# **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

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Modbus (RS485) SETUP_Data Help	
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# 2) PRKAB5000 Programming window opens.

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	PRXAB 601 Programming         Parameter         Image: Parameter         Parameter         Parameter         Parameter         Parameter         O         Code         Stop Bar         Conse         PREAD         VPITE         PC CDM	
	CLOSE	

## 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).

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as (RS485) SETUP_Data Help	Modbus (RS485) SETUP_Data Help
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#### 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.

TRANSDUCER CONFIGURATION - Meteri
ordbus (RS485) SETUP_Data Help
Interview       ID Obvactivities       Smudation         Interview       Input Parameter       Spatem Type       PC CDM         INPUT       OUTPUT1       OUTPUT2       Input Parameter         Stat       Stat       Stat       Ebow         Ebow       Ebow       Ebow       Ebow       Ebow         End       Erd       End       End       Interview         R4/0       Output Type       Current       Output Type       Current         READ       VRITE       Current       Current       Current
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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.

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Modbus (RS485) SETUP_Data - Help		
<b>?</b>		
Meted	PRKA8 601 Programming     X       Parameter 10 Characteristics Simulation     PC CDM Contlete       Transducer Type     PC CDM Contlete       Output A     Output B       0     x       0     x       0     x	
	CLOSE	
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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:

Modbus (R2485) SETUP_Data Help	PRKAB 601 Programming	
	Parameter Perameter Perameter Perameter Parameter Parameter Parameter Device Address Parameter Data 0	
	PEAD     VPIITE     PC COM       Com1     ▼	
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- 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.

Modbus (RS465) SETUP_Data - Help	
Keter1      PBKAB 601 Programming      Parameter  10 Characteristics   Simulation	Field "Parameter Data" display read data or Enters the value needed to be programmed in Transducer. When this field is enabled for Perticular selected parameter.
Transducer Type     CURRENT     RS465_SETUP       Parameter     CT Secondary (Amp)     Parameter       CT Secondary (Amp)     C Odd     C Odd       Parameter Data     5     Stop Bit       S To Dia     C Odd     C Odd       C Othe     C Othe     Com	

In case 'RS485 set-up' parameter is selected

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Meter1	
PI8KAB 601 Programming Parameter   10 Characteristics   Simulation	Following options show the Set baud rate, parity, stop bit when button is clicked.
Transducer Type     RS485_SETUP       Parameter     Bd13.2.bps       Parameter     Parameter       RS485_set-up     O       Odd     Odd       Even     Stop Br       O     OK       Stop Br     OK       TWO     OK	
CLOSE	

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 to 500 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.

Modbus (RS405) SETLP_Data - Help	
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Input parameter System type selection	٦
PRSAB 601 Programming       X         Parameter       10 Characteristics         Transducer Type       Input Parameter         Start       00000         A       Start         Ebow       A         Evalue       Cutput Type         Cutput Type       Cutert         Cutput Type       Volage         Cutert       Volage	
Value in terms of Primary or Secondary Click read button To read the data	
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### **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.

Modbus (RS485) SETUP_Data Help		
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Input Start	PRKAB 601 Programming	Output 2 Start value selection
Value selection	Parameter ID Characteristics Simulation   Transducer Type Input Parameter System Type PC COM CURRENT Com1	
Input Elbow value selection	INPUT         OUTPUT1         OUTPUT2           Start         0.0000         A         Start         0.0000         mA           Ebow         A         Elbow         mA         Ebow         mA	Output 2 Elbow value selection
Input End value selection	End 50000 A Ratio Primary C Secondary READ CLOSE End 100000 mA End 200000 mA Durput Type Current Voltage Current Current Current	Fixed Output
Ready		CAP NUM

## 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.

Modbus (RS485) SETUP_Data - Help	
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PRKAB 601 Programming Parameter   10 Characteristics: Simulation   Transducer Type CLIRRENT PC COM Com1 Output A Output B 57 % START Simula STOP Simula	ation
	Field shows the simulated output value in terms of percentage depending on slider position
Ready	CAP NUM

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.

Modbus (RS485) SETUP_Data + - Help		
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	Select Transducer X	
	C Voltage Transducer	
	🧭 Current Transducer	
	requency francucer	
	C Power Transducer	
	OK	
Keady	CAP NUM	

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.

Nodbus (RS485) SETUP_Data Help			
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	A Research Andrews		
	Configuration of 4X_Register	*	
		Communication	
	RS485 setup code 9	Com Port Com1	
	C Read 4X Register		
		Device Address 1	
	(* Write 4X Register		
	Select the Decemeters for reading or writing		
	Select the Parameters for reading or writing		
	Parameter CT Primary (Amp)		
	Parameter Data		
	Send		
	Guit		
adv			CAP NIM
147			CAP HOM

**Definition 4x Parameters and allowed values:** 

RS485 set-up:

Baud	Parity	Stop	Decimal Values
Rate		Bits	
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

### RS485 Setup Code of Transducer

# **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

Readings via ModBus Address: 15 RS485 Setup Code: 15 Perice Address 1 Device Address 1 Com Port Select Con1 Select Transdocer C Volage C Reactive Power C Larent C Apparent Power
Readings via ModBus Address: 15 RS485 Setup Code: 15 Device Address 1 Device Address 1 Com Port Select Com1 × RS485 SetUP Code 9 × Select Transducer C Volage C Reactive Power
Readings via ModBus Address: 15 RS485 Setup Code: 15
C Frequency C Power Factor C Active Power C Phase Angle

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.

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Current1	ModEus Addre 0.5000	ess: 1 - RS486 Setup Code: 0 -		