



DataStream Installation Guide

DataStream 800 Series

SYN-PDS-0003C

Author: Richard Laxton
Date: 18-Jun-2009

Revision List

| Rev | Date | Author | Review | Comments |
|-----|-----------|--------|--------|--|
| A | 08-Jan-09 | RL | SW | Initial Draft |
| B | 28-Feb-09 | RL | SW | Username/password added |
| C | 18-Jun-09 | DN | SW | Few updates following firmware changes |

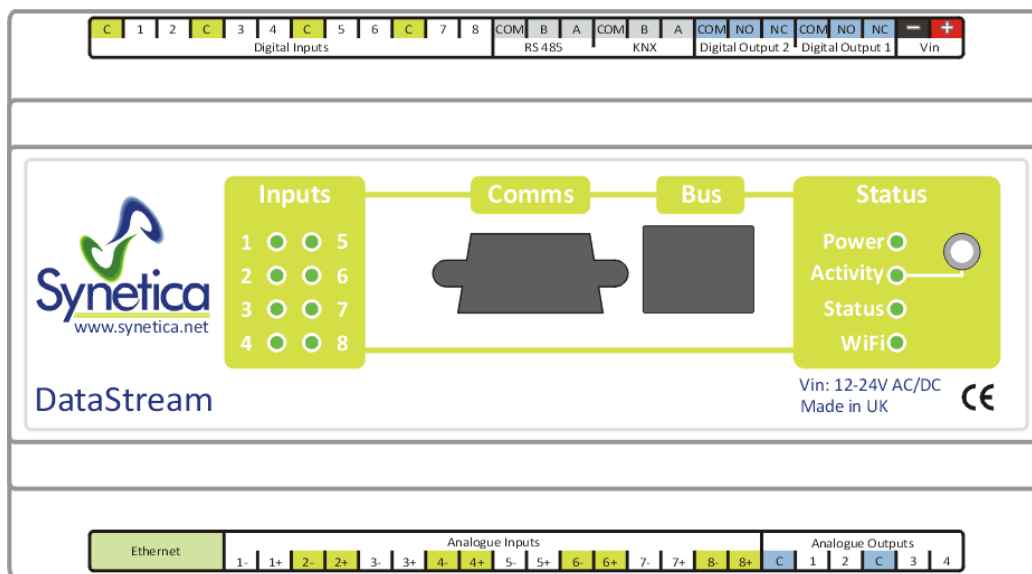
Description

The Energy DataStream is an Internet connected device for the collection, storage and transmission of meter data for energy management and environmental monitoring.

Powered by a high speed ARM® processor the Energy DataStream has the capacity to acquire, process, record, present and stream data from multiple energy meters, sensors and networked devices.

The DataStream has meter pulse inputs for direct connection to energy meters and analogue inputs for use with the LEM range of AC Current Transformers. A Modbus serial port enables communication with additional meters, Building Management Systems, PLCs and other networkable devices.

Energy consumption is recorded at selectable intervals, typically ½ hourly. This data is stored on the DataStream and automatically sent to a central server, such as a Monitoring and Targeting package or a spreadsheet such as Microsoft® Excel® for further analysis.



Specifications

Mechanical

| | |
|------------------|--------------------------------------|
| Dimensions | 157mm x 86mm x 58mm |
| Weight | 0.5Kg |
| Mounting..... | symmetrical DIN rail |
| Connectors..... | 5.08mm pitch, 2.5mm ² CSA |

Electrical

| | |
|--------------------|-----------------------------|
| Power Supply | 12-24Vac/dc ±10% |
| Consumption..... | <5W (typical) |
| Fuse | 500mA resettable (internal) |

Input/Output Connections

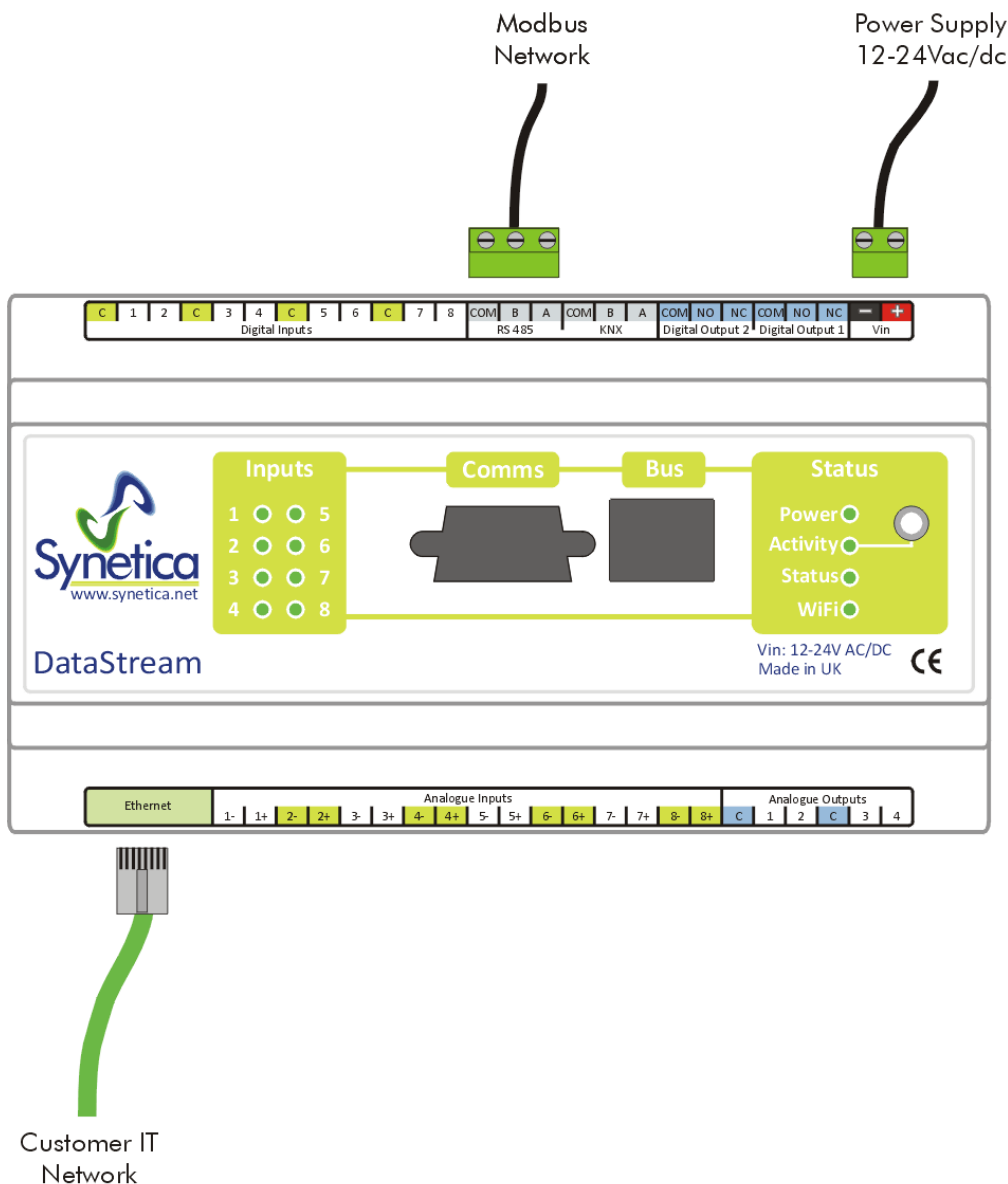
| | |
|--------------------------|--|
| Digital Inputs | 8 x 50 volt-free contact or open collector |
| Digital Outputs** | 2 x change-over relays |
| Analogue Inputs* | 8 x 0-10V _{dc} (non-isolated) |
| Analogue Outputs** | 4 x 0-10V _{dc} (non-isolated) |

*The analogue inputs are optimised for use with the LEM AT-B10 range of AC Current transducers

**The analogue and digital outputs are not available for customer use in the DS800

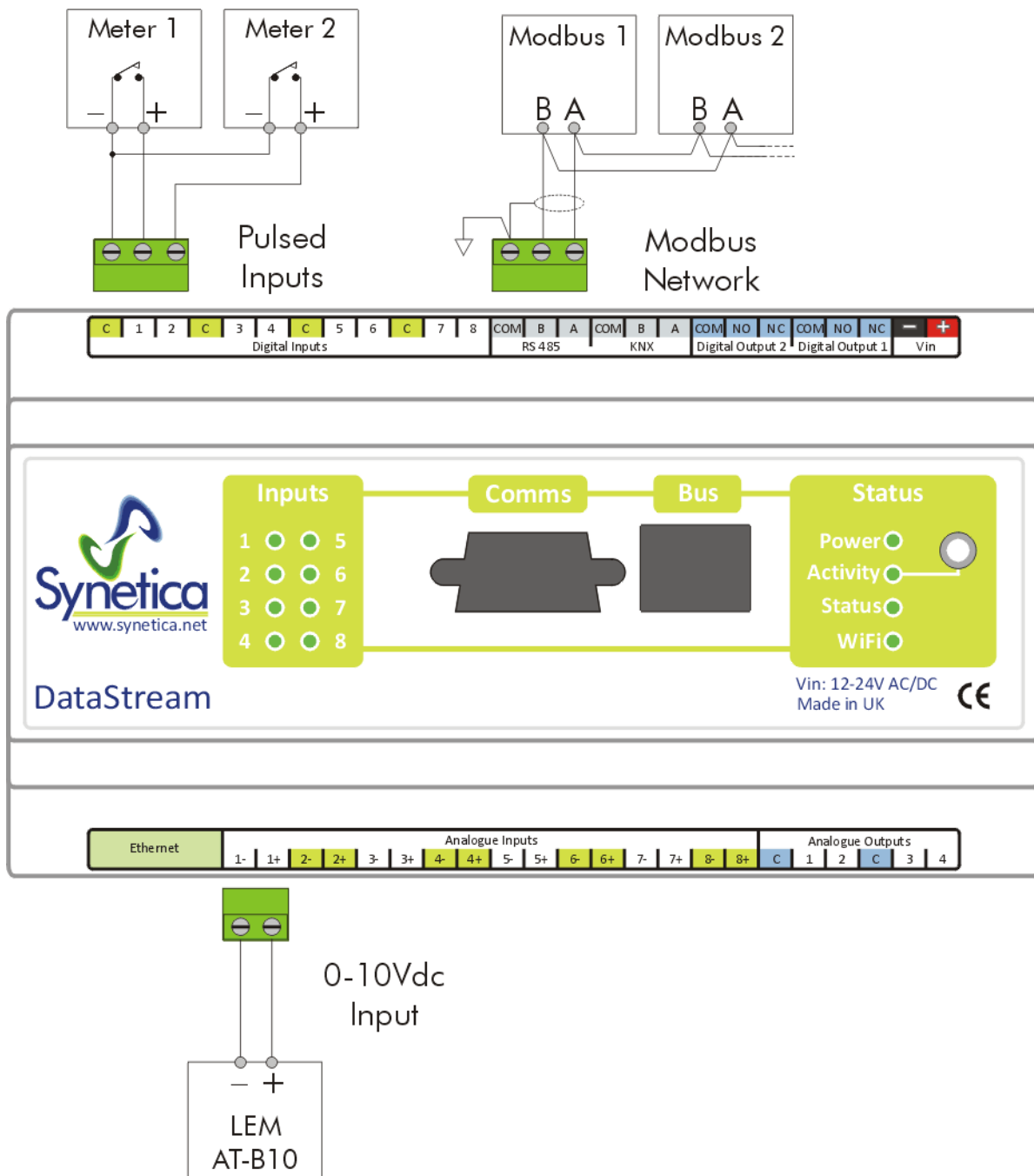
Installation Procedure

1. Using a standard cable (RJ45 plugs), connect the DataStream to the Ethernet network.
2. Connect the field devices to the DataStream IO terminals, such as a Modbus network or pulse meters, as described in the *Field Connections* section.
3. Connect a suitable power supply to the V_{in} terminals.
4. Check the following:
 - The green Power LED illuminates, indicating power supply connected
 - The Input LEDs perform a start-up routine indicating the DataStream processor is initialising, after which they will remain off
 - The Status/EnOcean LED flashes periodically to indicate the DataStream is operational
5. Configure the DataStream, as described in the *DataStream Configuration Guide* (See www.synetica.net/datastream.htm)
6. Each time a pulse is detected at a digital input, the corresponding Input LED will flash.



Do not connect anything to the Comms or Bus ports on the front panel.

Field Connections



The Modbus network should be connected according to the remote device manufacturer's guidelines. The COM terminal at the DataStream is not internally connected and is only intended to facilitate the connection of a suitable ground to the network cable shield. No termination resistor is installed in the DataStream.

Communications

Ethernet

The DataStream is fitted with an Ethernet port for connecting to the customers IT network. The port is used for the transfer of logged data from the DataStream to a remote location. Typically, the logged data is transferred by E-mail or via File Transfer Protocol (FTP) to a specified destination. For further information please see the *DataStream Configuration Guide*.

Speed..... 10/100Mbps
ConnectorRJ45
Protocol Support HTTP, FTP, SMTP, SNTP

RS485

A serial bus connection is available for the connection of RS485/Modbus devices, such as Electricity Meters or Variable Speed Drives.

Speed..... selectable up to 38400 bps
Mode 2-wire, half-duplex
Protocol Support ModBus
Connector 3-way, 5.08mm pitch, 2.5mm² CSA

RS232

A serial terminal is available for low-level configuration and diagnostic purposes. This is not usually needed but can be used in case of problems with the Ethernet connection e.g. unknown IP address.

Speed..... 115200 bps
Mode 8bits, no parity, 1 stop bit, hardware handshake
Connector 9-way female D-type
Cable..... null modem

Default Settings

IP Address 192.168.1.254
IP Address 255.255.255.0
Gateway..... 192.168.1.1
Primary DNS..... 0.0.0.0
Secondary DNS 0.0.0.0
Use DHCP if available..... No
Log Interval 30 minutes
Send Interval 30 minutes
Username root
Password..... password

Synetica Ltd
18 Cameron Wharf
Stone, Staffordshire
ST15 8JX
United Kingdom

www.synetica.net