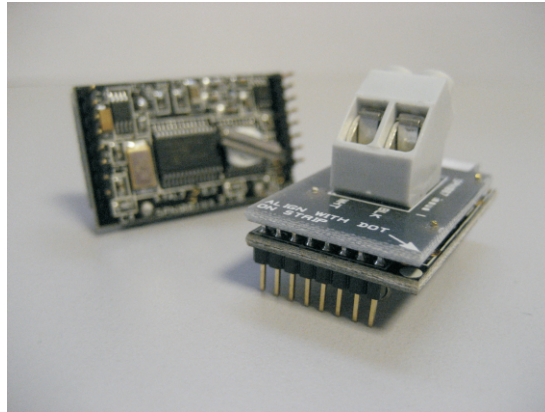
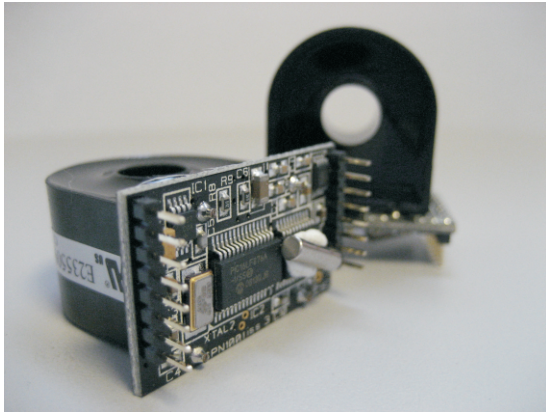




Single Phase Node

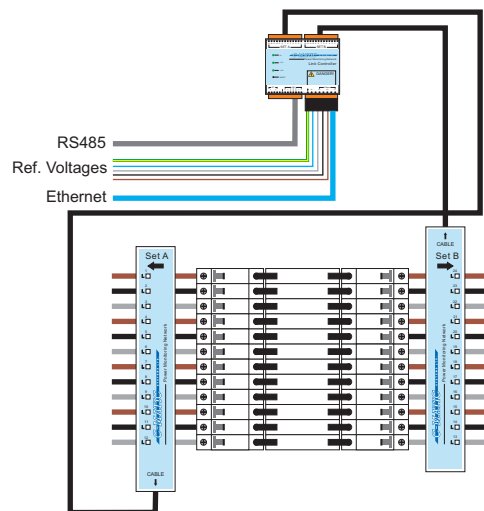


Single Phase Node (SPN) Technology from C-Matic Systems provides you with accurate, flexible, modular, scalable final circuit monitoring ideally suited for use in data centres where total understanding of your energy use is essential.

Accuracy

At the heart of the system is the **NODE**, the fundamental energy metering device. Each node is capable of measuring RMS Voltage (live – neutral) (Volts), RMS Current (Amps), Power Factor (%), Apparent Power (kVA), Active Power (kW), Reactive Power (kVAR), Apparent Energy (kVAh), Active Energy (kWh) and Reactive Energy (kVARh).

Each node is capable of delivering Class 1 energy measurement calculated from RMS voltages from 20-297 Volts and RMS Currents from as low as 100mA up to 63A.

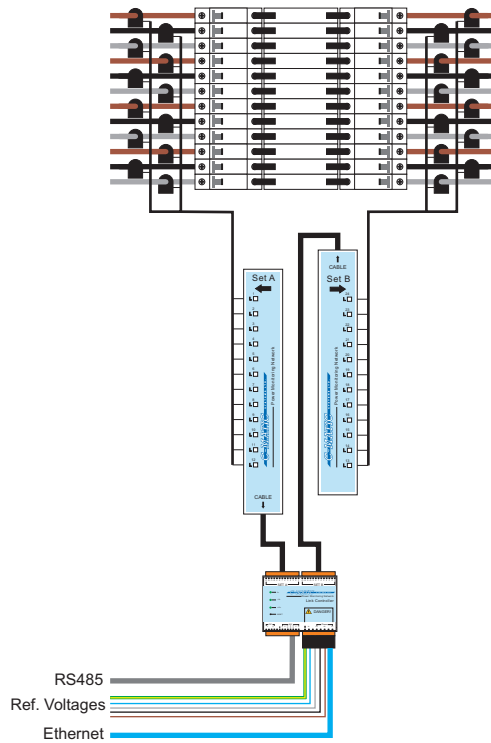


Flexibility

SPN Technology covers a range of products to suit the unique requirements of your installation.

For installation within a Power Distribution Unit (PDU) C-Matic Systems offer the **SOLID CT SPN**. Individual nodes are mounted within a **CARRIER STRIP** that is designed to be mounted adjacent to the pan assembly. Two such carrier strips are typically fitted to the pan assembly and connected back to an **INTELLIGENT LINK CONTROLLER (ILC)**. The ILC provides an interface between each node and the rest of your energy management infrastructure and supports the following communication protocols; Modbus RTU (RS485), Modbus TCP, HTTP (Web Interface) and SNMP.





If final circuit monitoring is required within each data cabinet instead of in the power distribution unit then C-Matic Systems offer the **REMOTE POWER METER (RPM)**. One or more RPMs can be mounted within each data cabinet to monitor incoming electrical feeds.

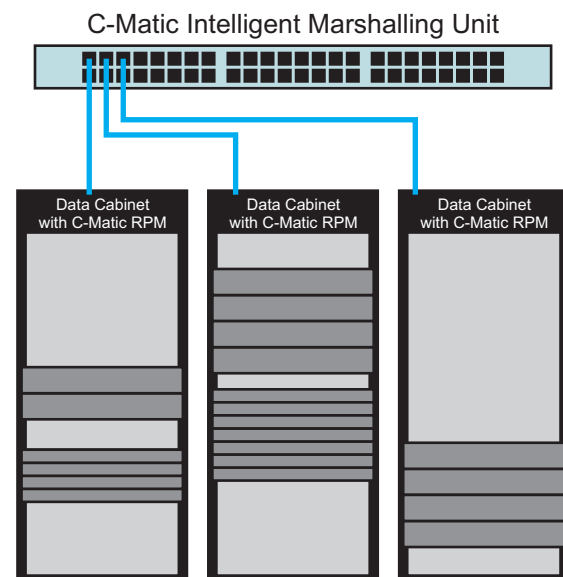


In situations where it is not possible to mount the carrier strip adjacent to the pan assembly C-Matic Systems offer the **SPLIT CT SPN**. This solution is particularly suited to enhancing existing PDUs with final circuit monitoring. The carrier strips containing the nodes can be mounted along with the intelligent link controller at a convenient location. Each node uses a remote split core CT that can be attached to the circuit of interest.

Each RPM is then connected via a standard CAT5e cable to a 1U rack mounted **INTELLIGENT MARSHALLING UNIT (IMU)**, which like the ILC provides an interface to the rest of your energy management infrastructure via a serial and/or TCP/IP network.



Coming Soon...
For improved integration and easier installation C-Matic Systems have developed the **Intelligent Carrier Controller (ICC)**. The ICC takes all of the features of the intelligent link controller and integrates them with the carrier strip installed along side the pan assembly within the PDU. The ICC is connected using CAT5e cable to a Power Over Ethernet (PoE) capable router to provide seamless integration with the rest of your energy management systems.



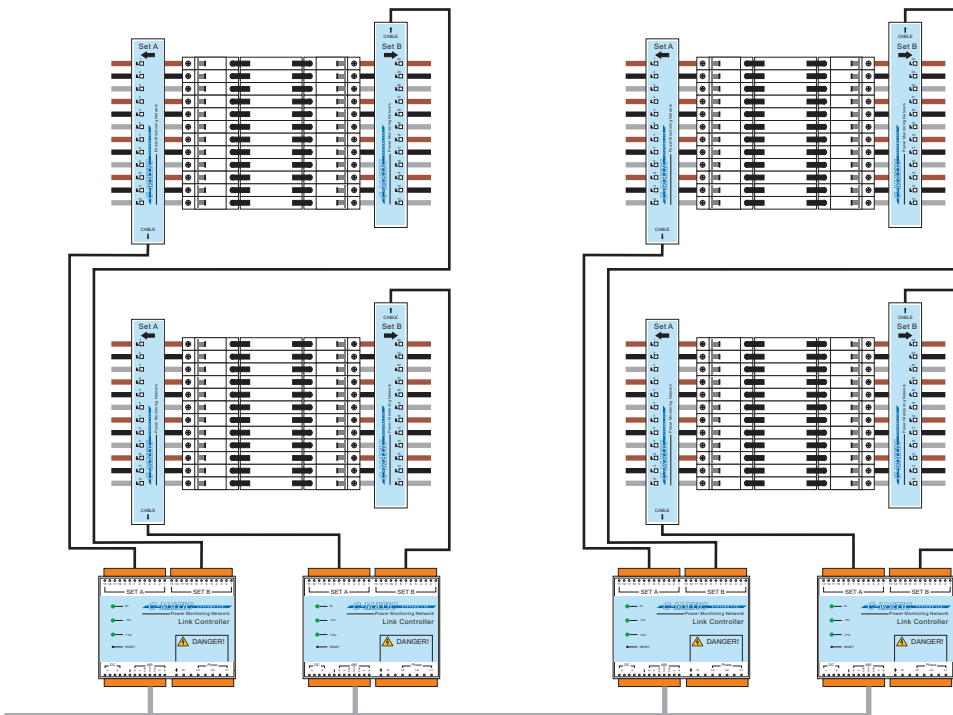


Modular and Scalable

To cater for different pan assembly sizes C-Matic Systems offer carrier strips in the following lengths; 12 nodes, 18 nodes, 21 nodes, 24 nodes and 27 nodes. For installations that require sizes not listed here then we can offer carrier strips with empty locations, for example a 9 way carrier can be achieved with a 12 way carrier with 3 locations linked out.

Carrier strips can also be configured to suit pan assemblies with non-standard layouts for example when auxiliary contacts are used.

For PDUs with larger or multiple pan assemblies it is possible to fit several standard intelligent link controllers and carrier strip sets to meet your requirements.



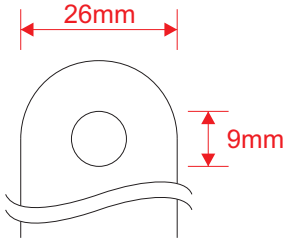
Note: Each Intelligent link controller and Intelligent Marshalling Unit can be interfaced to a maximum of 48 nodes.



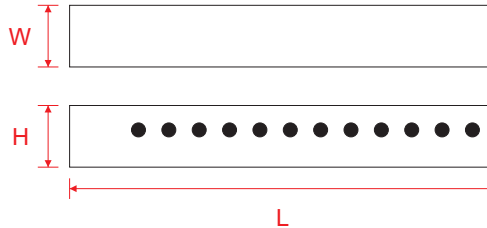
Technical Data

Solid CT Node	
Dynamic Range	
RMS Voltage	20V – 297V
RMS Current	100mA – 63A
Accuracy	
Vrms	< 0.5% error over dynamic range
Irms	< 0.5% error over dynamic range
Apparent Power and Energy (kVA and kVAh)	< 1.0% error over dynamic range
Active Power and Energy (kW and kWh)	< 1.0% error over dynamic range (Class 1)
Reactive Power and Energy (kVAR and kVAh)	< 1.0% error over dynamic range (Class 2)
Absolute Maximum Ratings (after which damage will occur)	
RMS Voltage	329V
RMS Current	374A

Solid CT Dimensions

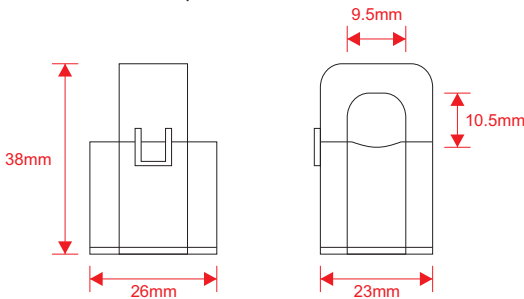


Carrier Strip	
Dimensions	
Width	50mm
Height	50mm
Length	
- 12 way	295.5mm
- 18 way	403.5mm
- 21 way	457.5mm
- 24 way	511.5mm
- 27 way	565.5mm
Weight (for one carrier strip)	
- 12 way	0.60kg
- 18 way	0.86kg
- 21 way	1.05kg
- 24 way	1.20kg
- 27 way	1.34kg

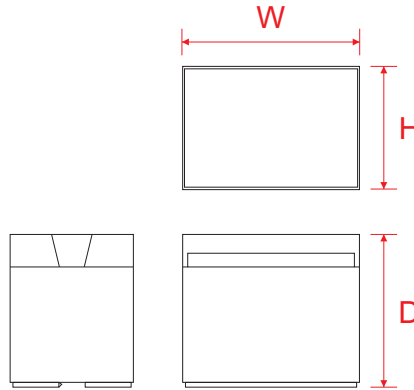


Split CT Node	
Dynamic Range	
RMS Voltage	20V – 297V
RMS Current	100mA – 76A
Accuracy	
Vrms	< 0.5% error over dynamic range
Irms	< 0.5% error over dynamic range
Apparent Power and Energy (kVA and kVAh)	< 1.0% error over dynamic range
Active Power and Energy (kW and kWh)	< 1.0% error over dynamic range (Class 1)
Reactive Power and Energy (kVAR and kVAh)	< 1.0% error over dynamic range (Class 2)
Absolute Maximum Ratings (after which damage will occur)	
RMS Voltage	329V
RMS Current	346V
CT Cable Length	
Standard	1.8m
Maximum	3.0m

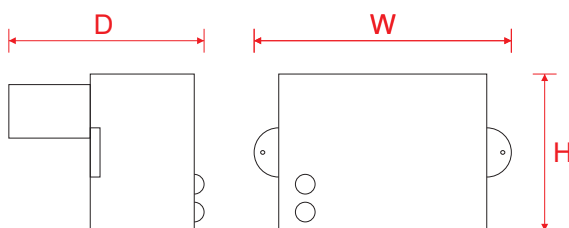
Split CT Dimensions



Intelligent Link Controller	
Power Supply	
Voltage	24 – 26VDC
Current	1A
AC Reference Inputs	
Voltage	20 – 300V, 50 – 60Hz
Communications	
Ethernet	10 Base T
Serial (RS485)	Isolated, 19200 Baud, 8 data bits, No Parity bit, 1 stop bit.
ILC to Carrier Cable Length	
Standard	3.0m
Maximum	5.0m
Dimensions	
Width	109.5mm
Height	75.0mm
Depth	100.0mm
Mounting	Standard 35mm DIN rail



Remote Power Meter	
Dynamic Range	
RMS Voltage	20V – 297V, 50 – 60Hz
RMS Current	100mA – 63A
Accuracy	
Vrms	< 0.5% error over dynamic range
Irms	< 0.5% error over dynamic range
Apparent Power and Energy (kVA and kVAh)	< 1.0% error over dynamic range
Active Power and Energy (kW and kWh)	< 1.0% error over dynamic range (Class 1)
Reactive Power and Energy (kVAR and kVAh)	< 1.0% error over dynamic range (Class 2)
Absolute Maximum Ratings (after which damage will occur)	
RMS Voltage	329V
RMS Current	374A
Dimensions	
Width	75mm
Height	42mm
Depth (mm)	54mm



Intelligent Marshalling Unit	
Power Supply	
Voltage	100 – 240VAC, 50 – 60Hz
Current	2.2A
Communications	
Ethernet	10 Base T
Serial (RS485)	Isolated, 19200 Baud, 8 data bits, No Parity bit, 1 stop bit.
IMU to RPM CAT5e Cable Length	
Maximum	20m
Dimensions	
Width	482.6mm (Standard 19 inch rack mount)
Height	44.5mm (Standard 1U)
Depth	338mm

