

Communication Port Configuration

Unless reconfigured in-factory by SBS, Modbus Duo Translators will have the following default configuration:

Modbus RTU Port (RS485):

Wiring Mode: 2-Wire (Fixed on Modbus Duo)
 Baud, Parity, Stop Bits: 9600bps, None, 1

EDMI CMD Line Port (RS485):

Wiring Mode: 2-Wire (Fixed on Modbus Duo)
 Baud, Parity, Stop Bits: 9600bps, None, 1

Meter Port (RS232):

Baud, Parity, Stop Bits: 9600bps, None, 1

Modbus RTU Communication

Modbus registers are accessed via **Read-Holding-Register (03)** requests. Other requests including diagnostics aren't supported. Units respond to unsupported requests with an error(unsupported) packet containing no payload/comment. The **Modbus ID** will either be printed on your Modbus device or otherwise be set to "Auto" mode whereby the Modbus ID will automatically be set to the **last 2 digits of the connected Meter's Serial Number** (or 100 in the special case where the Meter Serial ends in 00).

The register address space is divided into 3 internal update priority levels (High, Medium, Low) where internal update rates of each section can be controlled via the priority settings. All priority levels include both some default meter registers and some scriptable slots. Scriptable slots can be configured to any EDMl Meter Register except File-based access data (ie Load Survey Data isn't supported). Scripts can be configured in factory by SBS.

Note that HP and MP script registers allocate 4 Bytes (32bits) for each result. LP script registers allocate 20 Bytes and LPX script registers allocate 400 Bytes. Registers with results larger than these internal memory limits are truncated to fit.

Wiring Diagrams

RS485 Port 1 and Port 2		
Pin	Cat5 (568A) Colour	Function
1	Green	V+
2	Green	NC
3	Orange/White	D+ (Modbus)
4	Blue	GND
5	Blue/White	NC
6	Orange	D- (Modbus)
7	Orange/White	D- (CMDLine)
8	Brown	D+ (CMDLine)

RS232 Port		
Pin	Cat5 (568A) Colour	Function
1	Green	V+
2	Green	NC
3	Orange/White	NC
4	Blue	GND
5	Blue/White	EDMI MODEM RX
6	Orange	EDMI MODEM TX
7	Orange/White	EDMI SCADA RX
8	Brown	EDMI SCADA TX

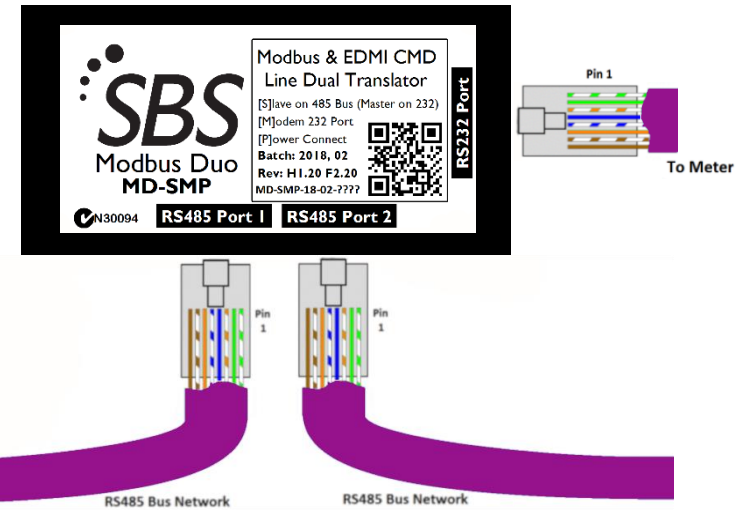


Fig 1. SBS Modbus Duo Translator Wiring Diagram

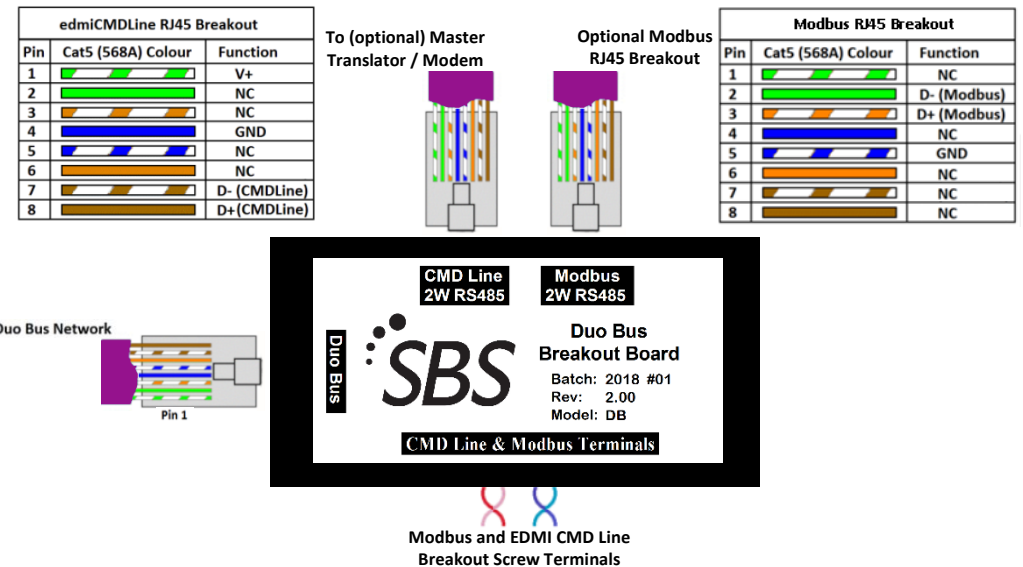
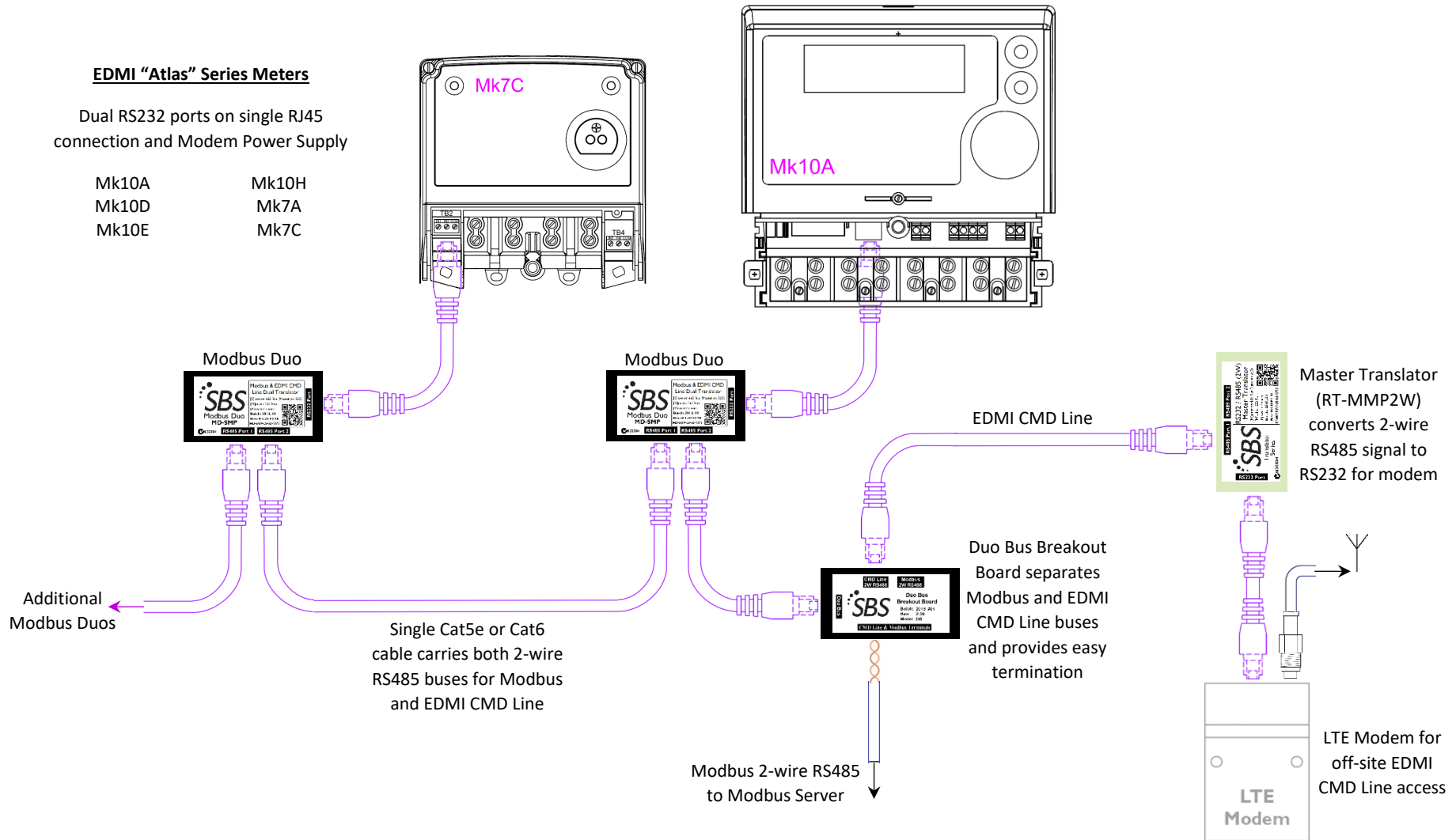


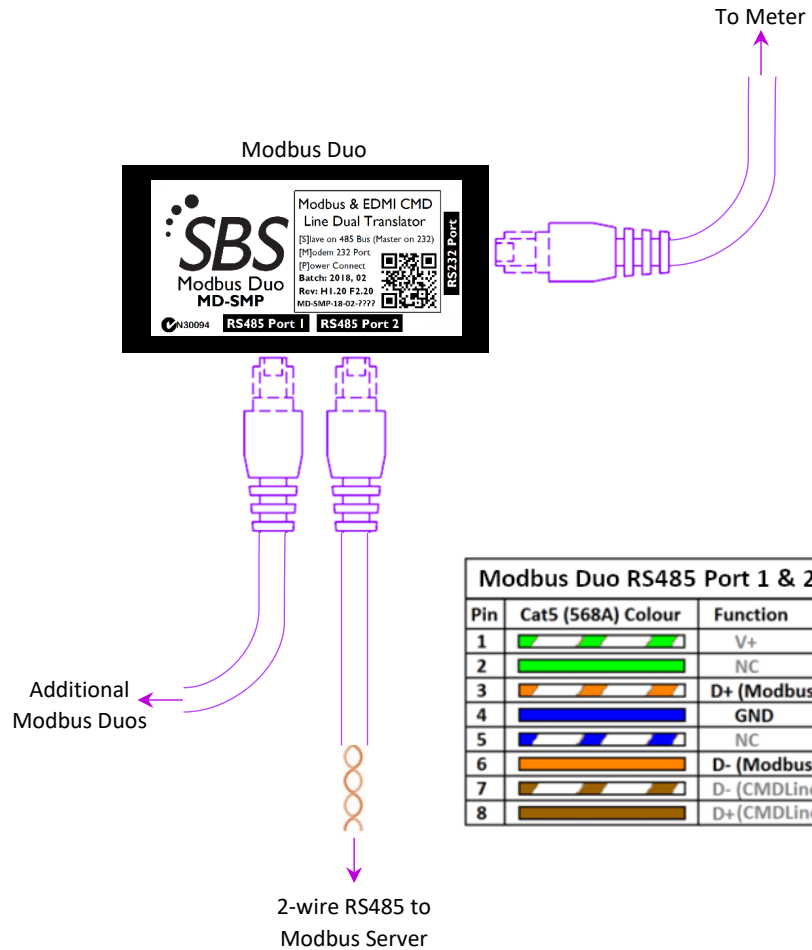
Fig 2. Optional SBS Translator Duo Breakout Board Wiring Diagram

Network Example 1: Typical Dual Modbus and EDMI CMD Line Network



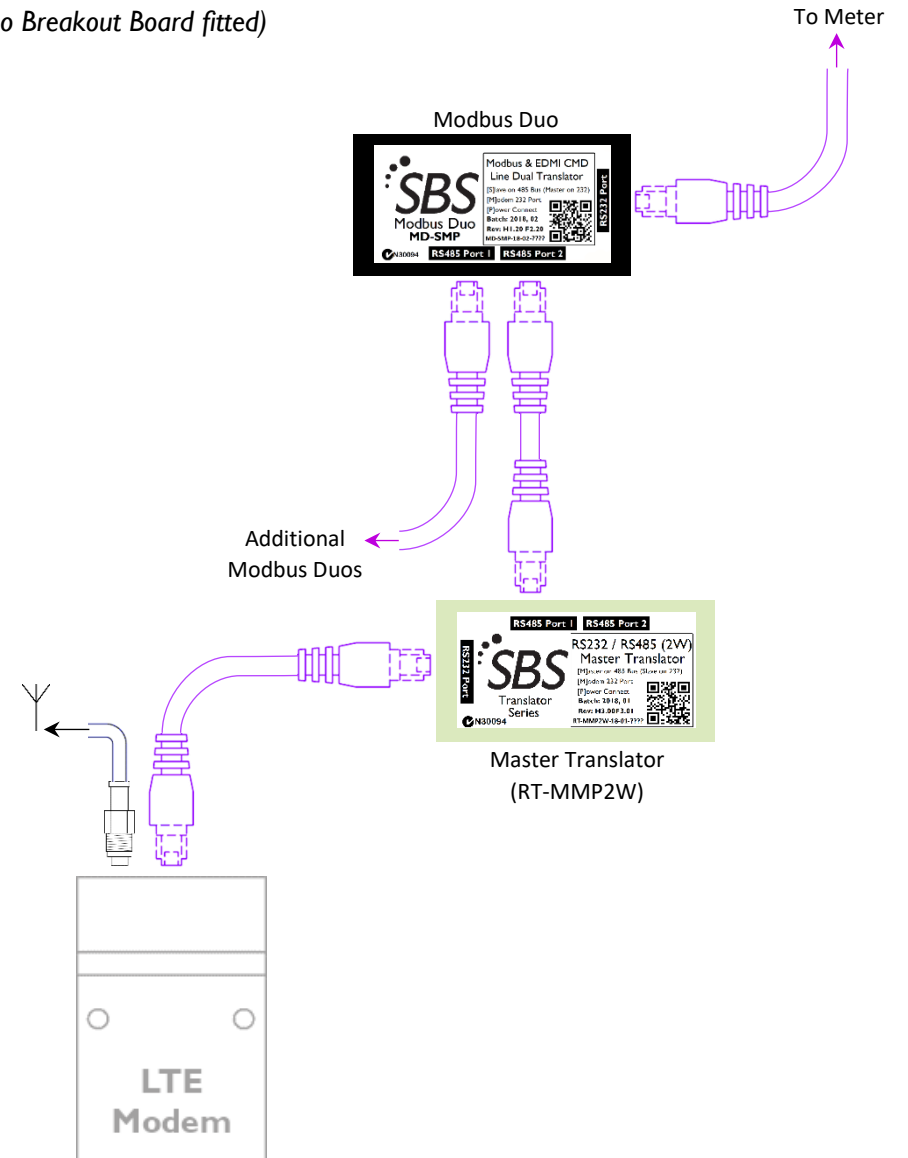
Network Example 2: Modbus Only

(No Breakout Board fitted)

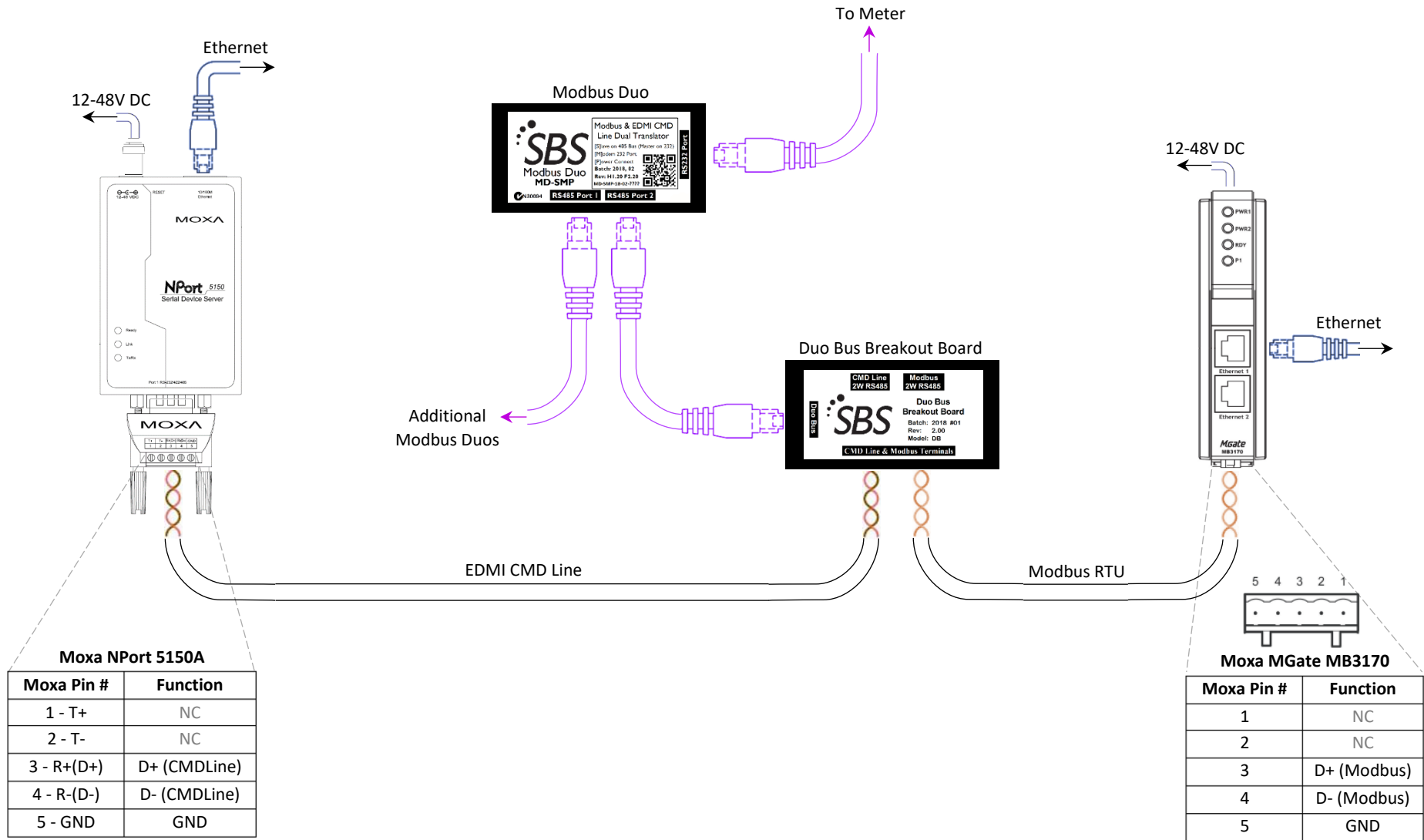


Network Example 3: EDM I Command Line Only

(No Breakout Board fitted)



Network Example 4: Dual Modbus and EDM I CMD Line Network to Moxa Ethernet Adaptors





Modbus Duo – Quick Start Guide

Register Description	Unit	Slot	Modbus Register	Data Type	Register Description	Unit	Slot	Modbus Register	Data Type
Voltage Phase A	V	Default HP Slot	9001	Sw. Float	TOU CH1		HP1	9045	Sw. Float
Voltage Phase B	V	Default HP Slot	9003	Sw. Float	TOU CH2		HP2	9047	Sw. Float
Voltage Phase C	V	Default HP Slot	9005	Sw. Float	TOU CH3		HP3	9049	Sw. Float
Current Phase A	A	Default HP Slot	9007	Sw. Float	TOU CH4		HP4	9051	Sw. Float
Current Phase B	A	Default HP Slot	9009	Sw. Float	TOU CH5		HP5	9053	Sw. Float
Current Phase C	A	Default HP Slot	9011	Sw. Float	TOU CH6		HP6	9055	Sw. Float
Angle Phase A	Deg	Default HP Slot	9013	Sw. Float	<avail script slot>		MP1	9075	
Angle Phase B	Deg	Default HP Slot	9015	Sw. Float	<avail script slot>		MP2	9077	
Angle Phase C	Deg	Default HP Slot	9017	Sw. Float	<avail script slot>		MP3	9079	
Active Power Phase A	W	Default HP Slot	9019	Sw. Float	<avail script slot>		MP4	9081	
Active Power Phase B	W	Default HP Slot	9021	Sw. Float	<avail script slot>		MP5	9083	
Active Power Phase C	W	Default HP Slot	9023	Sw. Float	<avail script slot>		MP6	9085	
Reactive Power Phase A	Var	Default HP Slot	9025	Sw. Float	<avail script slot>		MP7	9087	
Reactive Power Phase B	Var	Default HP Slot	9027	Sw. Float	<avail script slot>		MP8	9089	
Reactive Power Phase C	Var	Default HP Slot	9029	Sw. Float	<avail script slot>		MP9	9091	
Apparent Power Phase A	VA	Default HP Slot	9031	Sw. Float	<avail script slot>		MP10	9093	
Apparent Power Phase B	VA	Default HP Slot	9033	Sw. Float	<avail script slot>		MP11	9095	
Apparent Power Phase C	VA	Default HP Slot	9035	Sw. Float	<avail script slot>		MP12	9097	
Frequency	Hz	Default HP Slot	9037	Sw. Float	<avail script slot>		MP13	9099	
Angle Va – Vb	Deg	Default HP Slot	9039	Sw. Float	<avail script slot>		MP14	9101	
Angle Va- Vc	Deg	Default HP Slot	9041	Sw. Float	<avail script slot>		MP15	9103	
Power Factor	-	Default HP Slot	9043	Sw. Float	<avail script slot>		MP16	9105	
Total Reactive Energy (Export)**	Varh	Default MP Slot	9141	Sw. Float	<avail script slot>		MP17	9107	
Total Reactive Energy (Import)**	Varh	Default MP Slot	9145	Sw. Float	<avail script slot>		MP18	9109	
Total Apparent Energy (Export)**	VAh	Default MP Slot	9139	Sw. Float	<avail script slot>		MP19	9111	
Total Apparent Energy (Import)**	VAh	Default MP Slot	9143	Sw. Float	<avail script slot>		MP20	9113	
Meter Serial Number	-	Default LP Slot	9151	Sw. UInt32	<avail script slot>		LP1/LPM1	9191	
Meter Current Time	{D}{M}{Y} {H}{M}{S}	Default LP Slot	9153	6x UInt8	<avail script slot>		LP2/LPM2	9201	
Meter Firmware Version	-	Default LP Slot	9156	6x Char	<avail script slot>		LP3/LPM3	9211	
Meter On-Time	{D}{M}{Y} {H}{M}{S}	Default LP Slot	9159	Sw. UInt32	<avail script slot>		LP4/LPM4	9221	
Meter Off-Time	{D}{M}{Y} {H}{M}{S}	Default LP Slot	9161	Sw. UInt32	<avail script slot>		LP5/LPM5	9231	
Load Survey Scales (Curr. N/A)	-	Default LP Slot	9163	5x Sw. Float	<avail script slot> (FW Ver2.10+)		LPX1	9251	
TOU Setups (Debug)	-	Default LP Slot	9173	16x WORD	<avail script slot> (FW Ver2.10+)		LPX2	9451	
TOU Auto Find Result (Debug)	-	Default LP Slot	9189	2x WORD	<avail script slot> (FW Ver2.10+)		LPX3	9651	
** Only available in Firmware V2.20 and up					<avail script slot> (FW Ver2.10+)		LPX4	9851	

ATLAS 2 Compatible

EDMI Meter Support & Configuration

SBS Modbus Duo Translators are designed to support all EDM I Atlas Series RS232 meters that are configured with big chip (dual comms) and Modem Power Supply features. EDM I Mk10A, Mk10D, Mk10E, Mk10H, Mk7A and Mk7C can all be purchased with these configuration options.

EDMI Meters **must have security and communication ports configured** for compatibility with Duo Translator devices. If you are buying Duo’s directly from SBS and haven’t requested your own security information be programmed, then your Duo’s will be using the following default meter USERNAME//PASSWORD: METER//READER

Network Debugging

Most SBS Modbus Duo Network issues are related to incorrect/incompatible security and communication settings between the Duo and its paired Meter – these settings have been documented in this Quick Start Guide. For Mk10A meters, a useful initial check is to ensure your Meter LCD is displaying the © symbol once a Duo device is plugged in to this meter. This symbol will confirm that the Duo has successfully passed the meter security login and in the case of “Auto” Modbus ID mode it also means that the Duo will have successfully retrieved the Meter Serial number to calculate its Modbus ID. In Auto addressing mode the Duo device will not be accessible over the Modbus network before this step is successful. Contact SBS using the details below for further advice.

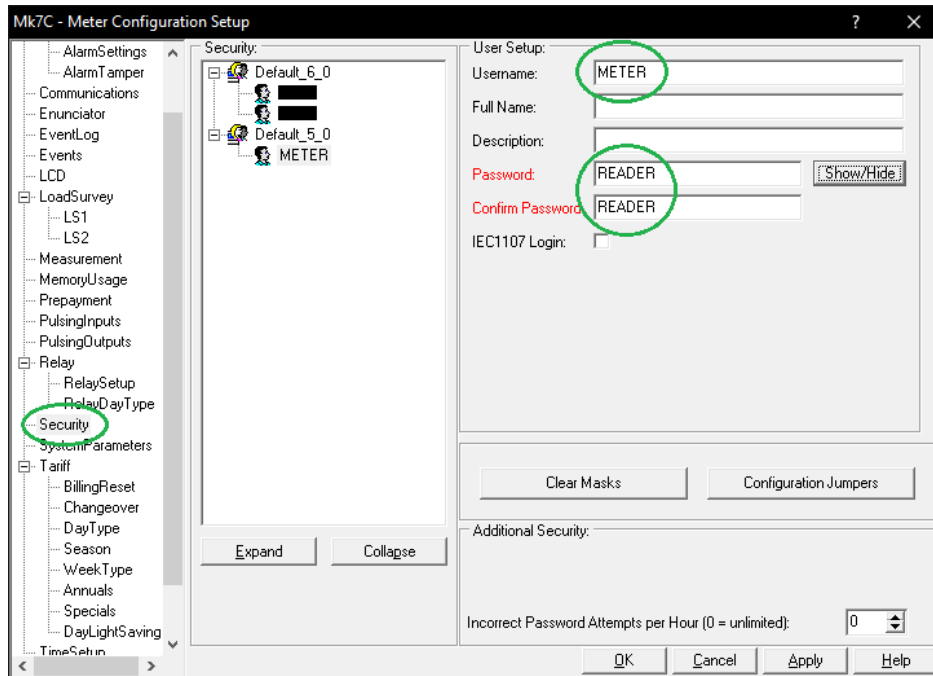


Fig 3. Meter Configuration – Security. Default Duo METER//READER Credentials

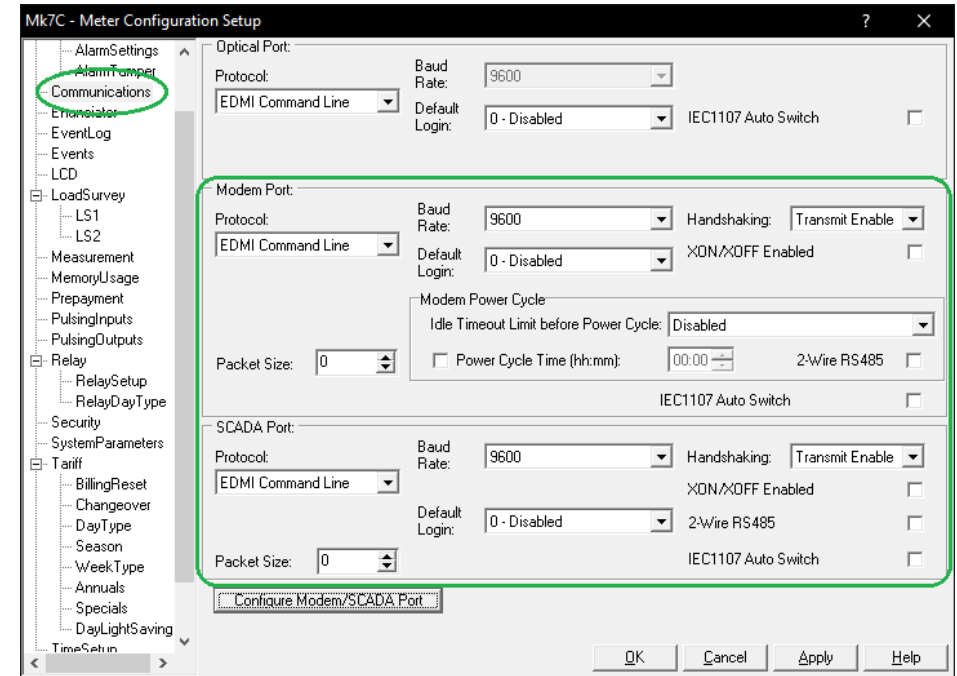


Fig 4. Meter Configuration – Communications