Transducer Configuration Software

INSTALL

1) To install the software double click on “Install” application file. Now setup window will display display.
2) Select destination location for software installation & click “Next”.
3) Select component for installation (software only or software along with USB drivers) & click “Next”.
4) Select start menu folder & click “Next” & then click “Install”.
5) Now software has been installed & it is ready to use.

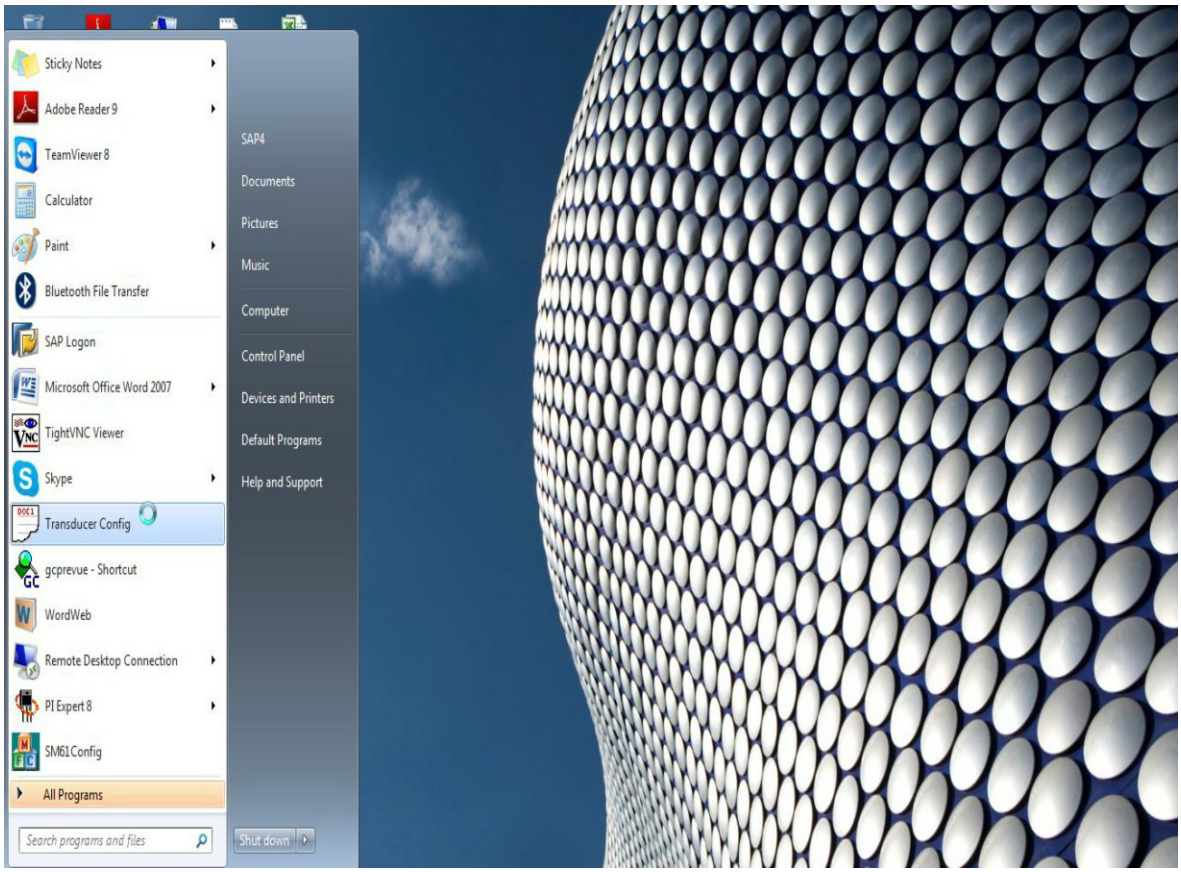
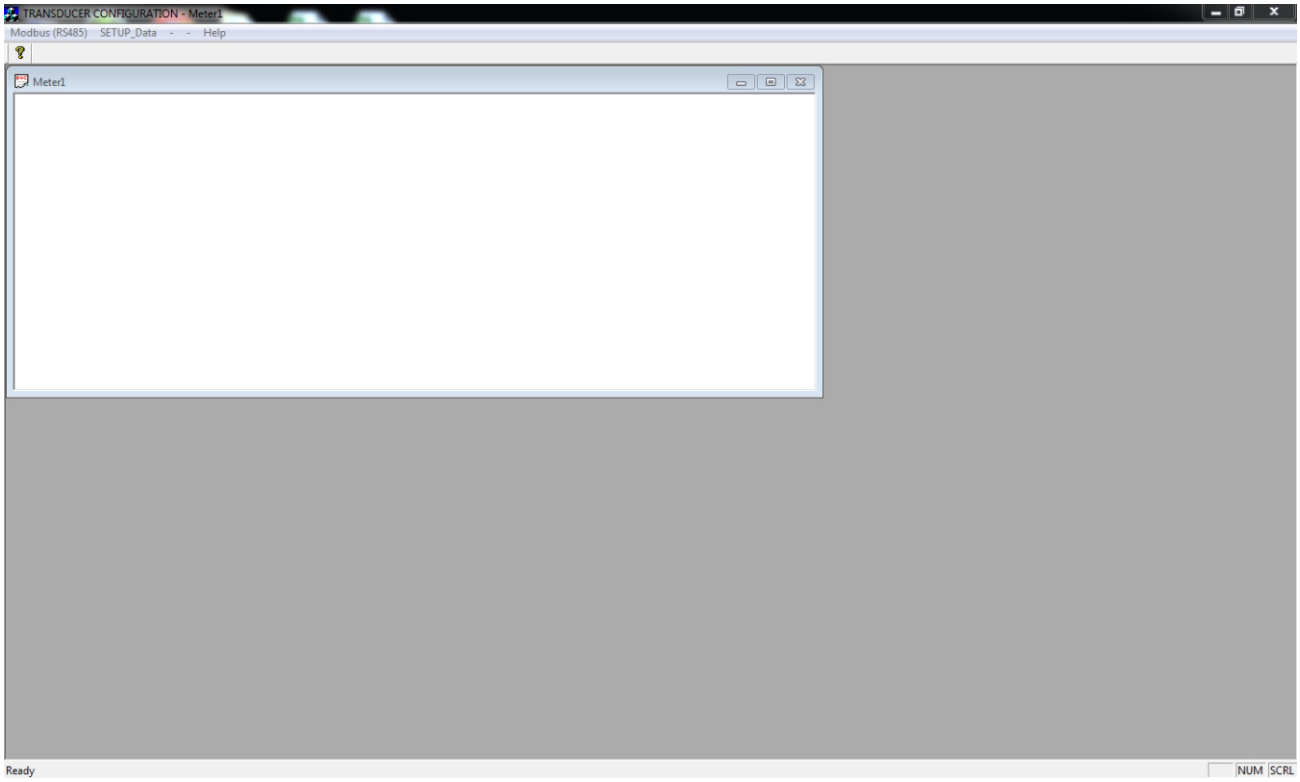


Fig 1. Starting Configuration Software

HOW TO USE

Click the shortcut “Transducer Config” in START menu as shown in fig 1.

Transducer Software window opens.



It is having Following Menu

1. **Modbus (RS 485) :**
   Used for Display of measured Parameter (3X registers) through Modbus.

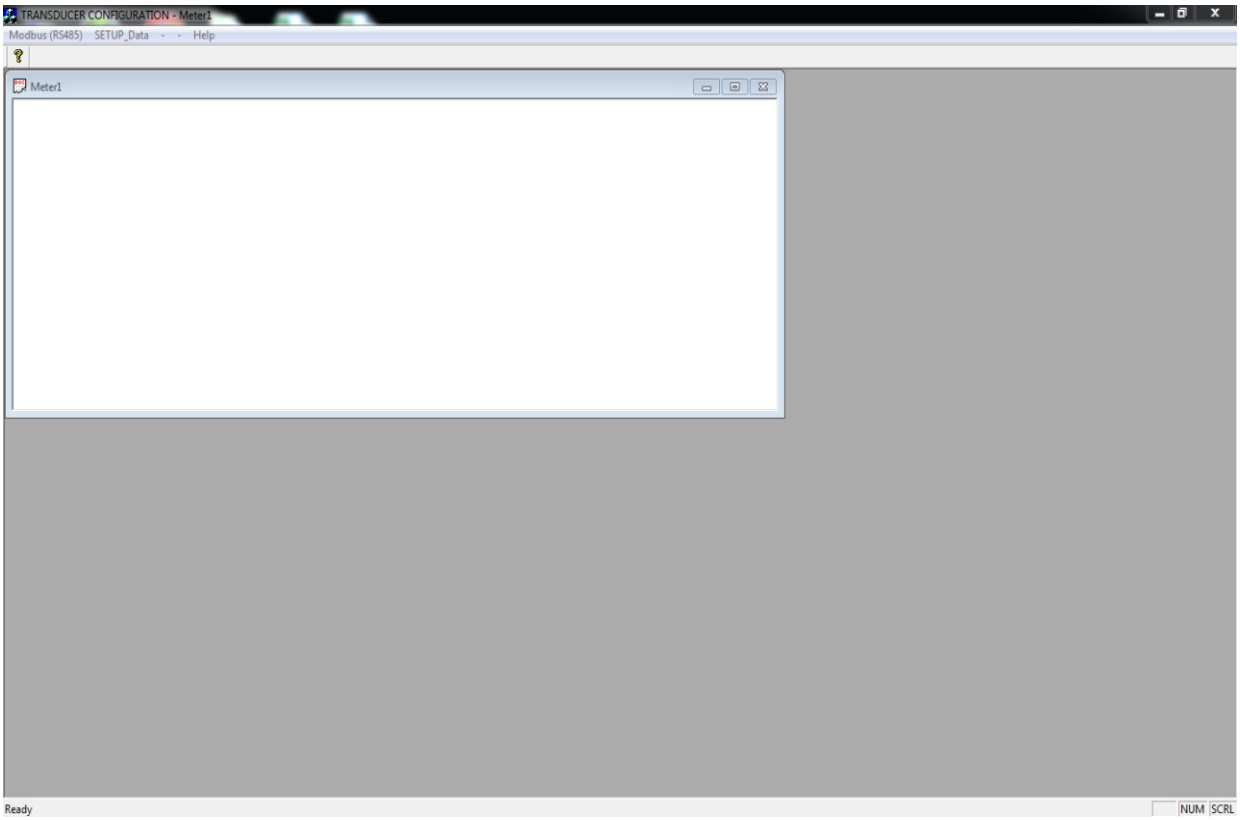
2. **Setup_Data:**
   It has 2 Options.
   a. PRKAB5000: Used for Setting of Setup Parameters through PRKAB5000. It also provides Setting of Start value, Elbow value & End value of Input Parameter as well as output Parameter. It also provides Output Simulation of transducer.

   b. Modbus (RS485): Used for Setting of Setup Parameters through Modbus.

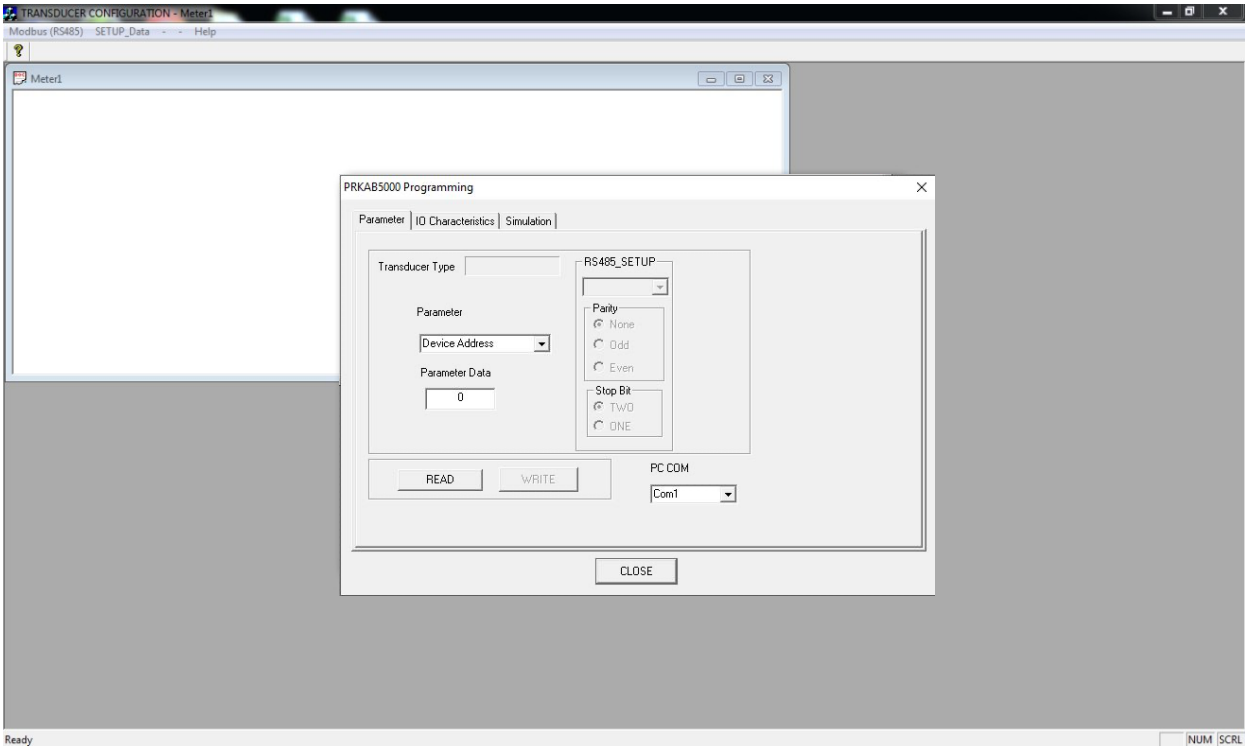
To use PRKAB for programming connect the Transducer (Refer the Transducer user manual for details)

Configuring Transducer through PRKAB5000 Programming

1) Click menu ‘SETUP_Data PRKAB5000



2) PRKAB5000 Programming window opens.

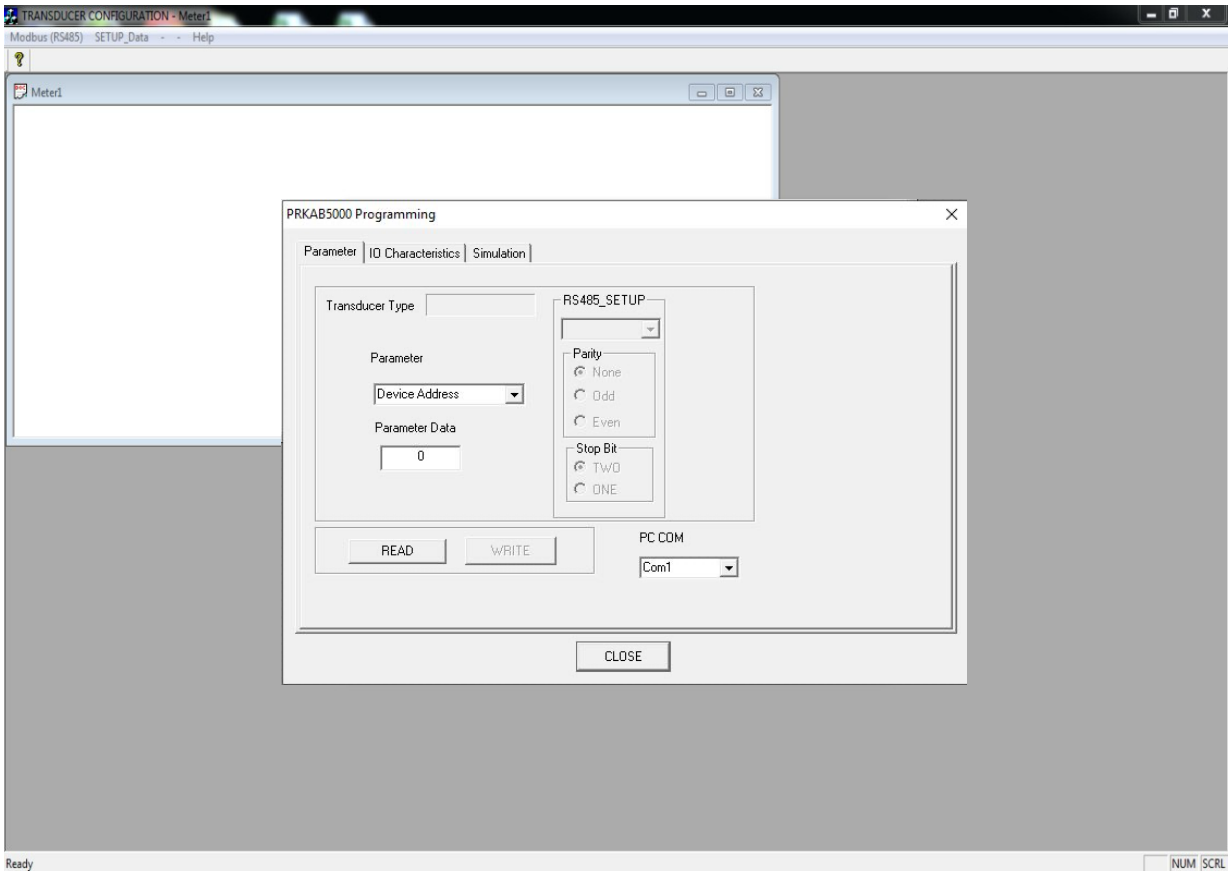


3) On PRKAB5000 Programming window three tabs can be seen

I) Parameter TAB:

Parameter Tab can be used to program following parameters

a) Device Address (Modbus slave device address).
b) RS485 setup (Baud rate, Parity, Stop Bit).
c) PT primary (applicable to voltage and power transducer).
d) PT secondary (applicable to voltage and power transducer).
e) CT primary (applicable to current and power transducer).
f) CT secondary (applicable to current and power transducer).



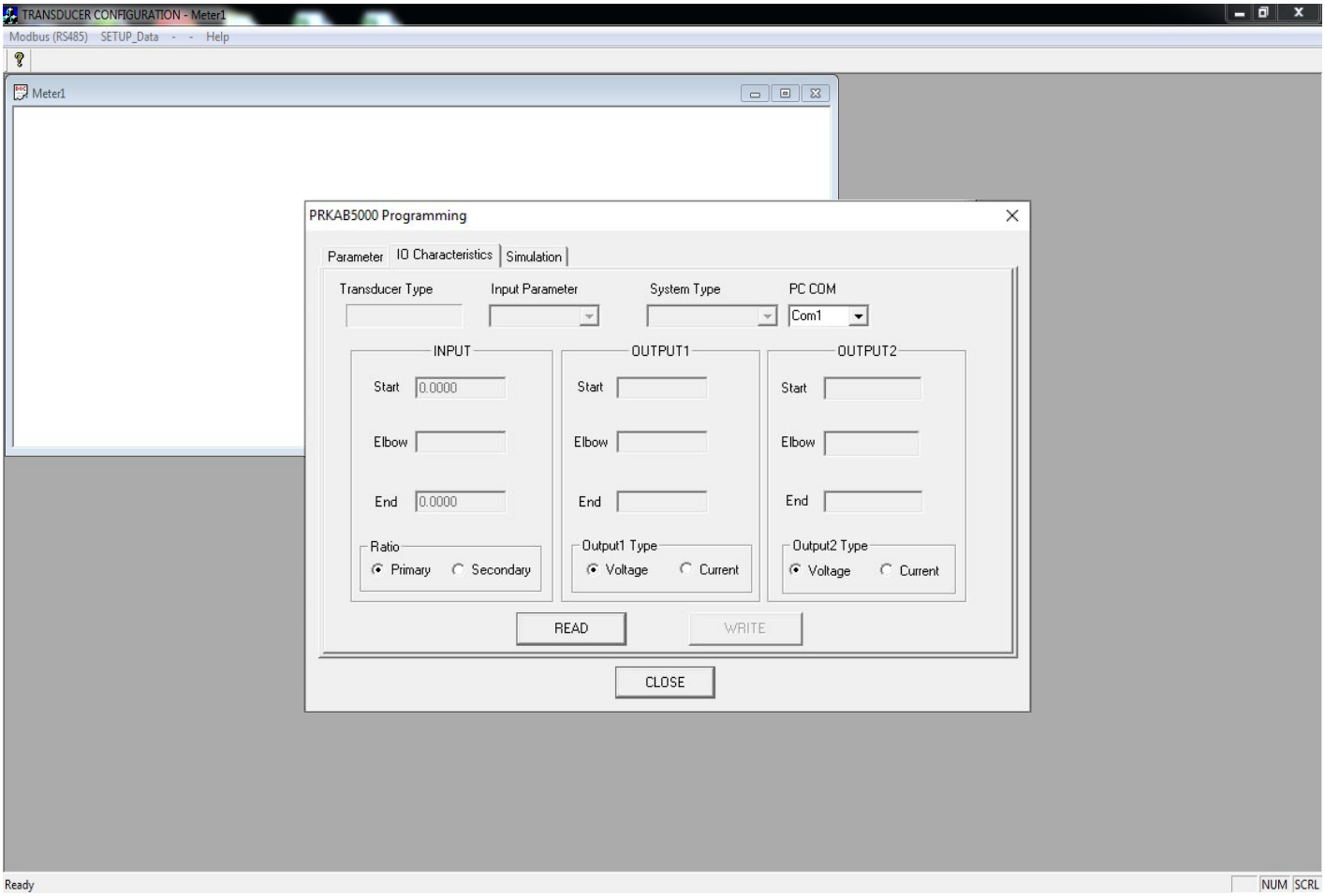
Note: To enable "WRITE" button, it is necessary to first click on the "READ" button..

For further details refer page no. 7.

II) IO Characteristics TAB:

IO Characteristics Tab can be used to program following parameters

a) Input Parameter
b) System type (applicable to power transducer).
c) Transducer Input Characteristics (Start Value (x0), Elbow Value (x1), End Value (x2)) in terms of Primary or Secondary.
d) Transducer Output Characteristics (Start Value (y0), Elbow Value (y1), End Value (y2)).
e) Output Type 1 and Output Type 2 configure as voltage or current.

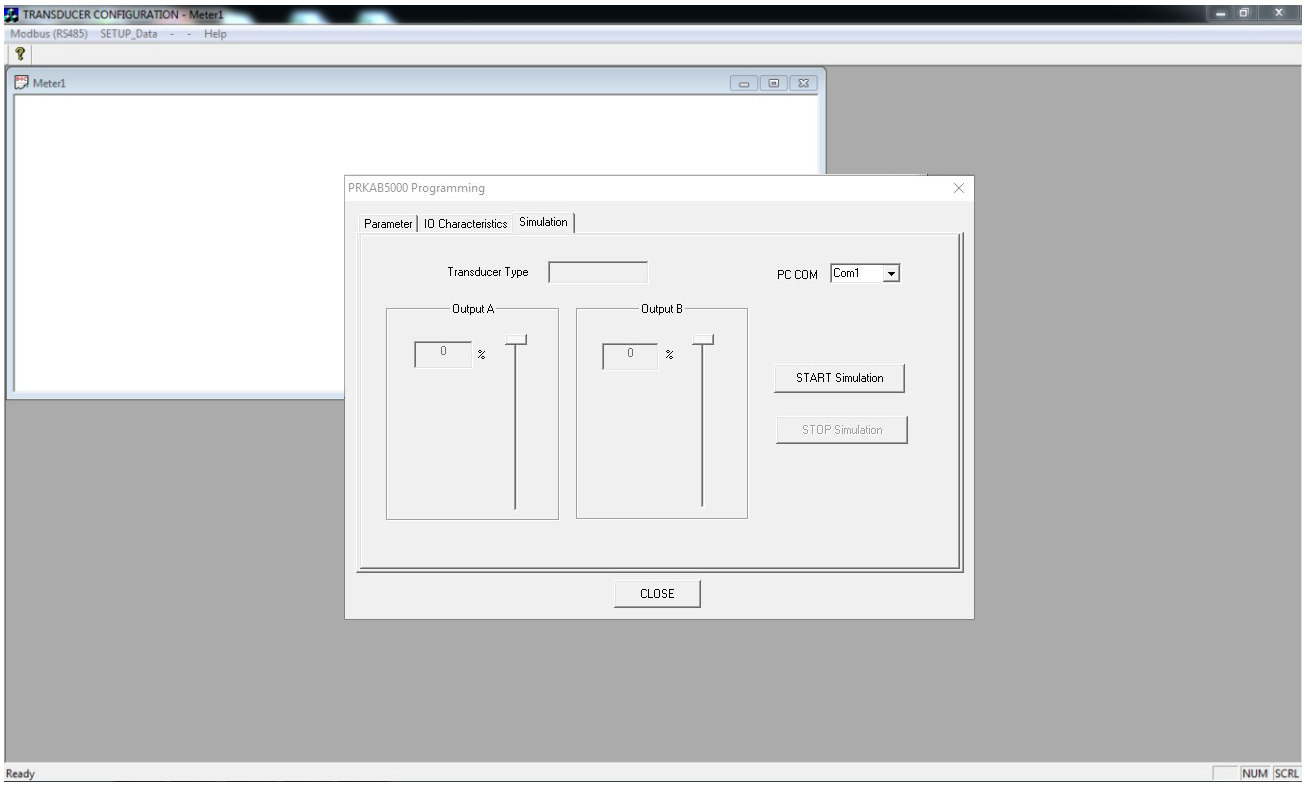


Note: To enable "WRITE" button, it is necessary to first click on the "READ" button.

For further details refer page no. 11.

III) Simulation TAB:

Simulation Tab can be used to operate the transducer in the simulation mode. It provides independent simulation of both the Outputs.

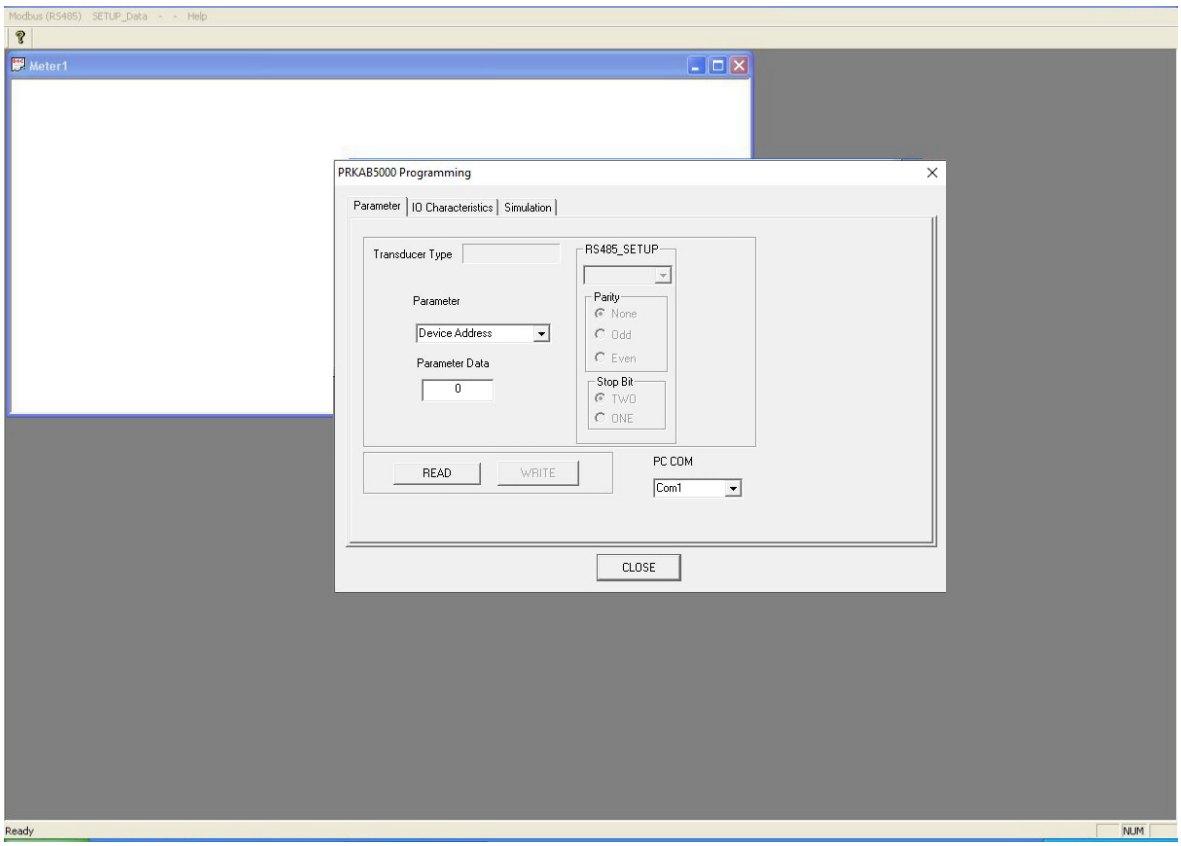


Note: To operate the transducer in the simulation mode, it is necessary to click on "START Simulation" button to enable the sliders. For Normal mode of operation click on "STOP Simulation" button.

For further details refer page no. 13.

Programming steps:

I) Parameter TAB:



a) Connect the transducer to the PC through PRKAB cable.

b) Select Proper COM port.

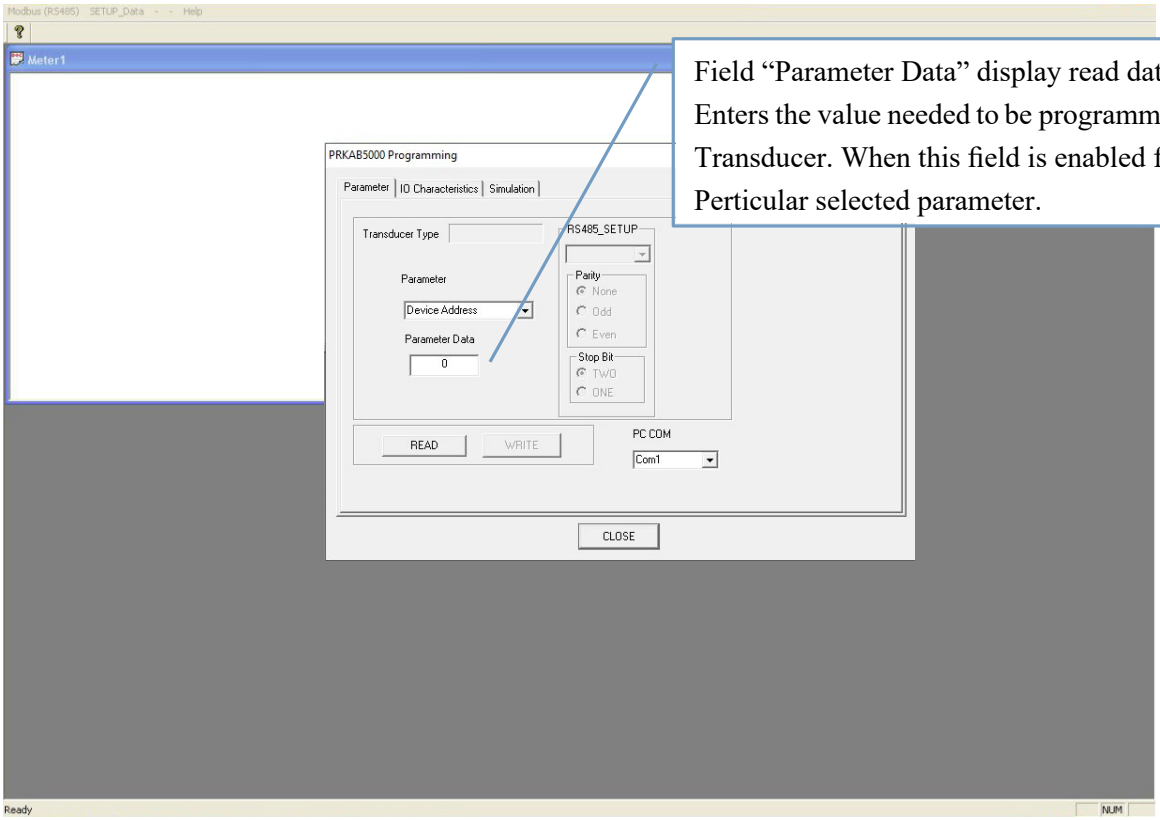
c) Click ‘READ’ button.

d) ‘WRITE’ button gets enabled.

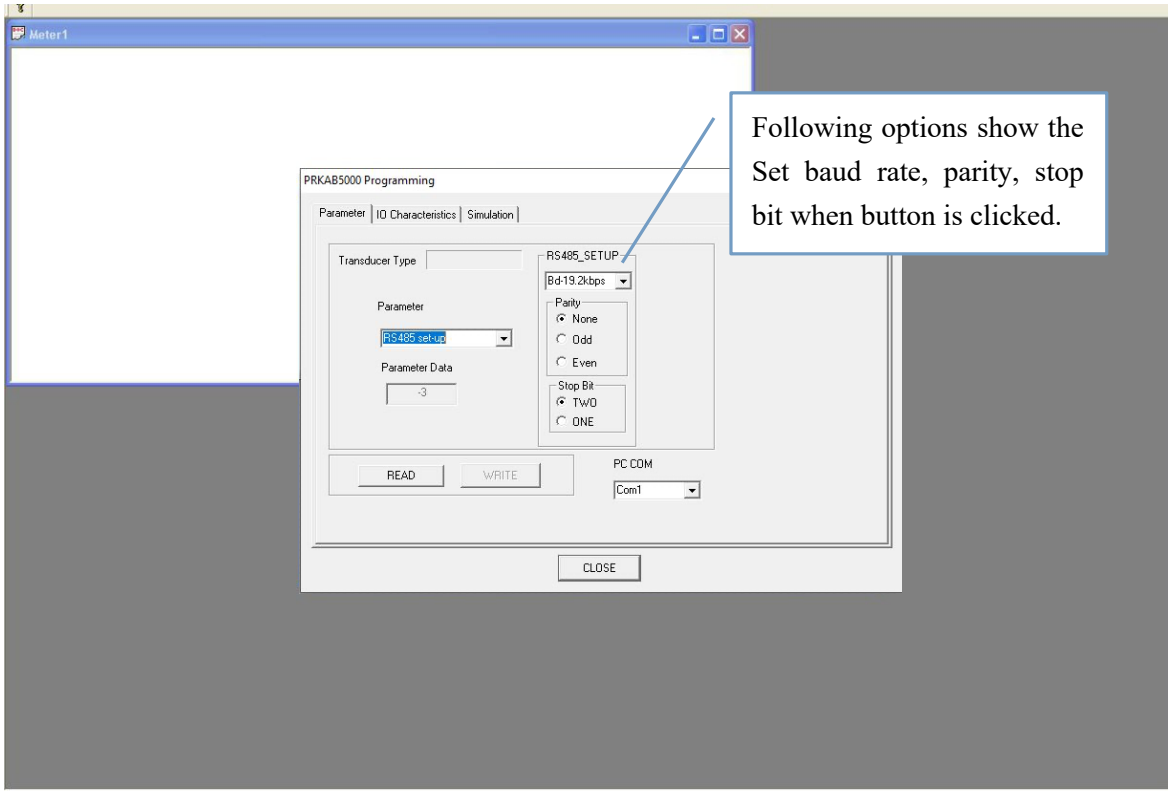
e) ‘Transducer Type’ field display transducer connected to PC.

f) Depending upon Transducer type ‘Parameter’ list gets updated.

Note: To enable “WRITE” button, it is necessary to first click on the “READ” button.

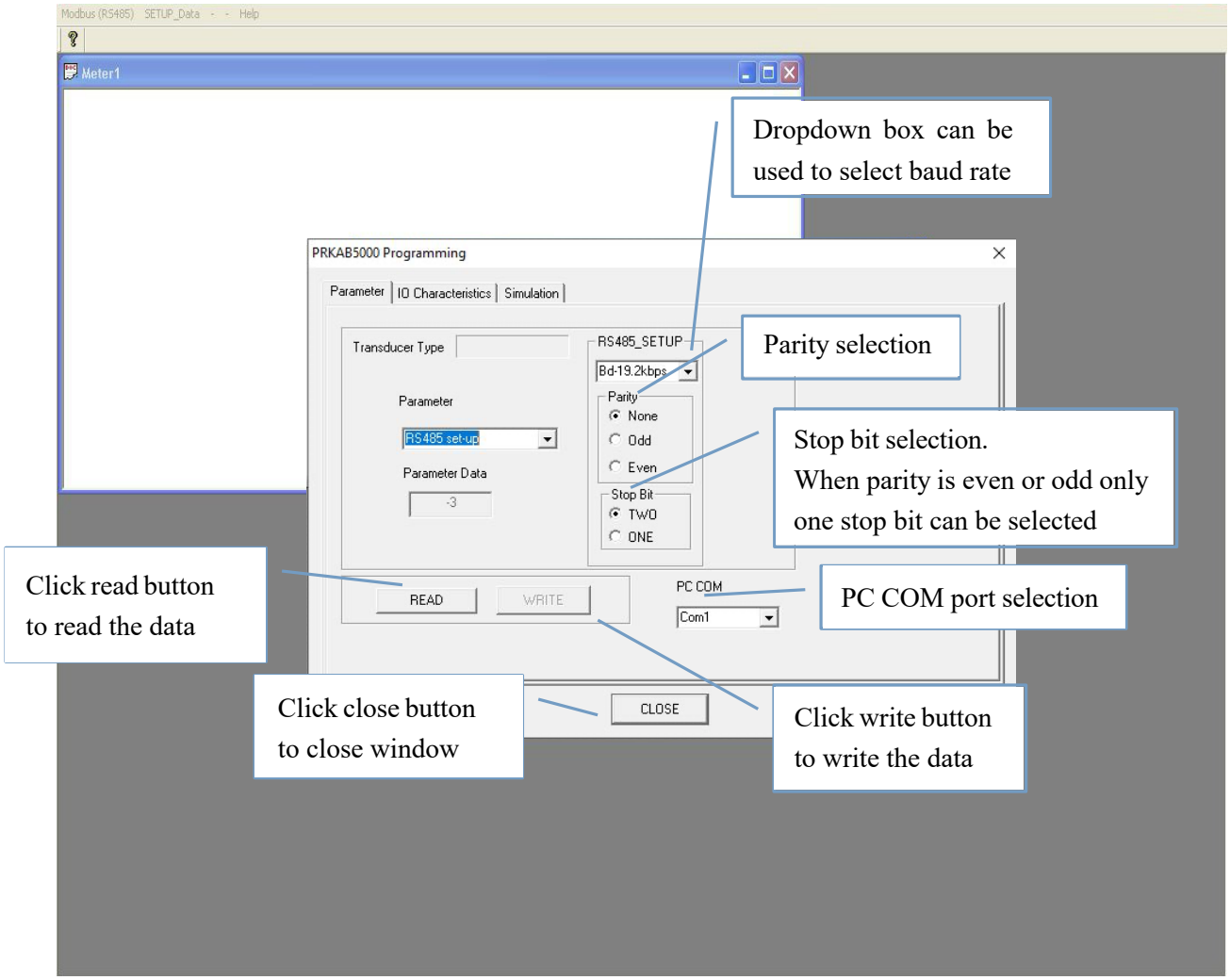


In case ‘RS485 set-up’ parameter is selected



After reading the RS 485 Setup Following Options are enable for writing.

Baud rate
Parity
Stop bit



Definition 4x Parameters and allowed values:

Device Address:

This parameter accepts device address for Modbus communication in range of 1 to 247.

PT Primary (KVolt):

This parameter accepts value in terms of KVolts.

For power transducer allowed range is from 0.100kVolts to 692.800kVolts, with consideration that presently written PT Primary value with the previously set CT Primary value would not result in maximum power of greater than 1000 MVA per phase.

PT Secondary (Volt):

This parameter accepts value in terms of Volts.
Allowed range is from 100 Volts to500 Volts.

CT Primary (Amp):

This parameter accepts value in terms of Ampere.
Allowed range is from 1 Amps to 9999 Amps.

For power transducer allowed range is from 1 Amps to 999 Amps, with consideration that presently written CT Primary value with the previously set PT Primary value would not result in maximum power of greater than 1000 MVA per phase.

CT Secondary (Amp):

This parameter accepts value in terms of Ampere.
Allowed range is from 1 Amps to 5 Amps.

II) IO Characteristics TAB:

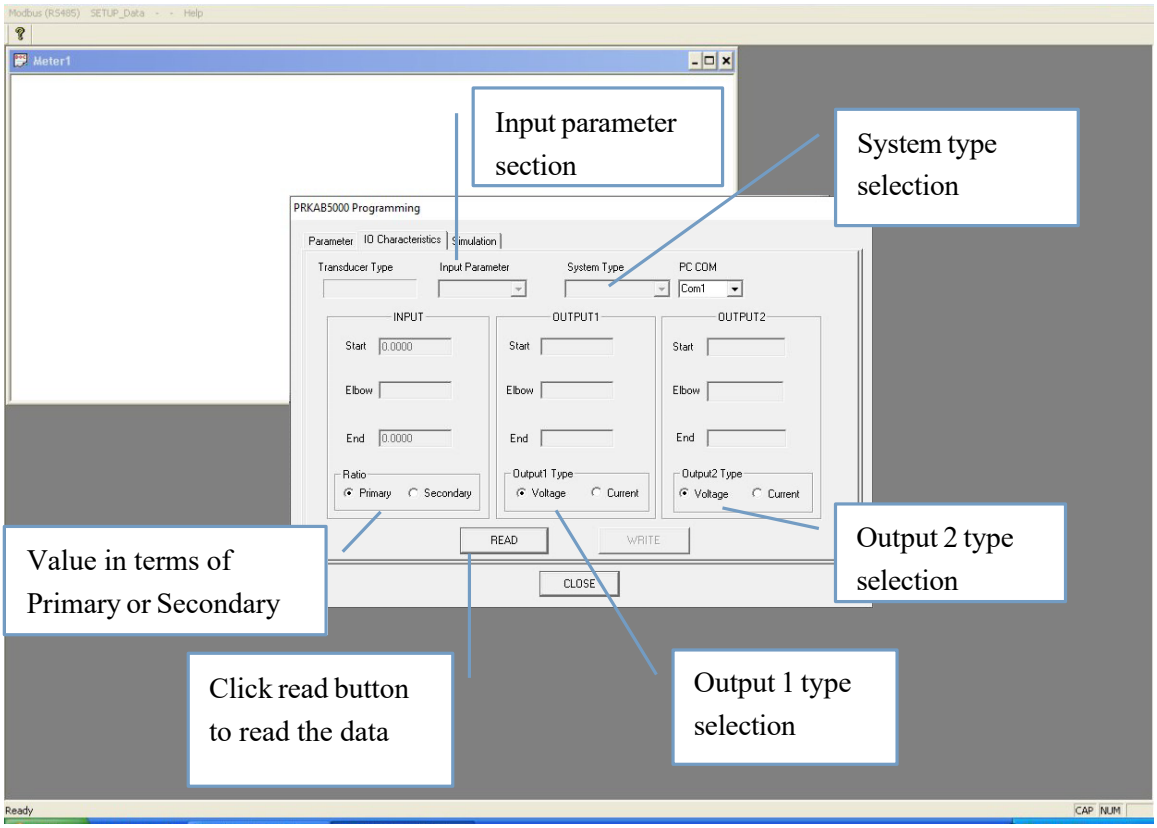
a) Connect the transducer to the PC through PRKAB cable.

b) Select Proper COM port.

c) Click 'READ' button.

d) 'WRITE' button gets enabled.

e) 'Transducer Type' field display transducer connected to PC.



Only for Power transducer

Input Parameter field will update parameters depending on Network type selected.

If system type programmed is 3Phase4wire unbalance (3Ph4W) or 3Phase3wire (3Ph3W) unbalance then parameters displayed will be

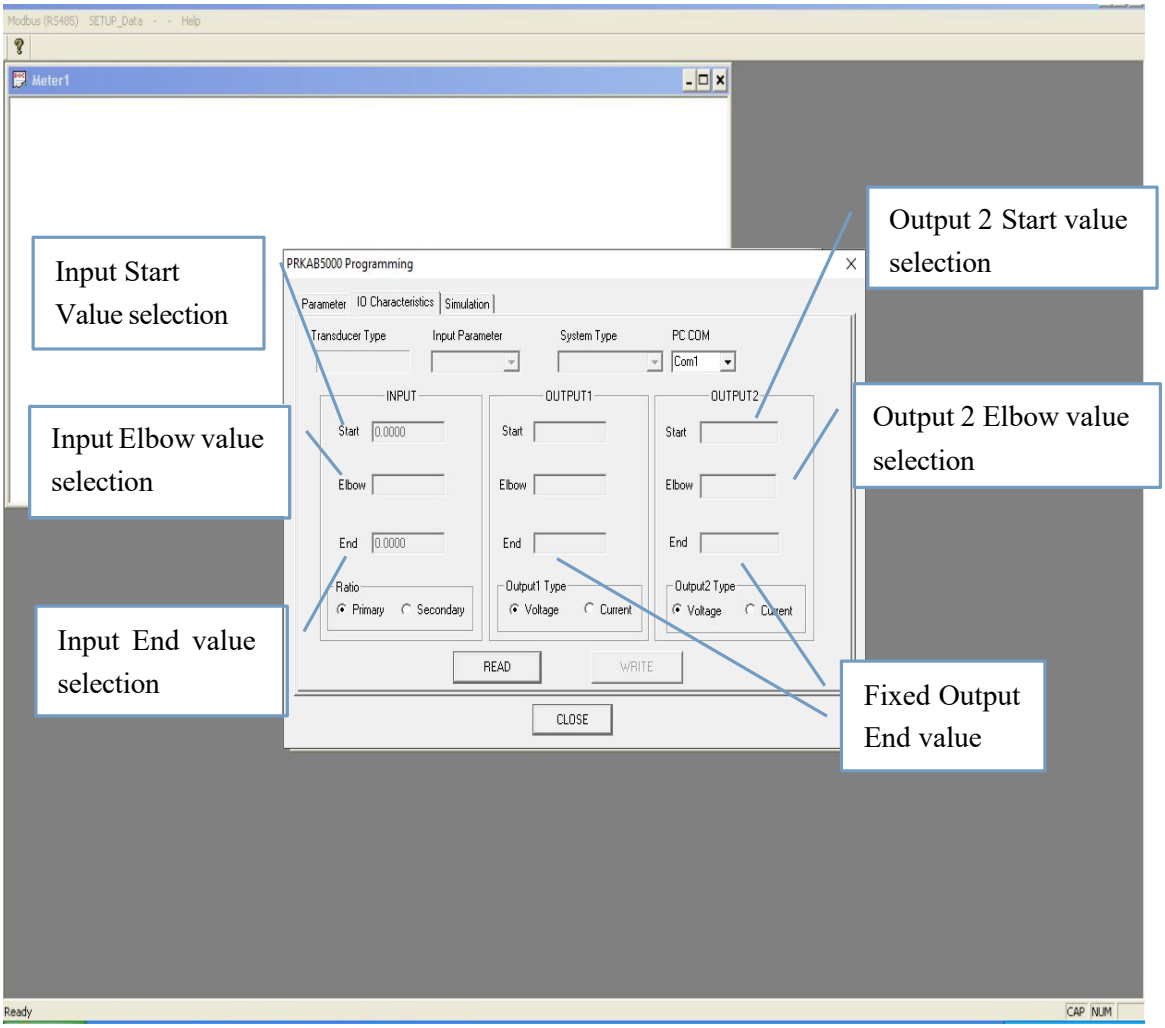
Apparent Power.
Active Power.
Reactive Power.

If system type programmed is U12-I1, U23-I1, U31-I1 then parameters displayed will be

Power Factor
Phase Angle

If system type programmed is 3Phase4wire balance (3Ph4W) or 3Phase3wire (3Ph3W) balance, single phase then all parameters are applicable.

f) Depending upon Transducer type all Parameters gets updated.



Note: To enable "WRITE" button, it is necessary to first click on the "READ" button.

g) When System type is changed, Input/Output Parameter values shown are default values.

h) Elbow value setting is enable only for Following Parameters

Active Power
Apparent Power
Reactive Power

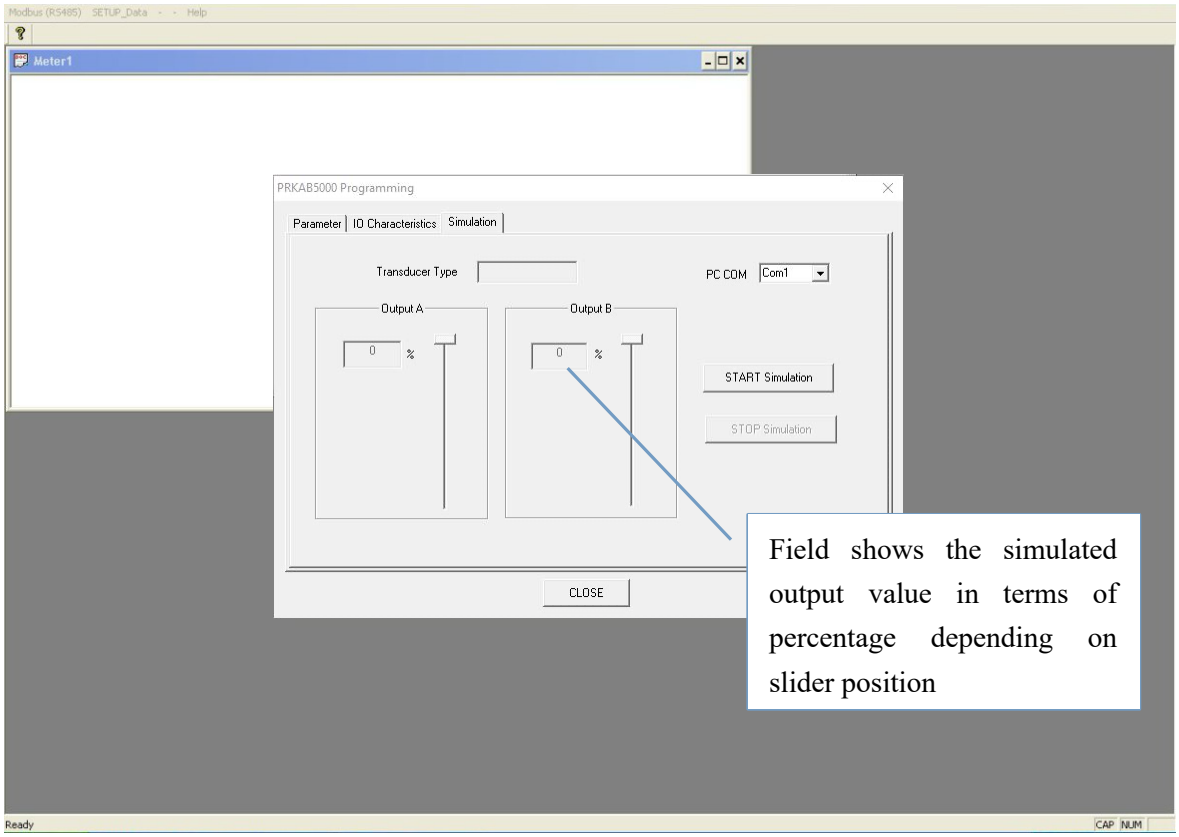
III) Simulation TAB:

a) Connect the transducer to the PC through PRKAB cable.

b) Select Proper COM port.

c) Click on the "START Simulation" button to operate transducer in the simulation mode. 'Transducer Type' field displays the transducer type (V/I/Hz/P) which is connected to PC.

d) Then Slider controls get enabled. Move the slider using mouse to simulate the Output of the transducer. It will write the selected % value shown in the field to the respective output of the transducer.

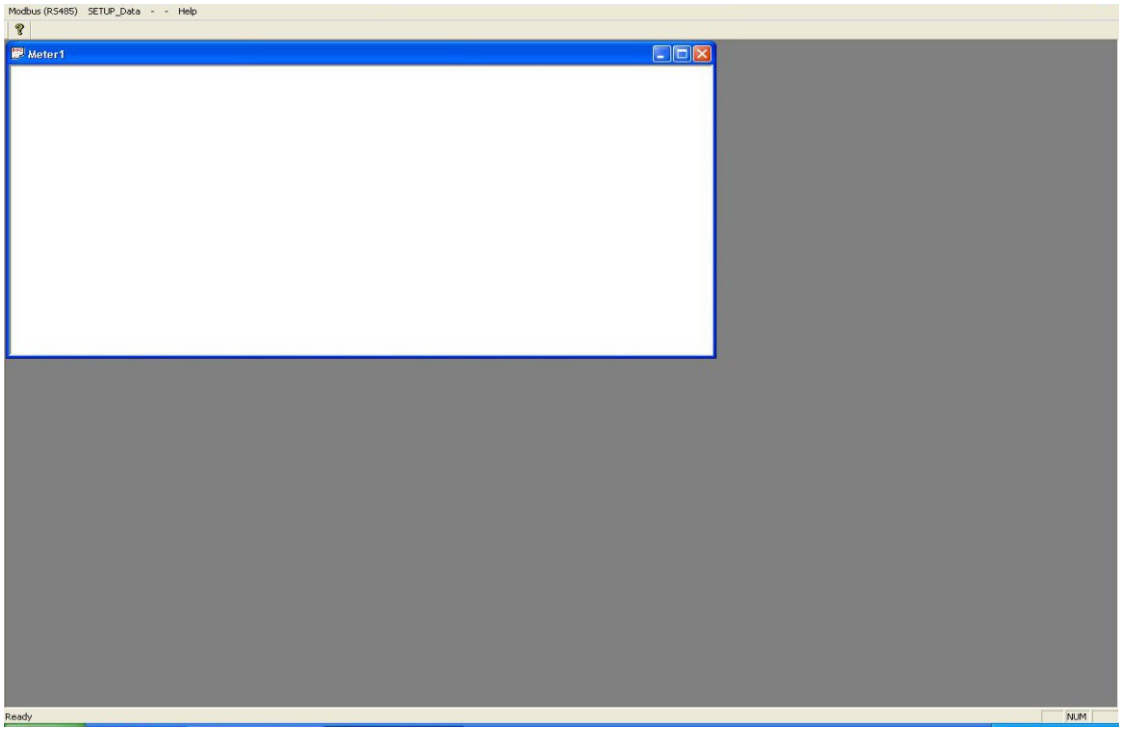


Note: If tab changed in the simulation mode, always you have to click on the "START Simulation" button to enable the slider controls. To enter into normal mode, click on the "STOP Simulation" button.

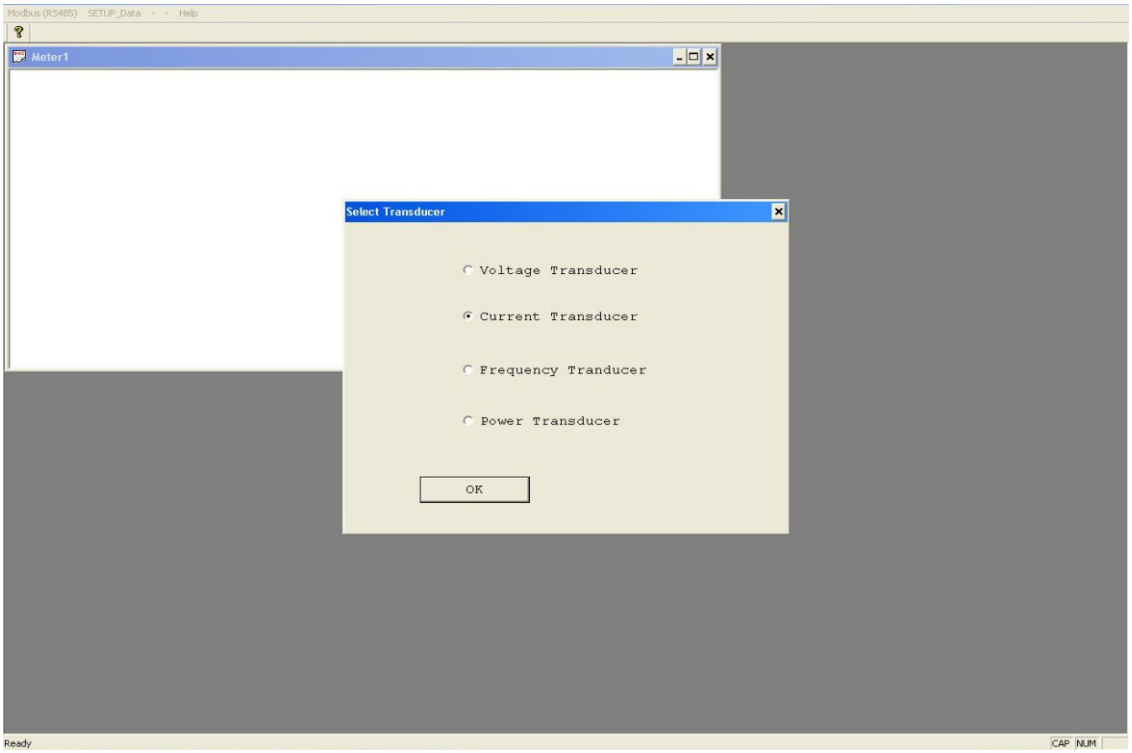
e) For normal operation, Click on the "STOP Simulation" button.

Configuring Transducer through Modbus (4x registers).

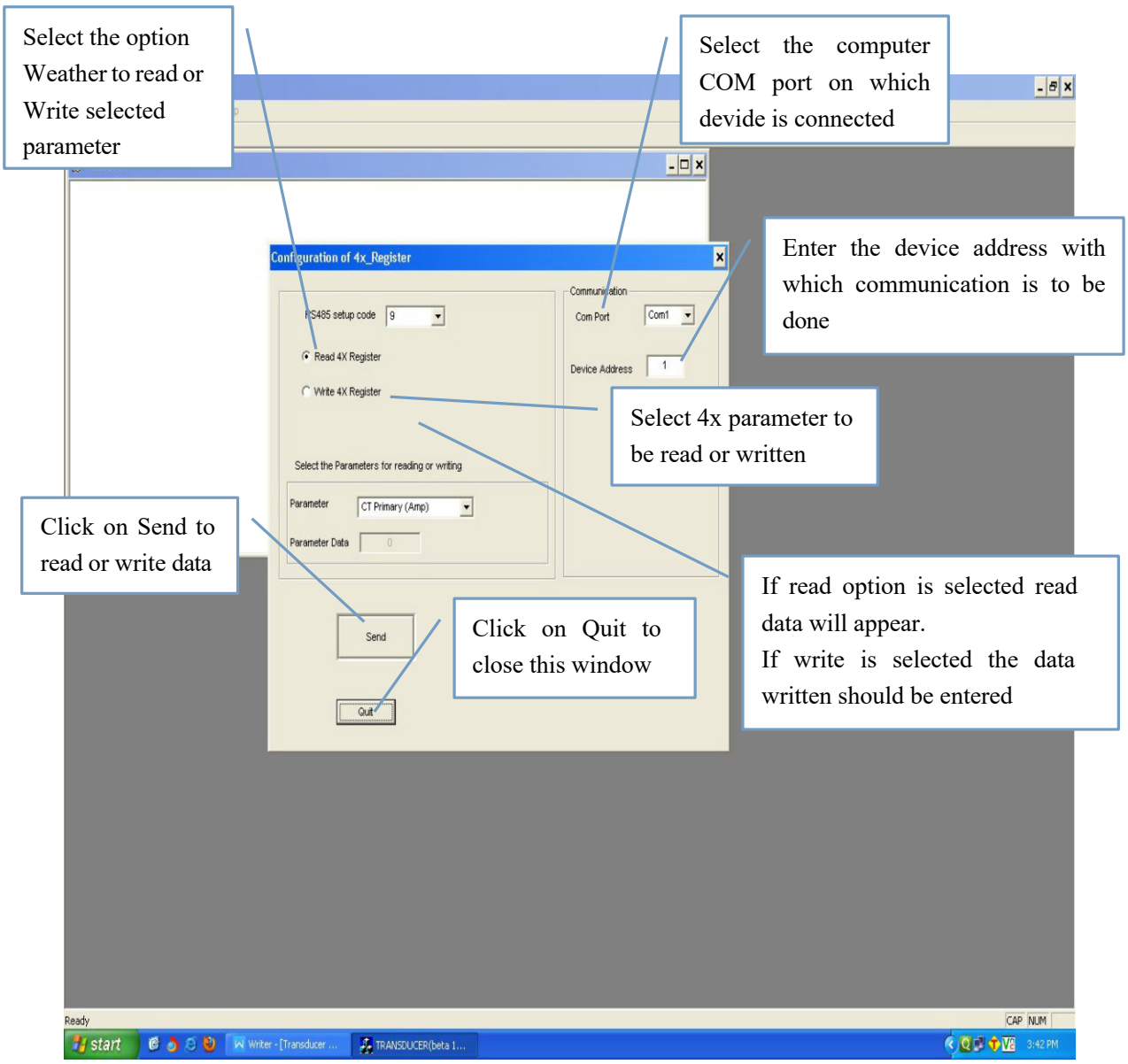
1. For Configuration of Setup Parameter, Select the menu SETUP Data Modbus (RS485)



2. Select the type of Transducer.

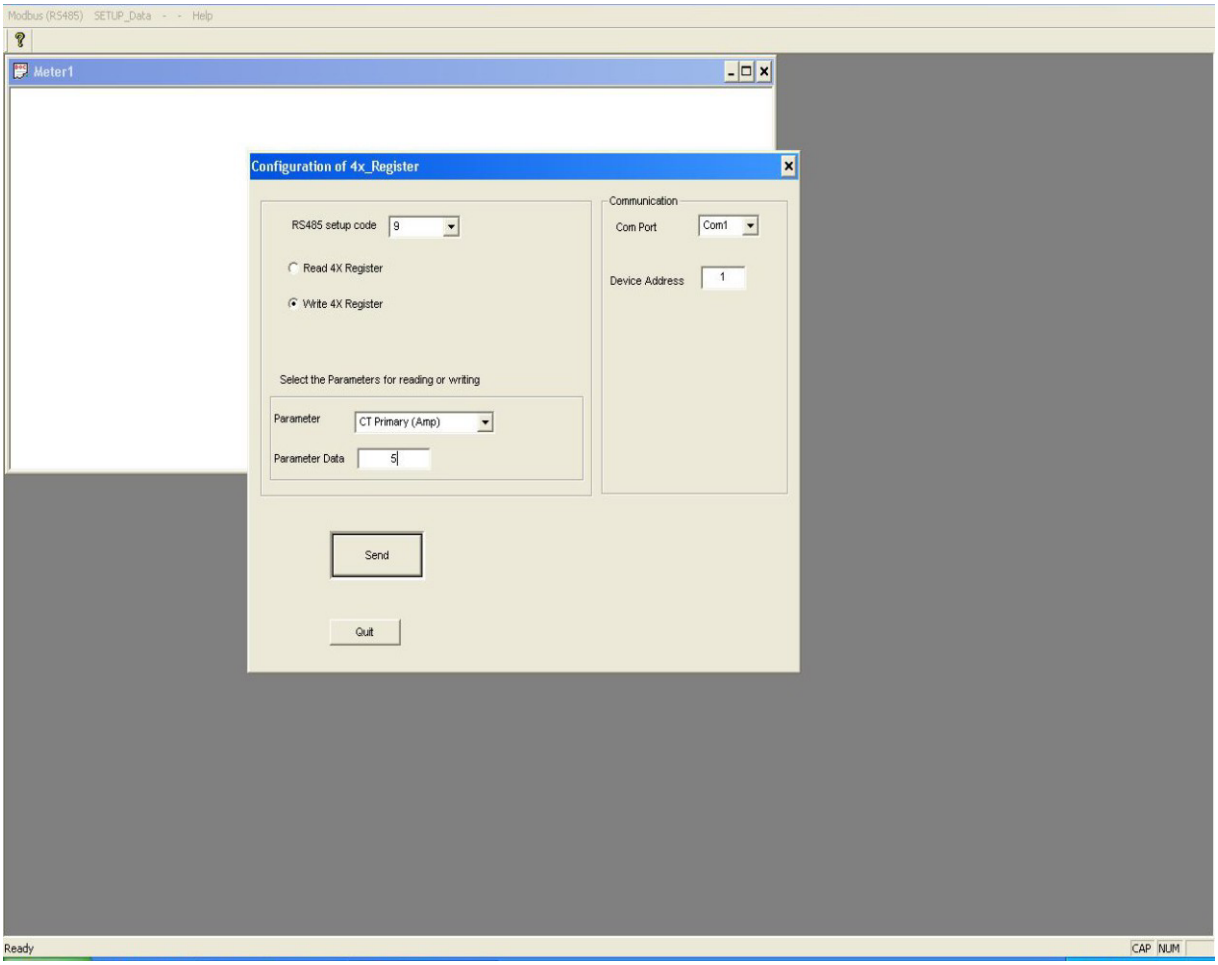


4x_Register window will appear on the screen.



Example: Changing CT Primary through Modbus to 5 Ampere.

Select “Write 4x register” option.
Select CT Primary Parameter.
Enter the value 5 in parameter data field and then click SEND button.
Communication Successful screen will appear.



Definition 4x Parameters and allowed values:

RS485 set-up:

RS485 Setup Code of Transducer

Baud Rate	Parity	Stop Bits	Decimal Values
19200	None	1	12
19200	None	2	13
19200	Even	1	14
19200	Odd	1	15
9600	None	1	8
9600	None	2	9
9600	Even	1	10
9600	Odd	1	11
4800	None	1	4
4800	None	2	5
4800	Even	1	6
4800	Odd	1	7
2400	None	1	0
2400	None	2	1
2400	Even	1	2
2400	Odd	1	3

Device Address:

This parameter accepts device address for modbus communication in range of 1 to 247.

Mode Sel:

To select mode Normal Mode OR Simulation Mode;

For Normal Mode put value = 1

For Simulation Mode put value = 2

When SIRAX is powered OFF it will by default enter into Normal Mode.

sim_outputA / sim_outputB:

This simulation input count for output 1 and output2.

When transducer is in simulation mode it accepts value in range of 0 to 10000 which corresponds to 0 to 100% of input parameter.

For Power Transducer it accepts value in range of -10000 to 10000 except that value should be greater than previously set Output start value.

Example for output 2 configured as voltage output:

Current transducer with CT primary 5Amps and CT secondary 5Amps and output 2 configured in voltage mode.

LCD display will show 2.5 Amps in input field and 5V in output field when count of 5000 is entered.

When multimeter in Volt mode is connected to output 2 terminal 3 and terminal 4 it will show 5 Volts.

ANALOG O/P TYPE A / ANALOG O/P TYPE B:

To configure output 1 (Output A) and output 2 (Output B) in voltage mode or current mode.

For Voltage Output, enter value equal to 1.

For Current Output, enter value equal to 2.

NOTE: DIP switch on PCB has to be changed to make configuration effective.

Output Para select: (Applicable only to Power Transducer)

To get output proportionate to one of the measured power parameter (Active / Reactive / Apparent/ Power Factor/ Phase Angle)

To select Active Power enter value 1.
To select Apparent Power enter value 2.
To select Reactive Power enter value 3.
To select Power Factor enter value 4.
To select Phase Angle enter value 5.

PT Primary (Volt):

This parameter accepts value in terms of Volts.

For power transducer allowed range is from 100Volts to 692800Volts, with consideration that presently written PT Primary value with the previously set CT Primary value would not result in maximum power of greater than 1000 MVA per phase.

PT Secondary (Volt):

This parameter accepts value in terms of Volts.
Allowed range is form 100Volts to 500Volts.

CT Primary (Amp):

This parameter accepts value in terms of Ampere.

Allowed range is 1 Amps to 9999 Amps.

For power transducer allowed range is from 1Amps to 9999 Amps with consideration that presently written CT Primary value with the previously set PT Primary value would not result in maximum power greater than 1000 MVA per phase.

CT Secondary (Amp):

This parameter accepts value in terms of Ampere.
Allowed range is form 1Amps to 5 Amps.

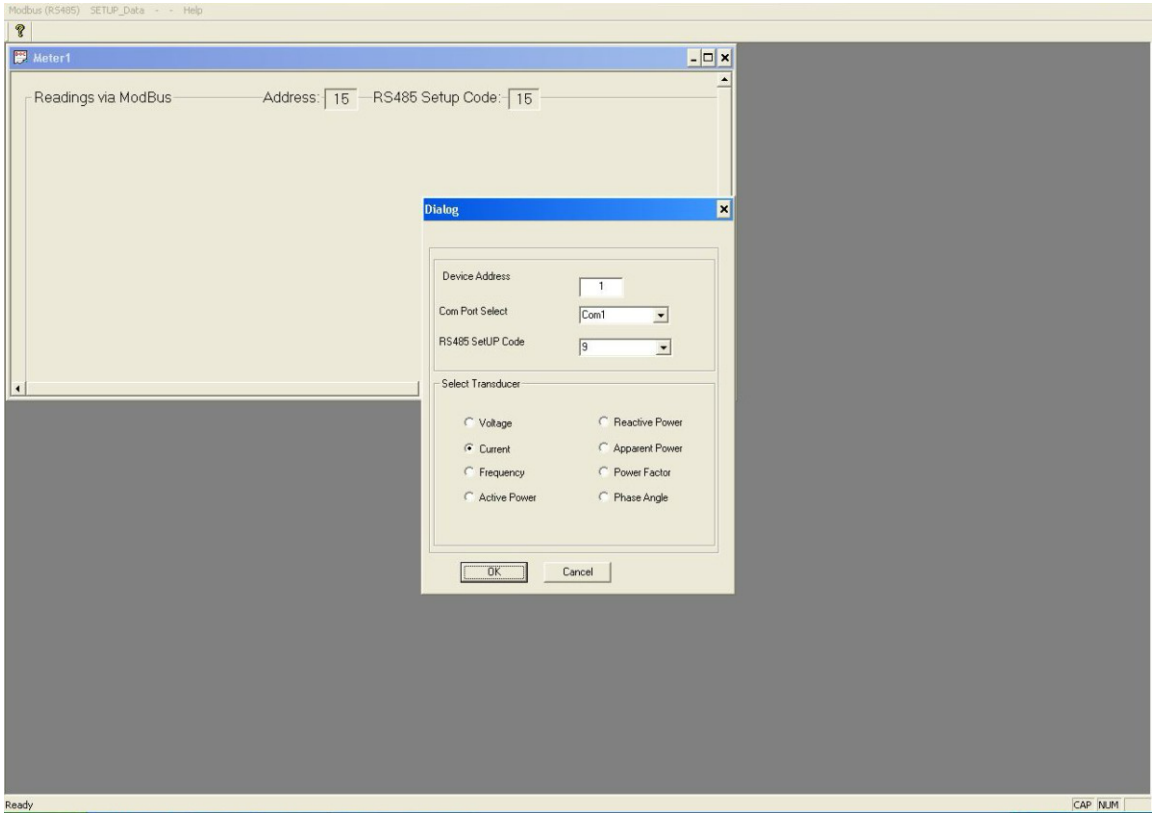
System Type: (Applicable only to Power Transducer)

Single Phase (1Ph2W) = 1
Three Phase three wire (3Ph3W) balanced = 2
Three Phase three wire (3Ph3W) unbalanced = 3
Three Phase Four wire (3Ph4W) unbalanced = 4
U12-I1 balanced = 5
U23-I1 balanced = 6
U31-I1 balanced = 7
Three Phase Four wire (3Ph4W) balanced= 8

For Reading Measured Parameter (3X registers)

Select the menu Modbus (RS485) Run”

Following screen will appeared



Select the COM port.
Select Device Address.
Select RS 485 setup.
Select Type of Transducer.
Click on “OK” button.
It will show the reading of selected parameter.