 1 (1 hex) On Type Read/Write

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	53781 (D215 hex)	Detects if there is a fault with operation of one or more of the internal Thyristors
PNU Name	Sensing Fault Trip	On : Trips if one or more of the Thyristors fails to turn on properly.
PNU Format	8 bit unsigned	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
PNU Note	Binary value	Range 0 (0 hex) Off - 1 (1 hex) On Default 1 (1 hex) On Type Read/Write

PNU Number	53782 (D216 hex)	Detects if the cooling fans have failed.
PNU Name	Fan Trip	On : The Unit trips if the cooling fans fitted to the Unit fail.
PNU Format	8 bit unsigned	Off : Will continue to operate and is likely to trip on a thermal trip as the heatsink will not be sufficiently cooled
PNU Note	Binary value	Range 0 (0 hex) Off - 1 (1 hex) On Default 1 (1 hex) On Type Read/Write

PNU Number	53787 (D21B hex)	This can be used to detect if the motor is running lightly loaded.
PNU Name	Low Current Trip	On : The Unit will trip. This feature is not active during soft start and soft stop.
PNU Format	8 bit unsigned	Off: The Unit will continue to operate regardless of motor current
PNU Note	Binary value	Range 0 (0 hex) Off - 1 (1 hex) On Default 0 (0 hex) Off Type Read/Write

PNU Number	53790 (D21E hex)	Selects trip or continue if the current limit has been active for too long
PNU Name	Start Current Limit Trip	On : The Unit will trip
PNU Format	8 bit unsigned	Off: The start will continue regardless of the motor current level
PNU Note	Binary value	Range 0 (0 hex) Off - 1 (1 hex) On Default 1 (1 hex) On Type Read/Write

PNU Number	53791 (D21F hex)	Selects trip or continue if the stop current limit has been active for too long
PNU Name	Stop Current Limit Trip	On : The Unit will trip
PNU Format	8 bit unsigned	Off: The stop will continue regardless of the motor current level
PNU Note	Binary value	Range 0 (0 hex) Off - 1 (1 hex) On Default 0 (0 hex) Off Type Read/Write

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	53792 (D220 hex)	The Unit has an "Overload" function that is an electronic equivalent to a thermal overload.
PNU Name	Overload Trip	On : The Unit will trip when the "Overload" capacity (ModbusPNU 33408) exceeds 100%
PNU Format	8 bit unsigned	Off: The Unit will continue to operate regardless of motor current level
PNU Note	Binary value	Range	0 (0 hex) Off - 1 (1 hex) On	Default	1 (1 hex) On	Type	Read/Write

PNU Number	53793 (D221 hex)	The shearpin is an electronic equivalent of a mechanical shearpin
PNU Name	Shearpin Trip	On : The Unit will trip, This feature is not active during soft start and soft stop.
PNU Format	8 bit unsigned	Off: The Unit will continue to operate regardless of motor current level
PNU Note	Binary value	Range	0 (0 hex) Off - 1 (1 hex) On	Default	1 (1 hex) On	Type	Read/Write

PNU Number	53794 (D222 hex)	A single PTC motor thermistor or set of PTC motor thermistors can be connected to the PTC terminals.
PNU Name	PTC Motor Thermistor Trip	On :The Unit will trip if the motor thermistor exceed its response temperature or the PTC input is open circuit
PNU Format	8 bit unsigned	Off : The Unit will continue to operate.
PNU Note	Binary value	Range	0 (0 hex) Off - 1 (1 hex) On	Default	0 (0 hex) Off	Type	Read/Write

PNU Number	53795 (D223 hex)	Allows a trip to be forced using one of the digital inputs
PNU Name	External Trip	On : Trips when the programmed input is active
PNU Format	8 bit unsigned	Off : External Trip is disabled
PNU Note	Binary value	Range	0 (0 hex) Off - 1 (1 hex) On	Default	0 (0 hex) On	Type	Read/Write

PNU Number	53796 (D224 hex)	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)
PNU Name	Communications Trip	On :Communication trip enabled.
PNU Format	8 bit unsigned	Off : Communication trip disabled.
PNU Note	Binary value	Range	0 (0 hex) Off - 1 (1 hex) On	Default	1 (1 hex) On	Type	Read/Write

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	53798 (D226 hex)	Detects if the keypad Board has failed to operate normally
PNU Name	Operation 1 Trip	On : Operation 1 trip enabled.
PNU Format	8 bit unsigned	Off : Operation 1 trip disabled.
PNU Note	Binary value	Range 0 (0 hex) Off - 1 (1 hex) On Default 1 (1 hex) Off Type Read/Write

PNU Number	53799 (D227 hex)	Detects if the logging function has failed to operate normally
PNU Name	Operation 2 Trip	On : Operation 2 trip enabled.
PNU Format	8 bit unsigned	Off : Operation 2 trip disabled.
PNU Note	Binary value	Range 0 (0 hex) Off - 1 (1 hex) On Default 1 (1 hex) Off Type Read/Write

PNU Number	53800 (D228 hex)	Detects if the Control Board has failed to operate normally
PNU Name	Operation 3 Trip	On : Operation 3 trip enabled.
PNU Format	8 bit unsigned	Off : Operation 3 trip disabled.
PNU Note	Binary value	Range 0 (0 hex) Off - 1 (1 hex) On Default 1 (1 hex) On Type Read/Write

PNU Number	53803 (D22B hex)	For safety purposes the Unit has been designed to trip if the front cover is open
PNU Name	Cover Open Trip	On : The Unit will trip if the front cover is open. This trip is active at all times.
PNU Format	8 bit unsigned	Off : The Unit will continue to operate with the cover open
PNU Note	Binary value	Range 0 (0 hex) Off - 1 (1 hex) On Default 0 (0 hex) Off Type Read/Write

PNU Number	53804 (D22C hex)	For safety reasons the Unit will trip during some operations if the remote start signal is active
PNU Name	Remote Start Trip	On : Trips if the remote start signal is active when the Unit is powered up or a reset is applied.
PNU Format	8 bit unsigned	Off : The Unit will not trip and may start unexpectedly if the start signal is accidently left active.
PNU Note	Binary value	Range 0 (0 hex) Off - 1 (1 hex) On Default 1 (1 hex) On Type Read/Write

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	53807 (D22F hex)	Determines if supply phase sequence is incorrect for motor rotation
PNU Name	L1-L3-L2 Trip	On : Trips if the phase sequence is L1, L3, L2.
PNU Format	8 bit unsigned	Off : The Unit will continue to operate normally
PNU Note	Binary value	Range 0 (0 hex) Off - 1 (1 hex) On Default 0 (0 hex) Off Type Read/Write

PNU Number	53808 (D230 hex)	Determines if supply phase sequence is incorrect for motor rotation
PNU Name	L1-L2-L3 Trip	On : Trips if the phase sequence is L1, L2, L3.
PNU Format	8 bit unsigned	Off : The Unit will continue to operate normally
PNU Note	Binary value	Range 0 (0 hex) Off - 1 (1 hex) On Default 0 (0 hex) Off Type Read/Write

PNU Number	59392 (E800 hex)	Local Touch Screen : Control using the button on the keypad User Programmable : Control using the terminals, function defined in "I/O" menu
PNU Name	Control Method	Two Wire Control : Control using terminals, functions fixed as shown on screen Three Wire Control : Control using terminals, functions fixed as shown on screen
PNU Format	16 bit unsigned	Modbus Network : Control via remote Modbus network or remote Keypad or Modbus TCP
PNU Note	0 = Local, 1 = User, 2 = TwoWire 3 = ThreeWire, 4 = Modbus	Range 0 (0 hex) Local Touch Screen - 4 (4 hex) Modbus Network Default 0 (0 hex) Local Touch Screen Type Read/Write

PNU Number	60608 (ECC0 hex)	Displays the last Fault trip
PNU Name	Last Trip	
PNU Format	16 bit unsigned	
PNU Note	Linear Scaling (1 =1) See Trip Code Descriptions	Range 0 (0 hex) 0 - 65535 (FFFF hex) 65535 Default 0 (0 hex) 0 Type Read Only

PNU Number	60609 (ECC1 hex)	Displays the last Fault trip -1
PNU Name	Last Trip -1	
PNU Format	16 bit unsigned	
PNU Note	Linear Scaling (1 =1) See Trip Code Descriptions	Range 0 (0 hex) 0 - 65535 (FFFF hex) 65535 Default 0 (0 hex) 0 Type Read Only

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	60610 (ECC2 hex)	Displays the last Fault trip -2
PNU Name	Last Trip -2	
PNU Format	16 bit unsigned	
PNU Note	Linear Scaling (1 =1) See Trip Code Descriptions	Range 0 (0 hex) 0 - 65535 (FFFF hex) 65535 Default 0 (0 hex) 0 Type Read Only

PNU Number	60611 (ECC3 hex)	Displays the last Fault trip -3
PNU Name	Last Trip -3	
PNU Format	16 bit unsigned	
PNU Note	Linear Scaling (1 =1) See Trip Code Descriptions	Range 0 (0 hex) 0 - 65535 (FFFF hex) 65535 Default 0 (0 hex) 0 Type Read Only

PNU Number	60612 (ECC4 hex)	Displays the last Fault trip -4
PNU Name	Last Trip -4	
PNU Format	16 bit unsigned	
PNU Note	Linear Scaling (1 =1) See Trip Code Descriptions	Range 0 (0 hex) 0 - 65535 (FFFF hex) 65535 Default 0 (0 hex) 0 Type Read Only

PNU Number	60613 (ECC5 hex)	Displays the last Fault trip -5
PNU Name	Last Trip -5	
PNU Format	16 bit unsigned	
PNU Note	Linear Scaling (1 =1) See Trip Code Descriptions	Range 0 (0 hex) 0 - 65535 (FFFF hex) 65535 Default 0 (0 hex) 0 Type Read Only

PNU Number	60614 (ECC6 hex)	Displays the last Fault trip -6
PNU Name	Last Trip -6	
PNU Format	16 bit unsigned	
PNU Note	Linear Scaling (1 =1) See Trip Code Descriptions	Range 0 (0 hex) 0 - 65535 (FFFF hex) 65535 Default 0 (0 hex) 0 Type Read Only

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	60615 (ECC7 hex)	Displays the last Fault trip -7						
PNU Name	Last Trip -7							
PNU Format	16 bit unsigned							
PNU Note	Linear Scaling (1 =1) See Trip Code Descriptions	Range	0 (0 hex) 0 - 65535 (FFFF hex) 65535	Default	0 (0 hex) 0	Type	Read Only

PNU Number	60616 (ECC8 hex)	Displays the last Fault trip -8						
PNU Name	Last Trip -8							
PNU Format	16 bit unsigned							
PNU Note	Linear Scaling (1 =1) See Trip Code Descriptions	Range	0 (0 hex) 0 - 65535 (FFFF hex) 65535	Default	0 (0 hex) 0	Type	Read Only

PNU Number	60617 (ECC9 hex)	Displays the last Fault trip -9						
PNU Name	Last Trip -9							
PNU Format	16 bit unsigned							
PNU Note	Linear Scaling (1 =1) See Trip Code Descriptions	Range	0 (0 hex) 0 - 65535 (FFFF hex) 65535	Default	0 (0 hex) 0	Type	Read Only

PNU Number	60672 (ED00 hex)	Displays the event time						
PNU Name	Last Trip (Time)							
PNU Format	6 Bytes							
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range	-hh:mm:ss - -hh:mm:ss	Default	GMT timehh:mm:ss	Type	Read/Write

PNU Number	60675 (ED03 hex)	Displays the event time						
PNU Name	Last Trip -1 (Time)							
PNU Format	6 Bytes							
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range	-hh:mm:ss - -hh:mm:ss	Default	GMT timehh:mm:ss	Type	Read/Write

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	60678 (ED06 hex)	Displays the event time
PNU Name	Last Trip -2 (Time)	
PNU Format	6 Bytes	
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range -hh:mm:ss - -hh:mm:ss Default GMT timehh:mm:ss Type Read/Write

PNU Number	60681 (ED09 hex)	Displays the event time
PNU Name	Last Trip -3 (Time)	
PNU Format	6 Bytes	
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range -hh:mm:ss - -hh:mm:ss Default GMT timehh:mm:ss Type Read/Write

PNU Number	60684 (ED0C hex)	Displays the event time
PNU Name	Last Trip -4 (Time)	
PNU Format	6 Bytes	
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range -hh:mm:ss - -hh:mm:ss Default GMT timehh:mm:ss Type Read/Write

PNU Number	60687 (ED0F hex)	Displays the event time
PNU Name	Last Trip -5 (Time)	
PNU Format	6 Bytes	
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range -hh:mm:ss - -hh:mm:ss Default GMT timehh:mm:ss Type Read/Write

PNU Number	60690 (ED12 hex)	Displays the event time
PNU Name	Last Trip -6 (Time)	
PNU Format	6 Bytes	
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range -hh:mm:ss - -hh:mm:ss Default GMT timehh:mm:ss Type Read/Write

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	60693 (ED15 hex)	Displays the event time						
PNU Name	Last Trip -7 (Time)							
PNU Format	6 Bytes							
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range	-hh:mm:ss - -hh:mm:ss	Default	GMT timehh:mm:ss	Type	Read/Write

PNU Number	60696 (ED18 hex)	Displays the event time						
PNU Name	Last Trip -8 (Time)							
PNU Format	6 Bytes							
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range	-hh:mm:ss - -hh:mm:ss	Default	GMT timehh:mm:ss	Type	Read/Write

PNU Number	60699 (ED1B hex)	Displays the event time						
PNU Name	Last Trip -9 (Time)							
PNU Format	6 Bytes							
PNU Note	Time(ms) since midnight (bytes5,4,3,2) and Days since 01/01/1984 (bytes1,0)	Range	-hh:mm:ss - -hh:mm:ss	Default	GMT timehh:mm:ss	Type	Read/Write

PNU Number	62080 (F280 hex)	Restores the Unit to the factory defaults						
PNU Name	Reset Defaults							
PNU Format	16 bit unsigned							
PNU Note	Binary value	Range	0 (0 hex) No - 1 (1 hex) Yes	Default	0 (0 hex) No	Type	Read/Write

PNU Number	62144 (F2C0 hex)	Saves all Read /Write parameters to non volatile memory						
PNU Name	Save Parameters	Yes : Parameters are permanently written						
PNU Format	16 bit unsigned	No : Parameters remain changed until next power cycle						
PNU Note	Binary value	Range	0 (0 hex) No - 1 (1 hex) Yes	Default	0 (0 hex) No	Type	Read/Write

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]		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

PNU Number	Trip Code Descriptions	Phase L1 missing at the instant of start up.
PNU Name	101 Input Side Phase Loss	The L1 phase is either missing or at a very low level
PNU Format		Check all incoming connections. If a main contactor is being controlled by a digital output set to "Running" check contactor delay is sufficient
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range —	Default	Type	Read Only

PNU Number	Trip Code Descriptions	Phase L2 missing at the instant of start up
PNU Name	102 Input Side Phase Loss	The L2 phase is either missing or at a very low level
PNU Format		Check all incoming connections. If a main contactor is being controlled by a digital output set to "Running" check contactor delay is sufficient
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range —	Default	Type	Read Only

PNU Number	Trip Code Descriptions	Phase L3 missing at the instant of start up
PNU Name	103 Input Side Phase Loss	The L3 phase is either missing or at a very low level
PNU Format		Check all incoming connections. If a main contactor is being controlled by a digital output set to "Running" check contactor delay is sufficient
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range —	Default	Type	Read Only

PNU Number	Trip Code Descriptions	Any or all phases missing when the motor is being controlled
PNU Name	104 - 117 Input Side Phase Loss	L1 phase, L2 phase or L3 phase are missing or at a very low level.
PNU Format		Check all incoming connections. Check any fuses / breakers incorporated in the power circuit
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range —	Default	Type	Read Only

PNU Number	Trip Code Descriptions	Internal heatsink temperature has exceeded 90°C
PNU Name	201 Maximum Temp. Exceeded	It is possible the Unit is operating outside specified limits.
PNU Format		Check enclosure ventilation and airflow around the Unit. If the unit trips immediately the internal temperature sensor could be faulty.
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range —	Default	Type	Read Only

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]		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				

PNU Number	Trip Code Descriptions	Thermal sensor Failure				
PNU Name	208 Thermal Sensor Trip	The internal temperature sensor has failed				
PNU Format		Contact the supplier				
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

PNU Number	Trip Code Descriptions	One or more of the internal control thyristors (SCRs) have failed to turn on properly. (In-Line "Firing Mode")				
PNU Name	301-308 Thyristor Firing Trip	The Unit has detected that the SCRs are not operating as expected.				
PNU Format		Check all incoming and outgoing connections.				
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

PNU Number	Trip Code Descriptions	One or more of the internal control thyristors (SCRs) have failed to turn on properly. (Delta "Firing Mode")				
PNU Name	350-358 Thyristor Firing Trip	The Unit has detected that the SCRs are not operating as expected.				
PNU Format		Check all incoming and outgoing connections.				
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

PNU Number	Trip Code Descriptions	One or all of the phases are missing on the motor side during the instant of start up				
PNU Name	401 Motor Side Phase Loss	T1 phase, T2 phase or T3 phase are missing or at a very low level.				
PNU Format		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.				
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

PNU Number	Trip Code Descriptions	One or all of the phases are missing on the motor side during the instant of start up when the motor being controlled				
PNU Name	402-403 Motor Side Phase Loss	T1 phase, T2 phase or T3 phase are missing or at a very low level.				
PNU Format		Check all incoming and outgoing connections.				
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

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

SWI-SGY-USB-V05504 [SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	Trip Code Descriptions	The motor has been held in current limit longer than the "Start current limit Time"
PNU Name	1201 Current Limit Timeout Trip	It is likely that the current limit level has been set too low for the application.
PNU Format		Increase the current limit level or timeout period.
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

PNU Number	Trip Code Descriptions	The motor has been held in current limit longer than the "Stop current limit Time"
PNU Name	1202 Current Limit Timeout Trip	It is likely that the current limit level has been set too low for the application.
PNU Format		Increase the current limit level or timeout period.
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

PNU Number	Trip Code Descriptions	The "Overload" has exceeded 100%
PNU Name	1301 Overload Trip	The Unit is attempting to start an application that is outside its capacity or it is starting too often.
PNU Format		Refer to the overload trip curves to determine whether the Unit has been sized correctly.
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

PNU Number	Trip Code Descriptions	The motor current has exceeded 475% (i-Unit) for a time greater than 250ms
PNU Name	1302 Overload Trip	The Unit is attempting to start an application that is outside its capacity with a "high current limit level" set
PNU Format		Refer to the overload trip curves to determine whether the Unit has been sized correctly , and check current limit level.
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

PNU Number	Trip Code Descriptions	The motor current has been higher than the "Shearpin Trip Level" for the trip time.
PNU Name	1401 Shearpin Trip	This trip is not active during soft start and soft stop and is "off" by default.
PNU Format		If Shearpin trip is not required turn "off" in "Trip Settings".
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	Trip Code Descriptions	The PTC thermistor value has exceed the trip level.
PNU Name	1501 PTC Thermistor Trip	The PTC thermistor connected to the PTC input has exceeded it response temperature or the PTC input is open circuit.
PNU Format		If the PTC TRIP is not required turn "off" in "Trip Settings".
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

PNU Number	Trip Code Descriptions	Communications failure
PNU Name	1701 Communications Trip	The command or status PNU has not ben polled in the time set in the "Timeout" period
PNU Format		If the communication trip is disabled the Unit cannot be stopped in the communications fail
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

PNU Number	Trip Code Descriptions	One or more of the internal bypass relays has failed to close
PNU Name	1801-1802 Bypass Relay Trip	The internal bypass relay has failed or the control supply is to weak.
PNU Format		Ensure 24VDC supply meets the requirements specified in the Quick Start Guide.
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

PNU Number	Trip Code Descriptions	One or more of the internal bypass relays has failed to open
PNU Name	1803 Bypass Relay Trip	The internal bypass relay has failed or the control supply is too weak.
PNU Format		Ensure 24VDC supply meets the requirements specified in the Quick Start Guide.
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

PNU Number	Trip Code Descriptions	The Unit cover is open
PNU Name	1901 Cover Open, Close to Enable Motor Start	The cover is open or not closed properly
PNU Format		Close Cover, or if Cover trip is not required turn off in "Trip Settings"
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

SWI-SGY-USB-V05504	Description
[SGY1051100 SGY2061600 SGY3023400]	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

PNU Number	Trip Code Descriptions	The remote start signal is active.				
PNU Name	2001-2003 Remote Start is Enabled	The remote start signal was active during power up or Reset or Parameter Load.				
PNU Format		Turn off remote, or if Remote On trip is not required turn "off" in "Trip Settings"				
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

PNU Number	Trip Code Descriptions	The input phase rotation is RYB (L1, L2,L3)				
PNU Name	2101 Rotation L1 L2 L3 Trip	The phase rotation is opposite to that required.				
PNU Format		Change phase rotation, or if "RYB" trip is not required turn "off" in trip settings.				
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

PNU Number	Trip Code Descriptions	The input phase rotation is RBY (L1, L3,L2)				
PNU Name	2102 Rotation L1 L3 L2 Trip	The phase rotation is opposite to that required.				
PNU Format		Change phase rotation, or if "RBY" trip is not required turn "off" in trip settings.				
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

PNU Number	Trip Code Descriptions	Internal Unit Failure				
PNU Name	2201-2299 2701-2799 MPU Trip	The Unit has failed internally and is unable to recover automatically.				
PNU Format		Cycle the control supply. If the fault is not cleared then contact the supplier				
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

PNU Number	Trip Code Descriptions	Current sensor failure				
PNU Name	2301-2303 Current Sensor Trip	One or more of the internal sensors used to measure current has failed or is reading a low value.				
PNU Format		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				
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

SWI-SGY-USB-V05504		Description
[SGY1051100 SGY2061600 SGY3023400]		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

PNU Number	Trip Code Descriptions	Fail Safe operation
PNU Name	2401-2499 Operation 3 Trip	A process associated with the Control Board has been affected and is unable to recover automatically
PNU Format		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
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

PNU Number	Trip Code Descriptions	Fail Safe operation
PNU Name	2501-2599 Operation 1 Trip	A process associated with the Keypad board has been affected and is unable to recover automatically
PNU Format		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
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only

PNU Number	Trip Code Descriptions	Fail Safe operation
PNU Name	2601-2699 Operation 2 Trip	A process associated with the Logging function has been affected and is unable to recover automatically
PNU Format		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
PNU Note	The Trip Number shown in PNU Name is a decimal value	Range	-	Default		Type	Read Only