# synergy™
# Programming Manual

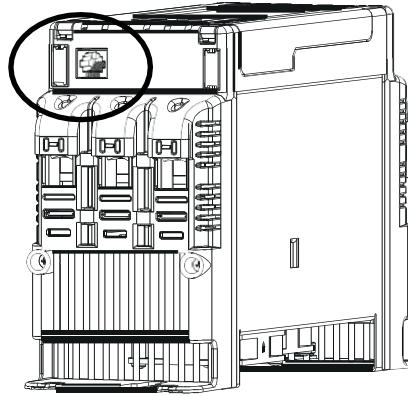**Modbus RTU**



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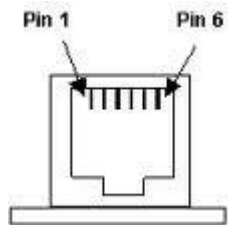
Device >> Modbus Network Settings >> Address (1 – 32)
Device >> Modbus Network Settings >> Baud (9600 – 115200)
Device  >> Modbus Network Settings >> Parity (Odd / Even)

(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:**

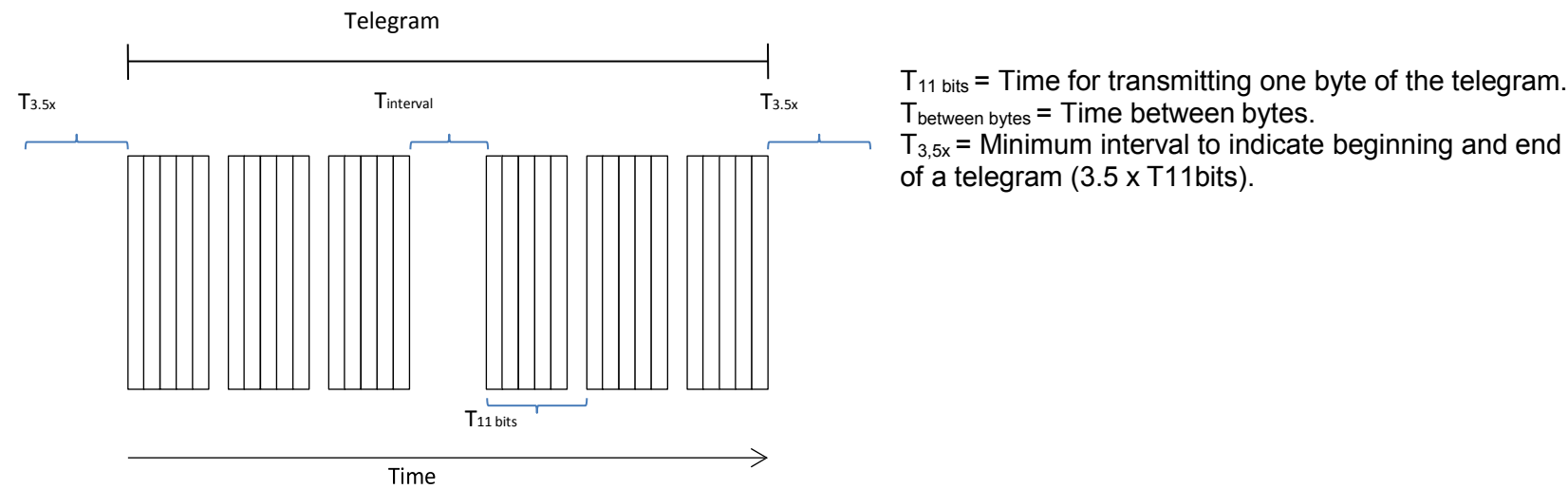| Query | | Response | |
|---|---|---|---|
| Field | Hex Byte | Field | Hex Byte |
| Slave address | 01 | Slave address | 01 |
| Function | 16 | Function | 16 |
| Address Hi | 00 | Address Hi | 02 |
| Address Lo | 0C | Address Lo | 0C |
| Force data Hi | 00 | Force data Hi | 00 |
| Force data Lo | 09 | 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.
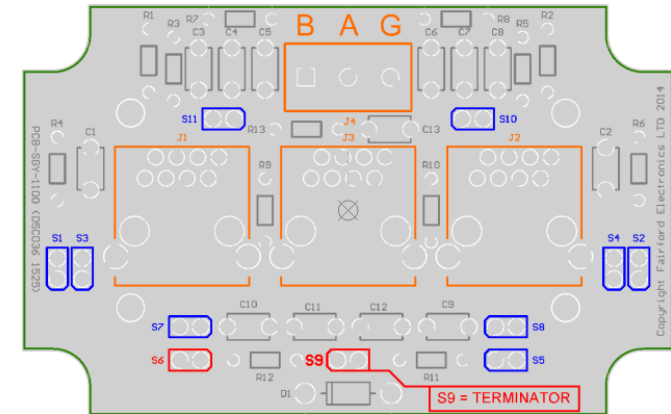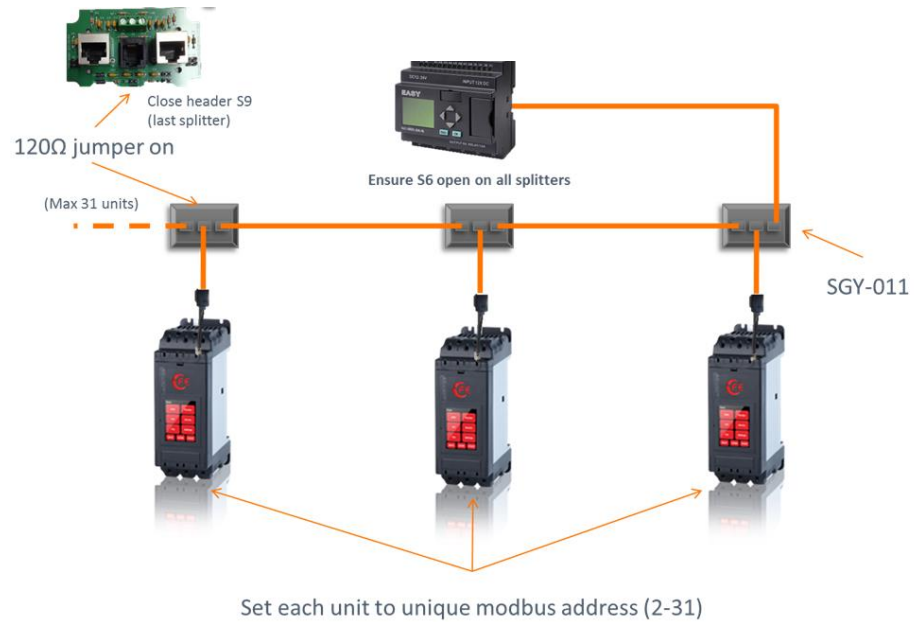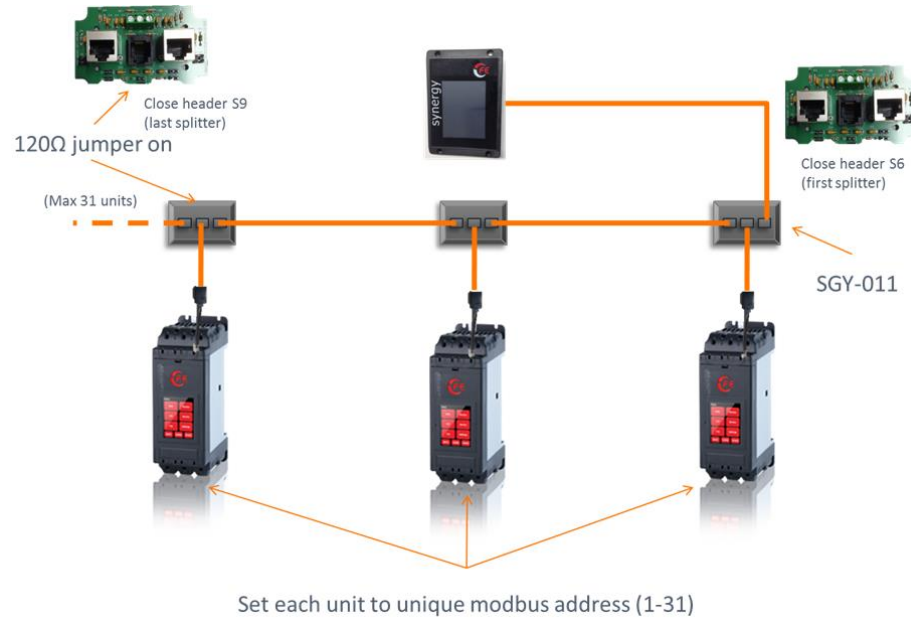
| Parameter Number (PNU) | Modbus Data Address | |
| --- | --- | --- |
| | Decimal | Hexadecimal |
| PNU0000 | 0 | 0000h |
| PNU0001 | 1 | 0001h |
| : | : | : |
| PNU0128 | 128 | 0080h |
| : | : | : |

## 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)



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)



B A G

S9 = TERMINATOR

SGY-011 jumper locations

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400  SGY2070000  SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>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.<br>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-V05700 [ SGY1051400  SGY2070000  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 ) |
|---|---|
| PNU Name | Rate End Start (3) |
| PNU Format | 16 bit unsigned |
| PNU Note | Linear Scaling  ( 1 = 0.006104 % ) |

Adjusts the response of the "Automatic End Start (3)"

Increase to provide a greater smoothing effect If there are torque fluctuations that occur during the soft start.

When set to zero the smoothing is effectively disabled.

| Range | 0 ( 0 hex )  0% | - | 16384 ( 4000 hex )  100% | Default | 8192 ( 2000 hex )  50% | Type | Read/Write |
|---|---|---|---|---|---|---|---|

| PNU Number | 896 ( 380 hex ) |
|---|---|
| PNU Name | Stop Pedestal |
| PNU Format | 16 bit unsigned |
| PNU Note | Linear Scaling  ( 1 = 0.006104 % ) |

Percentage of the supply voltage applied to the motor at the end of the soft stop

Increase if the motor crawls at the end of the soft stop.

Decrease if a greater soft-stop effect is required at the end of the ramp.

| Range | 1638 ( 666 hex )  10% | - | 6553 ( 1999 hex )  40% | Default | 1638 ( 666 hex )  10% | Type | Read/Write |
|---|---|---|---|---|---|---|---|

| PNU Number | 7040 ( 1B80 hex ) |
|---|---|
| PNU Name | Kick Start Time |
| PNU Format | 16 bit unsigned |
| PNU Note | Linear Scaling  ( 1 = 1 ms ) |

Time that the torque pulse is applied to load

Increase to provide more torque If the load fails to break away.

Decrease if the motor accelerates too quickly.

| Range | 10 ( A hex )  10ms | - | 2000 ( 7D0 hex )  2000ms | Default | 100 ( 64 hex )  100ms | Type | Read/Write |
|---|---|---|---|---|---|---|---|

| PNU Number | 7104 ( 1BC0 hex ) |
|---|---|
| PNU Name | Start Time |
| PNU Format | 16 bit unsigned |
| PNU Note | Linear Scaling  ( 1 = 1 s ) |

Time taken to soft start from the "Start Pedestal" to the end of the start

Normally set between 5 and 30 seconds.  Actual time to get to full voltage depends on the "Start Current Limit Level".

If set too long the motor can be at speed before the end of the time set. Refer to "Automatic End Start"

| Range | 1 ( 1 hex )  1s | - | 300 ( 12C hex )  300s | Default | 10 ( A hex )  10s | Type | Read/Write |
|---|---|---|---|---|---|---|---|

| PNU Number | 7296 ( 1C80 hex ) |
|---|---|
| PNU Name | Stop Time |
| PNU Format | 16 bit unsigned |
| PNU Note | Linear Scaling  ( 1 = 1 s ) |

The time taken to soft stop from full voltage or the iERS level to the 'Stop Pedestal'

Normally set between 15 and 60 seconds. Actual time to get to 'Stop Pedestal' depends on the "Stop Current Limit Level".

If set too long the motor may reach zero speed before the end of the time set. Refer to "Automatic End Stop"

| Range | 0 ( 0 hex )  0s | - | 300 ( 12C hex )  300s | Default | 0 ( 0 hex )  0s | Type | Read/Write |
|---|---|---|---|---|---|---|---|

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400  SGY2070000  SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>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 |
|---|---|---|---|---|---|---|---|

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| 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 |
|---|---|---|---|---|---|---|---|

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| 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 |
|---|---|---|---|---|---|---|---|

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| PNU Number | 9024 ( 2340 hex ) |
|---|---|
| PNU Name | Select Function |
| PNU Format | 16 bit unsigned |
| PNU Note | 514=Imeasued, 522=Overload,<br>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 |
|---|---|---|---|---|---|---|---|

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| 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-V05700 | Description |
|---|---|
| [ SGY1051400   SGY2070000   SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |

| **PNU Number** | 9152 ( 23C0 hex ) |
|---|---|
| **PNU Name** | Analogue Output Value |
| **PNU Format** | 16 bit unsigned |
| **PNU Note** | Linear Scaling  ( 1 = 1 ) |

The value of the Analogue output

The internal Digital to analogue converter is 10 bit.

| Range | 0 ( 0 hex )  0 | - | 1024 ( 400 hex )  1024 | Default | 0 ( 0 hex )  0 | Type | Read Only |
|---|---|---|---|---|---|---|---|

| **PNU Number** | 9600 ( 2580 hex ) |
|---|---|
| **PNU Name** | Analogue Input Type |
| **PNU Format** | 8 bit unsigned |
| **PNU Note** | Binary value |

Defines the function of the analogue input (AI)

0-10V : The input voltage varies from 0-10V

4-20mA : The input varies from 4 to 20mA

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

| **PNU Number** | 9664 ( 25C0 hex ) |
|---|---|
| **PNU Name** | Select Function |
| **PNU Format** | 16 bit unsigned |
| **PNU Note** | 420=Current Limit Start, 431=I Shearpin, 441=I Overload |

Allows the Analogue input to be mapped to different functions

The selected function will change in proportion with the input

By default the function will be at its maximum when the input is at it maximum

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

| **PNU Number** | 9728 ( 2600 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 selected function will change in proportion with the input

The function will be at its "Scaling Level" when the input is at its maximum

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

| **PNU Number** | 9792 ( 2640 hex ) |
|---|---|
| **PNU Name** | Analogue Input Value |
| **PNU Format** | 16 bit unsigned |
| **PNU Note** | Linear Scaling  ( 1 = 1 ) |

The value of the analogue Input

The internal Analogue to Digital converter is 10 bit.

| Range | 0 ( 0 hex )  0 | - | 1024 ( 400 hex )  1024 | Default | 0 ( 0 hex )  0 | Type | Read Only |
|---|---|---|---|---|---|---|---|

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400  SGY2070000  SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>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 or double or triple PTC in series<br>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.<br>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.<br>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<br>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<br>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.<br>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,<br>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,<br>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,<br>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-V05700 | Description |
|---|---|
| **[ SGY1051400  SGY2070000  SGY3023400 ]** | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,  i-rated = synergy Class20 / Class30 current,  i-motor = motor current |

| PNU Number | 11584 ( 2D40 hex ) |
|---|---|
| **PNU Name** | Select Function |
| **PNU Format** | 16 bit unsigned |
| **PNU Note** | 581=Rdy,582=En,583=Error,588=Running,<br>590=EndOfStart,591=C/L,595=iErsActive |

Allows the Digital output (N/C (12)) to be mapped to different functions

The output will change in proportion with the selected output

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

| PNU Number | 11585 ( 2D41 hex ) |
|---|---|
| **PNU Name** | Select Function |
| **PNU Format** | 16 bit unsigned |
| **PNU Note** | 581=Rdy,582=En,583=Error,588=Running,<br>590=EndOfStart,591=C/L,595=iErsActive |

Allows the Digital output (N/0 (24)) to be mapped to different functions

The output will change in proportion with the selected output

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

| PNU Number | 11586 ( 2D42 hex ) |
|---|---|
| **PNU Name** | Select Function |
| **PNU Format** | 16 bit unsigned |
| **PNU Note** | 581=Rdy,582=En,583=Error,588=Running,<br>590=EndOfStart,591=C/L,595=iErsActive |

Allows the Digital output (N/0 (34)) to be mapped to different functions

The output will change in proportion with the selected output

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

| PNU Number | 11587 ( 2D43 hex ) |
|---|---|
| **PNU Name** | Select Function |
| **PNU Format** | 16 bit unsigned |
| **PNU Note** | 581=Rdy,582=En,583=Error,588=Running,<br>590=EndOfStart,591=C/L,595=iErsActive |

Allows the Digital output (N/0 (44)) to be mapped to different functions

The output will change in proportion with the selected output

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

| PNU Number | 12800 ( 3200 hex ) |
|---|---|
| **PNU Name** | Serial Number |
| **PNU Format** | 8 bit unsigned |
| **PNU Note** | ASCII alpha numeric character<br>Byte 7 (MSB) |

The device serial number stored at the point of manufacture

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

| SWI-SGY-USB-V05700 [ SGY1051400  SGY2070000  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-V05700 | Description |
|---|---|
| [ SGY1051400  SGY2070000  SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>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<br>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<br>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<br>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<br>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<br>Byte 1 | Range | 48 ( 30 hex )  0 | - | 57 ( 39 hex )  Max Value | Default | 48 ( 30 hex )  0 | Type | Read/Write |

| SWI-SGY-USB-V05700 [ SGY1051400  SGY2070000  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-V05700 | Description |
|---|---|
| [ SGY1051400  SGY2070000  SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>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,<br>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.<br>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 | 14144 ( 3740 hex ) | The unit is configured to start and stop when the main contactor opens and closes. |
|---|---|---|
| **PNU Name** | Main Contactor Control | On : When a zero stop time is set some faults will be ignored when main conatctor opens |
| **PNU Format** | 8 bit unsigned | Off : The unit may trip when the main contcator opens |
| **PNU Note** | Binary value | Range: 0 ( 0 hex )  Off  -  1 ( 1 hex )  On   Default: 0 ( 0 hex )  Off   Type: Read/Write |

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400   SGY2070000   SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |

| 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 |

| PNU Number | 14720 ( 3980 hex ) | Allows the time to be changed to 'local' time |
|---|---|---|
| PNU Name | Time | By default the time is set to GMT |
| 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 | 15808 ( 3DC0 hex ) | Communications trip Timeout period |
|---|---|---|
| PNU Name | Timeout ms | To prevent a 'Communications Trip' (If enabled) the bus must be kept active.<br>To keep the bus active there must be at least one Modbus read or write (any PNU) during the "Timeout ms"  period |
| PNU Format | 16 bit unsigned | |
| PNU Note | Linear Scaling  ( 1 = 1 ms ) | Range  0 ( 0 hex )  0ms  -  60000 ( EA60 hex )  60000ms   Default  5000 ( 1388 hex )  5000ms   Type  Read/Write |

| PNU Number | 16000 ( 3E80 hex ) | Sets the Modbus station number |
|---|---|---|
| PNU Name | Address | |
| PNU Format | 16 bit unsigned | |
| PNU Note | Linear Scaling  ( 1 = 1 ) | Range  1 ( 1 hex )  1  -  32 ( 20 hex )  32   Default  1 ( 1 hex )  1   Type  Read/Write |

| PNU Number | 16064 ( 3EC0 hex ) | Sets the serial communications baud rate |
|---|---|---|
| PNU Name | Baud Rate | The available baud rates are 9600 19200 38400 57600 or 115200 |
| PNU Format | 16 bit unsigned | |
| PNU Note | 0=9600, 1=19200, 2=38400, 3=57600, 4=115200 | Range  0 ( 0 hex )  9600  -  4 ( 4 hex )  115200   Default  1 ( 1 hex )  19200   Type  Read/Write |

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400   SGY2070000   SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |

| PNU Number | 16128 ( 3F00 hex ) | | Sets the serial communications parity bit | | | | |
|---|---|---|---|---|---|---|---|
| PNU Name | Parity | | The available parity options are None Even Odd | | | | |
| PNU Format | 16 bit unsigned | | Also sets the stop bits. No parity uses 2 stop bits. Odd or even parity uses 1 stop bit | | | | |
| PNU Note | 0=None, 1=Even, 2=Odd | Range | 0 ( 0 hex )  None        -        2 ( 2 hex )  Odd | Default | 1 ( 1 hex )  Even | Type | Read/Write |

| PNU Number | 17920 ( 4600 hex ) | | CONTROL COMMAND : Start / Stop | | | | |
|---|---|---|---|---|---|---|---|
| PNU Name | Start/Stop | | On  : Starts the Unit<br>Off :  Stops or Soft stops the Unit | | | | |
| PNU Format | 8 bit unsigned | | To map to digital input refer to PNU10944-PNU10946 | | | | |
| PNU Note | Binary value | Range | 0 ( 0 hex )  (Soft) Stop        -        1 ( 1 hex )  Start | Default | 0 ( 0 hex )  (Soft) Stop | Type | Read/Write |

| PNU Number | 18240 ( 4740 hex ) | | CONTROL COMMAND : Freeze Ramp | | | | |
|---|---|---|---|---|---|---|---|
| PNU Name | Freeze Ramp | | On  : The Soft Start Ramp is held and the Unit will take longer than the time set to start<br>Off :  The Soft Start Ramp is not held and the Unit will start in the time set. | | | | |
| PNU Format | 8 bit unsigned | | If set to On this parameter will hold the Start Ramp even if "Current Irms" is less than the "Current Limit Level"<br>To map to digital input refer to PNU10944-PNU10946 | | | | |
| PNU Note | Binary value | Range | 0 ( 0 hex )  Off        -        1 ( 1 hex )  On | Default | 0 ( 0 hex )  Off | Type | Read/Write |

| PNU Number | 18368 ( 47C0 hex ) | | CONTROL COMMAND : Reset | | | | |
|---|---|---|---|---|---|---|---|
| PNU Name | Reset | | On  : The initial state required for a reset.<br>Off :  The final state required for a reset. | | | | |
| PNU Format | 8 bit unsigned | | To reset pulse high and then low<br>To map to digital input refer to PNU10944-PNU10946 | | | | |
| PNU Note | Binary value | Range | 0 ( 0 hex )  Off        -        1 ( 1 hex )  On | Default | 0 ( 0 hex )  Off | Type | Read/Write |

| PNU Number | 18880 ( 49C0 hex ) | | CONTROL COMMAND : External Trip | | | | |
|---|---|---|---|---|---|---|---|
| PNU Name | External Trip | | On  : If "External Trip" is enabled the Unit trips<br>Off :  The Unit will not trip | | | | |
| PNU Format | 8 bit unsigned | | Ensure start signal is low before reset.<br>To map to digital input refer to PNU10944-PNU10946 | | | | |
| PNU Note | Binary value | Range | 0 ( 0 hex )  Off        -        1 ( 1 hex )  On | Default | 0 ( 0 hex )  Off | Type | Read/Write |

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400  SGY2070000  SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,  i-rated = synergy Class20 / Class30 current,  i-motor = motor current |

| 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 |
|---|---|---|---|---|---|

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| PNU Number | 19840 ( 4D80 hex ) |
|---|---|
| PNU Name | Automatic Pedestal |
| PNU Format | 8 bit unsigned |
| PNU Note | Binary value |

Automatically controls the starting torque

On : The initial torque  is increased until the motor starts to rotate at  a moderate speed.

Off: The initial torque is defined by the "Start Pedestal"

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

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| PNU Number | 19904 ( 4DC0 hex ) |
|---|---|
| PNU Name | Automatic End Start (2) |
| PNU Format | 8 bit unsigned |
| PNU Note | Binary value |

Automatically controls the time taken for the motor to start

On : The ramp time  is shortened if the motor current falls below the current limit level  before the end of the "Start Time".

Off: The ramp time  depends on the "Start Time" and "Current Limit"

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

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| PNU Number | 19968 ( 4E00 hex ) |
|---|---|
| PNU Name | Automatic End Start (1) |
| PNU Format | 8 bit unsigned |
| PNU Note | Binary value |

Automatically controls the time taken for the motor to start

On : The ramp time  is shortened if the motor is at speed before the end of the "Start Time"

Off: The ramp time  depends on the "Start Time" and "Current Limit"

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

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| PNU Number | 20032 ( 4E40 hex ) |
|---|---|
| PNU Name | Automatic End Start (3) |
| PNU Format | 8 bit unsigned |
| PNU Note | Binary value |

Automatically controls the time taken for the motor to start

On : The ramp time  is shortened if torque fluctuations occur before the end of the "Start Time"

Off: The ramp time  depends on the "Start Time" and "Current Limit"

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

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400  SGY2070000  SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |

| PNU Number | 20160 ( 4EC0 hex ) |
|---|---|
| **PNU Name** | Automatic Stop |
| **PNU Format** | 8 bit unsigned |
| **PNU Note** | Binary value |

Automatically controls the soft stop to suit the application.
This feature is particularly useful with pumping applications

On : If the motor is lightly loaded it decelerates rapidly to the point where the soft stop becomes useful.

Off : The deceleration to the point where the soft stop becomes useful will be slower.

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

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| PNU Number | 20224 ( 4F00 hex ) |
|---|---|
| **PNU Name** | Auto Smooth Stop |
| **PNU Format** | 8 bit unsigned |
| **PNU Note** | Binary value |

Automatically controls the soft stop to eliminate oscillations that can occur towards the end of the ramp

On : The soft stop is adjusted when oscillations are detected. Refer to "Auto smoothing Level"

Off : The soft stop is unadjusted and torque fluctuations may cause instability. This can often occur in pumping applications

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

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| PNU Number | 20352 ( 4F80 hex ) |
|---|---|
| **PNU Name** | Automatic Ramp |
| **PNU Format** | 8 bit unsigned |
| **PNU Note** | Binary value |

Automatically controls the torque applied to the motor during the soft start.

On : The torque is adjusted to suit the load.

Off:  The ramp time depends on the "Start Time" and "Current Limit"

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

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| PNU Number | 20416 ( 4FC0 hex ) |
|---|---|
| **PNU Name** | Automatic End Stop |
| **PNU Format** | 8 bit unsigned |
| **PNU Note** | Binary value |

Automatically controls the "Stop Time"

On : The ramp time is shortened if the motor reaches a very low speed before the end of the "Stop Time"

Off:  The ramp time " depends on the "Stop Time" and "Current Limit"

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

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| PNU Number | 20480 ( 5000 hex ) |
|---|---|
| **PNU Name** | Automatic Impact Load |
| **PNU Format** | 8 bit unsigned |
| **PNU Note** | Binary value |

Automatically controls the maximum iERS saving level.

On : The maximum iERS saving level ("BackStop" ) is reset to maximum during each load cycle.

Off :  The saving potential may be reduced on applications with heavy load cycles. Such as injection moulding machines.

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

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400  SGY2070000  SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,  i-rated = synergy Class20 / Class30 current,  i-motor = motor current |

| PNU Number | 20608 ( 5080 hex ) |
|---|---|
| PNU Name | Automatic Stop Profile |
| PNU Format | 16 bit unsigned |
| PNU Note | Linear Scaling ( 1 = 0.006104 % ) |

Adjusts the response of the "Automatic Stop"

Increase if the motor speed doesn't drop quickly enough.

When the value is set to zero the "Automatic Stop" is effectively disabled

| Range | 0 ( 0 hex ) 0% - 16384 ( 4000 hex ) 100% | Default | 8192 ( 2000 hex ) 50% | Type | Read/Write |
|---|---|---|---|---|---|

| 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 |
|---|---|---|---|---|---|

| SWI-SGY-USB-V05700 | Description |
|---|---|
| **[ SGY1051400  SGY2070000  SGY3023400 ]** | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,  i-rated = synergy Class20 / Class30 current,  i-motor = motor current |

| 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 |
|---|---|---|---|---|---|---|---|

| PNU Number | 21760 ( 5500 hex ) |
|---|---|
| **PNU Name** | Ref PF Degrees |
| **PNU Format** | 16 bit unsigned |
| **PNU Note** | Linear Scaling (1 = 1° of mains cycle)<br>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)<br>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)<br>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)<br>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 |
|---|---|---|---|---|---|---|---|

| SWI-SGY-USB-V05700<br>[ SGY1051400  SGY2070000  SGY3023400 ] | Description<br>Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,  i-rated = synergy Class20 / Class30 current,  i-motor = motor current |
|---|---|

| PNU Number | 23040 ( 5A00 hex ) |
|---|---|
| PNU Name | BackStop |
| PNU Format | 16 bit unsigned |
| PNU Note | Linear Scaling (1 = 1° of mains cycle)<br>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 |
|---|---|---|---|---|---|

| PNU Number | 25600 ( 6400 hex ) |
|---|---|
| PNU Name | i-rated |
| PNU Format | 32 bit unsigned |
| PNU Note | Linear Scaling (1 = 1mA)<br>Current (A) = (Value / 1000) |

Unit Class20 / Class30 Current Rating

| Range | 17000 ( 4268 hex )  17A  -  2000000 ( 1E8480 hex )  2000A | Default | 17000 ( 4268 hex )  17A | Type | Read Only |
|---|---|---|---|---|---|

| PNU Number | 25664 ( 6440 hex ) |
|---|---|
| PNU Name | Trip Class |
| PNU Format | 16 bit unsigned |
| PNU Note | 10= Trip Class 10, 20 = Trip Class 20, 30 = Trip Class 30 |

The trip class is a numeric value that correlates the trip time with overload level.
Select Trip class according to application requirements

The trip time depends on the selected Trip Class. The duration of the overload and the level of the over current.
Refer to the Motor Overload 'cold' trip curves given in the Quick Start Guide.

When "Class 20" or "Class30" are selected the Unit current rating (i-Unit) will be reduced to a lower value (i-rated).

| Range | 10 ( A hex )  Trip Class 10  -  30 ( 1E hex )  Trip Class 30 | Default | 10 ( A hex )  Trip Class 10 | Type | Read/Write |
|---|---|---|---|---|---|

| PNU Number | 25728 ( 6480 hex ) |
|---|---|
| PNU Name | Motor Current |
| PNU Format | 32 bit unsigned |
| PNU Note | Linear Scaling (1 = 1mA)<br>Current (A) = (Value / 1000) |

This should be set to the Full Load Current shown on the motor plate

The overload works with multiples of the set "Motor Current" (i-motor)

Also referred to as Motor FLA

| Range | ( 0.5 x PNU25600 )  50% I-ratedA  -  ( 1 x PNU25600 )  100% I-ratedA | Default | ( 1 x PNU25600 )  100% I-ratedA | Type | Read/Write |
|---|---|---|---|---|---|

| PNU Number | 25792 ( 64C0 hex ) |
|---|---|
| PNU Name | i-Synergy |
| PNU Format | 32 bit unsigned |
| PNU Note | Linear Scaling (1 = 1mA)<br>Current (A) = (Value / 1000) |

Unit Class10 Current Rating

| Range | 17000 ( 4268 hex )  17A  -  2000000 ( 1E8480 hex )  2000A | Default | 17000 ( 4268 hex )  17A | Type | Read Only |
|---|---|---|---|---|---|

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400  SGY2070000  SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |

| PNU Number | 26304 ( 66C0 hex ) |
|---|---|
| **PNU Name** | Low Current Trip Level |
| **PNU Format** | 16 bit unsigned |
| **PNU Note** | Linear Scaling (1 = 1mA)<br>Current (A) = (Value / 1000) |

The current in Amps that will cause a trip

A trip will occur if the motor current is less than the "Trip Level" for the "Trip Time"

| Range | 0.25 x PNU25728 )  25% I-motor  - ( 1 x PNU25728 )  100% I-motorA | Default | ( 0.25 x PNU25728 )  25% I-motorA | Type | Read/Write |

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| PNU Number | 26368 ( 6700 hex ) |
|---|---|
| **PNU Name** | Low Current Trip Time |
| **PNU Format** | 16 bit unsigned |
| **PNU Note** | Linear Scaling  ( 1 = 1 ms ) |

The trip time for the Low current trip

A trip will occur if the motor current is less than the "Trip Level" for the "Trip Time"

| Range | 100 ( 64 hex )  100ms  - 9000 ( 2328 hex )  9000ms | Default | 100 ( 64 hex )  100ms | Type | Read/Write |

---

| PNU Number | 26880 ( 6900 hex ) |
|---|---|
| **PNU Name** | Start Current Limit Level |
| **PNU Format** | 16 bit unsigned |
| **PNU Note** | Linear Scaling (1 = 1mA)<br>Current (A) = (Value / 1000) |

The current in Amps at which the soft Start ramp is held.

Normally set to 350% of motor FLC. Increase if motor fails to accelerate at required rate

The "Current Limit Level" will effect actual time to start. If set too low the motor may not accelerate to full speed.

| Range | 0.5 x PNU25728 )  50% I-motorA - ( 4.5 x PNU25792 )  450%  I-synergyA | Default | ( 3.5 x PNU25728 )  350% I-motorA | Type | Read/Write |

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| PNU Number | 26944 ( 6940 hex ) |
|---|---|
| **PNU Name** | Start Current Limit Time |
| **PNU Format** | 16 bit unsigned |
| **PNU Note** | Linear Scaling  ( 1 = 1 s ) |

The maximum time allowed for the current limit.

If the current limit is still active at the end of this period the Unit will either 'Trip' or 'continue'

| Range | 1 ( 1 hex )  1s  - 600 ( 258 hex )  600s | Default | 30 ( 1E hex )  30s | Type | Read/Write |

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| PNU Number | 27584 ( 6BC0 hex ) |
|---|---|
| **PNU Name** | Shearpin Trip Current |
| **PNU Format** | 16 bit unsigned |
| **PNU Note** | Linear Scaling (1 = 1mA)<br>Current (A) = (Value / 1000) |

The current in Amps that will cause a "Shearpin Trip"

A trip will occur if the motor current is greater than the "Trip Level" for the "Trip Time"

| Range | ( 1 x PNU25728 )  100% I-motorA - ( 4.5 x PNU25792 )  450%  I-synergyA | Default | 4.5 x PNU25792 )  450%  I-synergy | Type | Read/Write |

| SWI-SGY-USB-V05700<br>[ SGY1051400  SGY2070000  SGY3023400 ] | Description<br><small>Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current</small> |
|---|---|

| 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 |

| 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)<br>Current (A) = (Value / 1000) | **Range** 0.5 x PNU25728 ) 50% I-motorA  -  ( 4.5 x PNU25792 ) 125% I-motorA   **Default** 1.15 x PNU25728 ) 115% I-motorA   **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)<br>Current (A) = (Value / 1000) | **Range** ( 1 x PNU25728 ) 100% I-motorA  -  ( 4.5 x PNU25792 ) 450% I-synergyA   **Default** ( 3.5 x PNU25728 ) 350% I-motorA   **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)<br>Freq(Hz) = (Value / 1000) | **Range** 45000 ( AFC8 hex ) 45Hz  -  65000 ( FDE8 hex ) 65Hz   **Default** Not Applicable -Hz   **Type** Read Only |

| SWI-SGY-USB-V05700<br>[ SGY1051400  SGY2070000  SGY3023400 ] | Description<br>Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,  i-rated = synergy Class20 / Class30 current,  i-motor = motor current |
|---|---|

| PNU Number | 32064 ( 7D40 hex ) |
|---|---|
| PNU Name | Phase Rotation |
| PNU Format | 16 bit unsigned |
| PNU Note | Binary value |

Indicates the phase sequence of the incoming supply.

RYB = L1-L2-L3

RBY = L1-L3-L2

| Range | 0 ( 0 hex )  L1-L2-L3 - 1 ( 1 hex )  L1-L3-L2 | Default | 0 ( 0 hex )  L1-L2-L3 | Type | Read Only |
|---|---|---|---|---|---|

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| PNU Number | 32896 ( 8080 hex ) |
|---|---|
| PNU Name | Current Irms |
| PNU Format | 32 bit unsigned |
| PNU Note | Linear Scaling (1 = 1mA)<br>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 |
|---|---|---|---|---|---|

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| 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 |
|---|---|---|---|---|---|

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| 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 |
|---|---|---|---|---|---|

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| 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 |
|---|---|---|---|---|---|

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400  SGY2070000  SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,  i-rated = synergy Class20 / Class30 current,  i-motor = motor current |

| PNU Number | 33536 ( 8300 hex ) | | The RMS current on phase L1 | | | | | |
|---|---|---|---|---|---|---|---|---|
| PNU Name | I1 | | | | | | | |
| PNU Format | 32 bit unsigned | | | | | | | |
| PNU Note | Linear Scaling (1 = 1mA)<br>Current (A) = (Value / 1000) | Range | 0 ( 0 hex )  0A | - | 10000000 ( 989680 hex )  10000A | Default | 0 ( 0 hex )  0A | Type | Read Only |

| PNU Number | 33538 ( 8302 hex ) | | The RMS current on phase L2 | | | | | |
|---|---|---|---|---|---|---|---|---|
| PNU Name | I2 | | | | | | | |
| PNU Format | 32 bit unsigned | | | | | | | |
| PNU Note | Linear Scaling (1 = 1mA)<br>Current (A) = (Value / 1000) | Range | 0 ( 0 hex )  0A | - | 10000000 ( 989680 hex )  10000A | Default | 0 ( 0 hex )  0A | Type | Read Only |

| PNU Number | 33540 ( 8304 hex ) | | The RMS current on phase L3 | | | | | |
|---|---|---|---|---|---|---|---|---|
| PNU Name | I3 | | | | | | | |
| PNU Format | 32 bit unsigned | | | | | | | |
| PNU Note | Linear Scaling (1 = 1mA)<br>Current (A) = (Value / 1000) | Range | 0 ( 0 hex )  0A | - | 10000000 ( 989680 hex )  10000A | Default | 0 ( 0 hex )  0A | Type | Read Only |

| PNU Number | 34688 ( 8780 hex ) | | Total true power | | | | | |
|---|---|---|---|---|---|---|---|---|
| PNU Name | True Power P | | This is an addition of the 3 phases | | | | | |
| PNU Format | 32 bit unsigned | | | | | | | |
| PNU Note | Linear Scaling (1 = 1W)<br>True Power (KW) = (Value / 1000) | Range | 0 ( 0 hex )  0kW | - | 10000000 ( 989680 hex )  10000kW | Default | 0 ( 0 hex )  0kW | Type | Read Only |

| PNU Number | 34816 ( 8800 hex ) | | Total Apparent Power | | | | | |
|---|---|---|---|---|---|---|---|---|
| PNU Name | Apparent Power S | | This is an addition of the 3 phases | | | | | |
| PNU Format | 32 bit unsigned | | | | | | | |
| PNU Note | Linear Scaling (1 = 1VA)<br>Apparent Power (kVA) = (Value/1000) | Range | 0 ( 0 hex )  0kVA | - | 10000000 ( 989680 hex )  10000kVA | Default | 0 ( 0 hex )  0kVA | Type | Read Only |

| SWI-SGY-USB-V05700 [ SGY1051400  SGY2070000  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 | 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 |
|---|---|---|---|---|---|---|---|

| PNU Number | 35008 ( 88C0 hex ) |
|---|---|
| PNU Name | iERS Saving Level |
| PNU Format | 16 bit unsigned |
| PNU Note | Linear Scaling  ( 1 = 0.006104 % ) |

Indicates the level of potential saving

100% indicates that Unit is saving at its maximum level

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

| PNU Number | 35200 ( 8980 hex ) |
|---|---|
| PNU Name | Fixed Voltage |
| PNU Format | 16 bit unsigned |
| PNU Note | Linear Scaling  ( 1 = 1 V ) |

User settable voltage level for power calculations

If required can be used to improve accuracy of power calculations

| Range | 100 ( 64 hex )  100V | - | 500 ( 1F4 hex )  500V | Default | 500 ( 1F4 hex )  100V | Type | Read/Write |
|---|---|---|---|---|---|---|---|

| PNU Number | 35264 ( 89C0 hex ) |
|---|---|
| PNU Name | Fixed Voltage |
| PNU Format | 8 bit unsigned |
| PNU Note | Binary value |

Selects the source for the voltage value used in the power calculations.

on: KW KVar and KVA are calculated using the "Fixed Voltage"

off: KW KVar and KVA are calculated using the internally measured voltage.

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

| PNU Number | 35840 ( 8C00 hex ) |
|---|---|
| PNU Name | Number of Starts |
| PNU Format | 32 bit unsigned |
| PNU Note | Linear Scaling  ( 1 = 1 ) |

The total number of successful starts

| Range | 0 ( 0 hex )  0 | - | 4294967295 ( FFFFFFFF hex )  4294836224 | Default | 0 ( 0 hex )  0 | Type | Read Only |
|---|---|---|---|---|---|---|---|

| SWI-SGY-USB-V05700<br>[ SGY1051400   SGY2070000   SGY3023400 ] | Description<br>Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |
|---|---|

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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)<br>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]<br>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** | 37184 ( 9140 hex ) | STATUS INDICATION : Ready | | | | | | |
| **PNU Name** | Ready | On : Indicates that the Unit is healthy and ready for a start. Remains on when Running<br>Off : The Unit has not powered up successfully or failed to reset from a trip | | | | | | |
| **PNU Format** | 8 bit unsigned | To map to digital output refer to PNU11584-PNU11587 | | | | | | |
| **PNU Note** | Binary value | Range | 0 ( 0 hex )   Off    -    1 ( 1 hex )   On | Default | 0 ( 0 hex )   Off | Type | Read Only |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PNU Number** | 37248 ( 9180 hex ) | STATUS INDICATION : Enabled | | | | | | |
| **PNU Name** | Enabled | On : Indicates that the Unit is enabled and the motor is being controlled.   Remains on when Running<br>Off : The Unit has detected a fault and tripped | | | | | | |
| **PNU Format** | 8 bit unsigned | To map to digital output refer to PNU11584-PNU11587 | | | | | | |
| **PNU Note** | Binary value | Range | 0 ( 0 hex )   Off    -    1 ( 1 hex )   On | Default | 0 ( 0 hex )   Off | Type | Read Only |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PNU Number** | 37312 ( 91C0 hex ) | STATUS INDICATION : Error | | | | | | |
| **PNU Name** | Error | On : Indicates that the Unit has detected a fault and has shut down.<br>Off : The Unit is fault free | | | | | | |
| **PNU Format** | 8 bit unsigned | The fault must be cleared before a reset<br>To map to digital output refer to PNU11584-PNU11587 | | | | | | |
| **PNU Note** | Binary value | Range | 0 ( 0 hex )   Off    -    1 ( 1 hex )   On | Default | 0 ( 0 hex )   Off | Type | Read Only |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PNU Number** | 37632 ( 9300 hex ) | STATUS INDICATION : Running | | | | | | |
| **PNU Name** | Running | On : Indicates that the unit has been given a run command and the motor is being controlled.<br>Off : The Unit has detected a fault and tripped | | | | | | |
| **PNU Format** | 8 bit unsigned | To map to digital output refer to PNU11584-PNU11587 | | | | | | |
| **PNU Note** | Binary value | Range | 0 ( 0 hex )   Off    -    1 ( 1 hex )   On | Default | 0 ( 0 hex )   Off | Type | Read Only |

| SWI-SGY-USB-V05700<br>[ SGY1051400   SGY2070000   SGY3023400 ] | Description<br>Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |
|---|---|

| 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 |
|---|---|---|---|---|---|

| 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)<br>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)<br>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 |
|---|---|---|---|---|---|

| SWI-SGY-USB-V05700<br>[ SGY1051400   SGY2070000   SGY3023400 ] | Description<br>Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |
|---|---|

| PNU Number | 38404 ( 9604 hex ) | Displays the peak current of the last successful start -2 |
|---|---|---|
| PNU Name | Last peak start current -2 | |
| PNU Format | 32 bit unsigned | |
| PNU Note | Linear Scaling (1 = 1mA)<br>Current (A) = (Value / 1000) | Range   0 ( 0 hex ) 0A   -   10000000 ( 989680 hex ) 10000A   Default   0 ( 0 hex ) 0A   Type   Read Only |

| 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)<br>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)<br>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)<br>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)<br>Current (A) = (Value / 1000) | Range   0 ( 0 hex ) 0A   -   10000000 ( 989680 hex ) 10000A   Default   0 ( 0 hex ) 0A   Type   Read Only |

| SWI-SGY-USB-V05700<br>[ SGY1051400   SGY2070000   SGY3023400 ] | Description<br>Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |
|---|---|

| PNU Number | 38414 ( 960E hex ) |
|---|---|
| PNU Name | Last peak start current -7 |
| PNU Format | 32 bit unsigned |
| PNU Note | Linear Scaling (1 = 1mA)<br>Current (A) = (Value / 1000) |

Displays the peak current of the last successful start -7

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

| PNU Number | 38416 ( 9610 hex ) |
|---|---|
| PNU Name | Last peak start current -8 |
| PNU Format | 32 bit unsigned |
| PNU Note | Linear Scaling (1 = 1mA)<br>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)<br>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 Only |
|---|---|---|---|---|---|

| 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 Only |
|---|---|---|---|---|---|

| SWI-SGY-USB-V05700<br>[ SGY1051400  SGY2070000  SGY3023400 ] | Description<br>Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,  i-rated = synergy Class20 / Class30 current,  i-motor = motor current |
|---|---|

| PNU Number | 38470 ( 9646 hex ) | Displays the event time |
|---|---|---|
| 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) | Range | -hh:mm:ss | - | -hh:mm:ss | Default | GMT timehh:mm:ss | Type | Read Only |

| 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 Only |

| 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 Only |

| 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 Only |

| 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 Only |

| SWI-SGY-USB-V05700<br>[ SGY1051400   SGY2070000   SGY3023400 ] | Description<br>Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |
|---|---|

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 Only | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PNU Number** | 38488 ( 9658 hex ) | Displays the event time | | | | | | |
| **PNU Name** | Last peak start current / Last Temperature / Last Overload -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 Only | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PNU Number** | 38491 ( 965B hex ) | Displays the event time | | | | | | |
| **PNU Name** | Last peak start current / Last Temperature / Last Overload -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 Only | |

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

| SWI-SGY-USB-V05700<br>[ SGY1051400  SGY2070000  SGY3023400 ] | Description<br>Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |
|---|---|

| PNU Number | 39044 ( 9884 hex ) |
|---|---|
| PNU Name | Last peak stop current -2 |
| PNU Format | 32 bit unsigned |
| PNU Note | Linear Scaling (1 = 1mA)<br>Current (A) = (Value / 1000) |

Displays the peak current of the last successful stop -2

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

| PNU Number | 39046 ( 9886 hex ) |
|---|---|
| PNU Name | Last peak stop current -3 |
| PNU Format | 32 bit unsigned |
| PNU Note | Linear Scaling (1 = 1mA)<br>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)<br>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)<br>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)<br>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 |
|---|---|---|---|---|---|

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400　SGY2070000　SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,　i-rated = synergy Class20 / Class30 current,　i-motor = motor current |

| PNU Number | 39054 ( 988E hex ) | Displays the peak current of the last successful stop -7 |
|---|---|---|
| PNU Name | Last peak stop current -7 | |
| PNU Format | 32 bit unsigned | |
| PNU Note | Linear Scaling (1 = 1mA)<br>Current (A) = (Value / 1000) | Range  0 ( 0 hex )  0A  -  10000000 ( 989680 hex )  10000A  Default  0 ( 0 hex )  0A  Type  Read Only |

| 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)<br>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)<br>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<br>Days since 01/01/1984 (bytes1,0) | Range  -hh:mm:ss  -  -hh:mm:ss  Default  GMT timehh:mm:ss  Type  Read Only |

| 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<br>Days since 01/01/1984 (bytes1,0) | Range  -hh:mm:ss  -  -hh:mm:ss  Default  GMT timehh:mm:ss  Type  Read Only |

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400   SGY2070000   SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time" <br> i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |

| PNU Number | 39110 ( 98C6 hex ) |
|---|---|
| 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) |

Displays the event time

| Range | -hh:mm:ss - -hh:mm:ss | Default | GMT timehh:mm:ss | Type | Read Only |
|---|---|---|---|---|---|

| PNU Number | 39113 ( 98C9 hex ) |
|---|---|
| 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) |

Displays the event time

| Range | -hh:mm:ss - -hh:mm:ss | Default | GMT timehh:mm:ss | Type | Read Only |
|---|---|---|---|---|---|

| PNU Number | 39116 ( 98CC hex ) |
|---|---|
| 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) |

Displays the event time

| Range | -hh:mm:ss - -hh:mm:ss | Default | GMT timehh:mm:ss | Type | Read Only |
|---|---|---|---|---|---|

| PNU Number | 39119 ( 98CF hex ) |
|---|---|
| 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) |

Displays the event time

| Range | -hh:mm:ss - -hh:mm:ss | Default | GMT timehh:mm:ss | Type | Read Only |
|---|---|---|---|---|---|

| PNU Number | 39122 ( 98D2 hex ) |
|---|---|
| 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) |

Displays the event time

| Range | -hh:mm:ss - -hh:mm:ss | Default | GMT timehh:mm:ss | Type | Read Only |
|---|---|---|---|---|---|

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400  SGY2070000  SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,  i-rated = synergy Class20 / Class30 current,  i-motor = motor current |

| 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 Only |

| 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 Only |

| 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 Only |

| 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)<br>Ta >= 0   b12=0     Ta < 0  b12=1 | |
| PNU Note | bit12=0    [HighByte*16 + LowByte/16]<br>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)<br>Ta >= 0   b12=0     Ta < 0  b12=1 | |
| PNU Note | bit12=0    [HighByte*16 + LowByte/16]<br>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-V05700<br>[ SGY1051400  SGY2070000  SGY3023400 ] | Description<br>Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |
|---|---|

| 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)<br>Ta >= 0   b12=0     Ta < 0  b12=1 | | | | | | | |
| PNU Note | bit12=0   [HighByte*16 + LowByte/16]<br>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 | 39683 ( 9B03 hex ) | | Displays the heatsink temperature at the end of the last successful start-3 | | | | | |
|---|---|---|---|---|---|---|---|---|
| PNU Name | Last temperature -3 | | | | | | | |
| PNU Format | 16 bit  (Highbyte=b11-b8, LowByte=b7-b0)<br>Ta >= 0   b12=0     Ta < 0  b12=1 | | | | | | | |
| PNU Note | bit12=0   [HighByte*16 + LowByte/16]<br>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 | 39684 ( 9B04 hex ) | | Displays the heatsink temperature at the end of the last successful start-4 | | | | | |
|---|---|---|---|---|---|---|---|---|
| PNU Name | Last temperature -4 | | | | | | | |
| PNU Format | 16 bit  (Highbyte=b11-b8, LowByte=b7-b0)<br>Ta >= 0   b12=0     Ta < 0  b12=1 | | | | | | | |
| PNU Note | bit12=0   [HighByte*16 + LowByte/16]<br>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 | 39685 ( 9B05 hex ) | | Displays the heatsink temperature at the end of the last successful start-5 | | | | | |
|---|---|---|---|---|---|---|---|---|
| PNU Name | Last temperature -5 | | | | | | | |
| PNU Format | 16 bit  (Highbyte=b11-b8, LowByte=b7-b0)<br>Ta >= 0   b12=0     Ta < 0  b12=1 | | | | | | | |
| PNU Note | bit12=0   [HighByte*16 + LowByte/16]<br>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 | 39686 ( 9B06 hex ) | | Displays the heatsink temperature at the end of the last successful start-6 | | | | | |
|---|---|---|---|---|---|---|---|---|
| PNU Name | Last temperature -6 | | | | | | | |
| PNU Format | 16 bit  (Highbyte=b11-b8, LowByte=b7-b0)<br>Ta >= 0   b12=0     Ta < 0  b12=1 | | | | | | | |
| PNU Note | bit12=0   [HighByte*16 + LowByte/16]<br>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-V05700 | Description |
|---|---|
| [ SGY1051400  SGY2070000  SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,  i-rated = synergy Class20 / Class30 current,  i-motor = motor current |

| PNU Number | 39687 ( 9B07 hex ) | Displays the heatsink temperature at the end of the last successful start-7 |
|---|---|---|
| PNU Name | Last temperature -7 | |
| PNU Format | 16 bit  (Highbyte=b11-b8, LowByte=b7-b0)<br>Ta >= 0  b12=0    Ta < 0  b12=1 | |
| PNU Note | bit12=0   [HighByte*16 + LowByte/16]<br>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 | 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)<br>Ta >= 0  b12=0    Ta < 0  b12=1 | |
| PNU Note | bit12=0   [HighByte*16 + LowByte/16]<br>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)<br>Ta >= 0  b12=0    Ta < 0  b12=1 | |
| PNU Note | bit12=0   [HighByte*16 + LowByte/16]<br>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 |

| SWI-SGY-USB-V05700 [ SGY1051400  SGY2070000  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 | 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 |

| 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 |

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400  SGY2070000  SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,  i-rated = synergy Class20 / Class30 current,  i-motor = motor current |

| PNU Number | 40327 ( 9D87 hex ) |
|---|---|
| PNU Name | Last overload-7 |
| PNU Format | 16 bit unsigned |
| PNU Note | Linear Scaling  ( 1 = 0.006104 % ) |

Displays the overload level at the end of the last successful start -7

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

| 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 |
|---|---|---|---|---|---|---|---|

| SWI-SGY-USB-V05700 [ SGY1051400  SGY2070000  SGY3023400 ] | Description<br>Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,  i-rated = synergy Class20 / Class30 current,  i-motor = motor current |
|---|---|

| PNU Number | 53768 ( D208 hex ) | Detects if the internal temperature sensor has malfunctioned |
|---|---|---|
| PNU Name | Thermal Sensor Trip | On :  The Unit will trip if the internal temperature sensor malfunctions |
| PNU Format | 8 bit unsigned | Off :  The Unit will continue to operate even if the temperature sensor has malfunctioned.<br>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 Note | Binary value | | | | | | |

| 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. |

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

| 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. |

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

| 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.<br>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.<br>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 Note | Binary value | | | | | | |

| 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 |

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

| SWI-SGY-USB-V05700 | Description |
|---|---|
| **[ SGY1051400   SGY2070000   SGY3023400 ]** | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |

| | | |
|---|---|---|
| **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.<br>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** | 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.<br>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 |

| SWI-SGY-USB-V05700<br>[ SGY1051400  SGY2070000  SGY3023400 ] | Description<br>Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |
|---|---|

| PNU Number | 53791 ( D21F hex ) |
|---|---|
| PNU Name | Stop Current Limit Trip |
| PNU Format | 8 bit unsigned |
| PNU Note | Binary value |

Selects trip or continue if the stop current limit has been active for too long

On : The Unit will trip

Off:  The stop will continue regardless of the motor current level

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

| PNU Number | 53792 ( D220 hex ) |
|---|---|
| PNU Name | Overload Trip |
| PNU Format | 8 bit unsigned |
| PNU Note | Binary value |

The Unit has an "Overload" function that  is an electronic equivalent to a thermal overload.

On : The Unit will trip when the "Overload" capacity (ModbusPNU 33408) exceeds 100%

Off:  The Unit will continue to operate regardless of motor current level

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

| PNU Number | 53793 ( D221 hex ) |
|---|---|
| PNU Name | Shearpin Trip |
| PNU Format | 8 bit unsigned |
| PNU Note | Binary value |

The shearpin is an electronic equivalent of a mechanical shearpin

On : The Unit will trip. This feature is not active during soft start and soft stop.

Off:  The Unit will continue to operate regardless of motor current level

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

| PNU Number | 53794 ( D222 hex ) |
|---|---|
| PNU Name | PTC Motor Thermistor Trip |
| PNU Format | 8 bit unsigned |
| PNU Note | Binary value |

A single PTC motor thermistor or set of PTC motor thermistors can be connected to the PTC terminals.

On :The Unit will trip if the motor thermistor exceed its response temperature or the PTC input is open circuit

Off  : The Unit will continue to operate.

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

| PNU Number | 53795 ( D223 hex ) |
|---|---|
| PNU Name | External Trip |
| PNU Format | 8 bit unsigned |
| PNU Note | Binary value |

Allows a trip to be forced using one of the  digital inputs

On : Trips when the programmed input is active

Off : External Trip is disabled

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

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400  SGY2070000  SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |

| 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 |

| 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 |

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400　SGY2070000　SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time" <br> i-synergy = synergy Class 10 current,　i-rated = synergy Class20 / Class30 current,　i-motor = motor current |

| PNU Number | 53804 ( D22C hex ) |
|---|---|
| PNU Name | Remote Start Trip |
| PNU Format | 8 bit unsigned |
| PNU Note | Binary value |

For safety reasons the Unit will trip during some operations if the remote start signal is active

On : Trips if the remote start signal is active when the Unit is powered up or a reset is applied.

Off : The Unit will not trip and may start unexpectedly if the start signal is accidently left active.

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

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| PNU Number | 53807 ( D22F hex ) |
|---|---|
| PNU Name | L1-L3-L2 Trip |
| PNU Format | 8 bit unsigned |
| PNU Note | Binary value |

Determines if supply phase sequence is incorrect for motor rotation

On : Trips if the phase sequence is L1-L3-L2.

Off : The Unit will continue to operate normally

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

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| PNU Number | 53808 ( D230 hex ) |
|---|---|
| PNU Name | L1-L2-L3 Trip |
| PNU Format | 8 bit unsigned |
| PNU Note | Binary value |

Determines if supply phase sequence is incorrect for motor rotation

On : Trips if the phase sequence is L1-L2-L3.

Off : The Unit will continue to operate normally

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

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| PNU Number | 59392 ( E800 hex ) |
|---|---|
| PNU Name | Control Method |
| PNU Format | 16 bit unsigned |
| PNU Note | 0 = Local, 1 = User, 2 = TwoWire, <br> 3 = ThreeWire, 4 = Modbus |

Local Touch Screen : Control using the button on the keypad
User Programmable : Control using the terminals. Function defined in "I/O"  menu
Two Wire Control : Control using terminals. Functions fixed as shown on screen
Three Wire Control : Control using terminals. Functions fixed as shown on screen

Modbus Network : Control via remote Modbus network or remote Keypad or Modbus TCP

| Range | 0 ( 0 hex )  Local Touch Screen -　　4 ( 4 hex )　Modbus Network | Default | 0 ( 0 hex )  Local Touch Screen | Type | Read/Write |
|---|---|---|---|---|---|

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| PNU Number | 60608 ( ECC0 hex ) |
|---|---|
| PNU Name | Last Trip |
| PNU Format | 16 bit unsigned |
| PNU Note | Linear Scaling ( 1 =1 ) <br> See Trip Code Descriptions |

Displays the last Fault trip

| Range | 0 ( 0 hex )  0　　-　　65535 ( FFFF hex )  65535 | Default | 0 ( 0 hex )  0 | Type | Read Only |
|---|---|---|---|---|---|

| SWI-SGY-USB-V05700 | Description |
|---|---|
| **[ SGY1051400   SGY2070000   SGY3023400 ]** | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |

| **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 )<br>See Trip Code Descriptions | Range | 0 ( 0 hex )  0 | - | 65535 ( FFFF hex )  65535 | Default | 0 ( 0 hex )  0 | Type | Read Only |

| **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 )<br>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 )<br>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 )<br>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 )<br>See Trip Code Descriptions | Range | 0 ( 0 hex )  0 | - | 65535 ( FFFF hex )  65535 | Default | 0 ( 0 hex )  0 | Type | Read Only |

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400  SGY2070000  SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |

| 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 )<br>See Trip Code Descriptions | Range: 0 ( 0 hex ) 0  -  65535 ( FFFF hex ) 65535   Default: 0 ( 0 hex ) 0   Type: Read Only |

| 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 )<br>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 )<br>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 )<br>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<br>Days since 01/01/1984 (bytes1,0) | Range: -hh:mm:ss  -  -hh:mm:ss   Default: GMT timehh:mm:ss   Type: Read Only |

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400　SGY2070000　SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,　i-rated = synergy Class20 / Class30 current,　i-motor = motor current |

| 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 Only |

| 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 Only |

| 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 Only |

| 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 Only |

| 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 Only |

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400  SGY2070000  SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |

| 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 Only |

| 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 Only |

| 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 Only |

| 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 Only |

| 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 |

| SWI-SGY-USB-V05700<br>[ SGY1051400   SGY2070000   SGY3023400 ] | Description<br>Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |
|---|---|

| 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 |

| PNU Number | Trip Code Descriptions | Phase L1 missing at the instant of start up. |
|---|---|---|
| **PNU Name** | 101<br>Input Side Phase Loss | The L1 phase is either missing or at a very low level |
| **PNU Format** | | Check all incoming connections.<br>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<br>Input Side Phase Loss | The L2 phase is either missing or at a very low level |
| **PNU Format** | | Check all incoming connections.<br>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<br>Input Side Phase Loss | The L3 phase is either missing or at a very low level |
| **PNU Format** | | Check all incoming connections.<br>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<br>Input Side Phase Loss | L1   L2 or L3 phase are missing or at a very low level. |
| **PNU Format** | | Check all incoming connections.<br>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 |

| SWI-SGY-USB-V05700<br>[ SGY1051400  SGY2070000  SGY3023400 ] | Description<br>Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,  i-rated = synergy Class20 / Class30 current,  i-motor = motor current |
|---|---|

| PNU Number | Trip Code Descriptions |
|---|---|
| PNU Name | 201<br>Maximum Temp. Exceeded |
| PNU Format | |
| PNU Note | The Trip Number shown in PNU Name is a decimal value |

Internal heatsink temperature has exceeded 90°C

It is possible the Unit is operating outside specified limits.

Check enclosure ventilation and airflow around the Unit. If the unit trips immediately the internal temperature sensor could be faulty.

| Range | - | Default | | Type | Read Only |
|---|---|---|---|---|---|

| PNU Number | Trip Code Descriptions |
|---|---|
| PNU Name | 208<br>Thermal Sensor Trip |
| PNU Format | |
| PNU Note | The Trip Number shown in PNU Name is a decimal value |

Thermal sensor Failure

The internal temperature sensor has failed

Contact the supplier

| Range | - | Default | | Type | Read Only |
|---|---|---|---|---|---|

| PNU Number | Trip Code Descriptions |
|---|---|
| PNU Name | 301-308<br>Thyristor Firing Trip |
| PNU Format | |
| PNU Note | The Trip Number shown in PNU Name is a decimal value |

One or more of the internal control thyristors (SCRs) have failed to turn on properly. (In-Line "Firing Mode")

The Unit has detected that the SCRs are not operating as expected.

Check all incoming and outgoing connections.

| Range | - | Default | | Type | Read Only |
|---|---|---|---|---|---|

| PNU Number | Trip Code Descriptions |
|---|---|
| PNU Name | 350-358<br>Thyristor Firing Trip |
| PNU Format | |
| PNU Note | The Trip Number shown in PNU Name is a decimal value |

One or more of the internal control thyristors (SCRs) have failed to turn on properly. (Delta "Firing Mode")

The Unit has detected that the SCRs are not operating as expected.

Check all incoming and outgoing connections.

| Range | - | Default | | Type | Read Only |
|---|---|---|---|---|---|

| PNU Number | Trip Code Descriptions |
|---|---|
| PNU Name | 401<br>Motor Side Phase Loss |
| PNU Format | |
| PNU Note | The Trip Number shown in PNU Name is a decimal value |

One or all of the phases are missing on the motor side during the instant of start up

T1 T2 or T3 phase are missing or at a very low level.

Check that the motor is connected to T1 T2 and T3. Ensure any disconnecting device between the Unit and the motor is closed at the instant of start up.

| Range | - | Default | | Type | Read Only |
|---|---|---|---|---|---|

| SWI-SGY-USB-V05700 | Description |
|---|---|
| **[ SGY1051400   SGY2070000   SGY3023400 ]** | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |

| 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<br>Motor Side Phase Loss | T1 T2 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 |

| PNU Number | Trip Code Descriptions | The internal control supply of the Unit level has fallen to a low level |
|---|---|---|
| **PNU Name** | 601<br>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<br>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<br>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<br>Short Circuit Thyristor | The Unit has detected that the SCRs are not operating as expected. |
| **PNU Format** | | ISOLATE SUPPLY.<br>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 |

| SWI-SGY-USB-V05700<br>[ SGY1051400   SGY2070000   SGY3023400 ] | | Description<br>Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |
|---|---|---|

| PNU Number | Trip Code Descriptions | The motor current has been lower than the low trip level for the low trip time |
|---|---|---|
| PNU Name | 1101<br>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 |

| PNU Number | Trip Code Descriptions | The motor has been held in current limit longer than the "Start current limit Time" |
|---|---|---|
| PNU Name | 1201<br>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<br>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<br>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<br>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 |

| SWI-SGY-USB-V05700 | Description |
|---|---|
| [ SGY1051400  SGY2070000  SGY3023400 ] | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,   i-rated = synergy Class20 / Class30 current,   i-motor = motor current |

| PNU Number | Trip Code Descriptions | The motor current has been higher than the "Shearpin Trip Level" for the trip time. |
|---|---|---|
| PNU Name | 1401<br>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 |

| PNU Number | Trip Code Descriptions | The PTC thermistor value has exceed the trip level. |
|---|---|---|
| PNU Name | 1501<br>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<br>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<br>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<br>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 |

| SWI-SGY-USB-V05700 [ SGY1051400  SGY2070000  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 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 |

| 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 |

| SWI-SGY-USB-V05700 | Description |
|---|---|
| **[ SGY1051400　SGY2070000　SGY3023400 ]** | Text in quotes refer to a Synergy parameter or function, for example "Start Time"<br>i-synergy = synergy Class 10 current,　i-rated = synergy Class20 / Class30 current,　i-motor = motor current |

| PNU Number | Trip Code Descriptions | Current sensor failure |
|---|---|---|
| **PNU Name** | 2301-2303<br>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.<br>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 |

| PNU Number | Trip Code Descriptions | Fail Safe operation |
|---|---|---|
| **PNU Name** | 2401-2499<br>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 or keypad or the bus command depending on the control method set.<br>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<br>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 or keypad or the bus command depending on the control method set.<br>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<br>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 or keypad or the bus command depending on the control method set.<br>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 |