

Paladin Advantage Universal Programmable Transducer

Software Programming Guide





CE

# Paladin Advantage—Programming Guide

The Paladin Advantage, 254-XZZ, is a programmable transducer which provides measurement isolation and conversion of all main electrical parameters into an industry standard DC output signal. The 254-XZZ can be used in single and three-phase balanced or unbalanced, 3 or 4 wire electrical systems. The 254-XZZ has an accuracy of CLO.2 and includes Modbus® (RS485) communications protocol and Pulse/Alarm output as standard.

#### General Information

The 254-XZZ is supplied programmed with up to 4 user defined Inputs and Outputs. It is, however, possible to re-program the device to suit any applica-

The unit is (re)programmed using the software available on the website. www.crompton-intsruments.com

and is called Paladin Advantage Utility Tool.

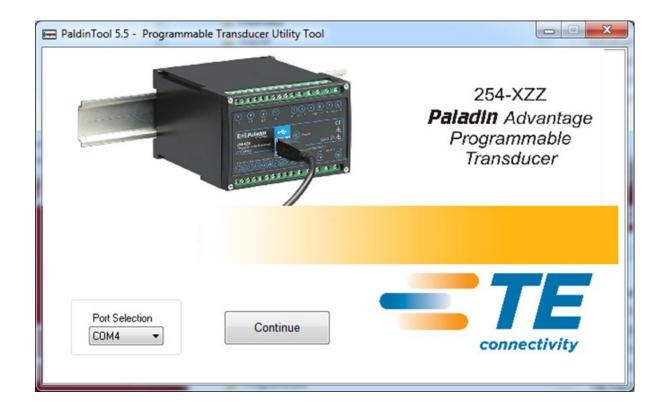
The PaladinTool utility runs on a Personal Computer (PC) with Microsoft Windows Operating System. The programmable transducer must be connected to the PC by a standard printer USB cable (not provided), and the auxiliary supply powered-on.

The USB connection to the transducer is fully isolated, allowing a safe programmability of the transducer itself even if it is completely wired to a live system.

#### Download and Installation

Please proceed in this order:

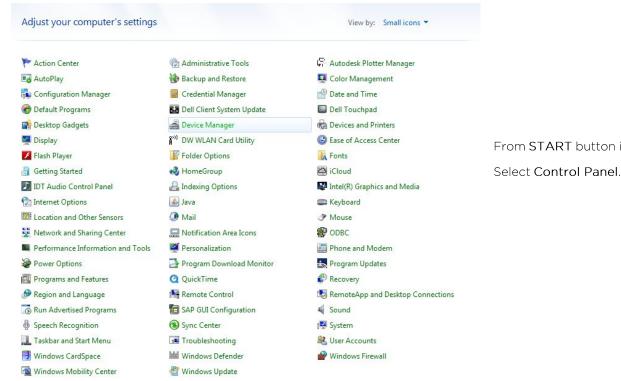
- Download the program from the website into a directory / folder of your choice. 2.2 Powe
- Power-on the transducer and connect it to the PC via the USB cable.
- The Windows Operating System will recognize the new connected device and automatically install the required drivers.
- 2.4 Launch the Paladin Advantage Utility Tool by double clicking on the PaladinTool.exe file (the utility does not need to be installed). Ignore, clicking on "OK", error messages relevant to COM(n) that may appear, and eventually the following window opens:
- 2.5 Select, from the Port Selection drop-down menu, the correct USB-COM port to which the programmable transducer is connected and then press "Continue". Details on how to find the correct COM port are detail overleaf.



# Finding the COM Number

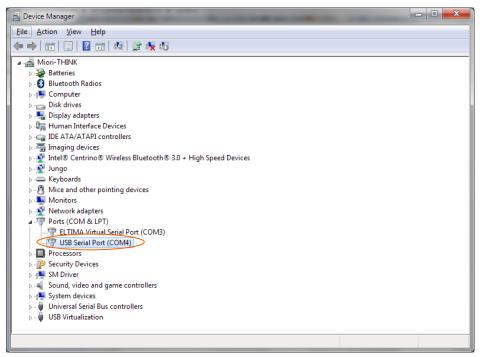
To know which is the correct USB-Com port, in Windows go to "Control Panel", then "System", then "Device Manager", then "Ports (COM & LPT)": there you should see to which number is associated the USB Serial Com Port.

#### Control Panel



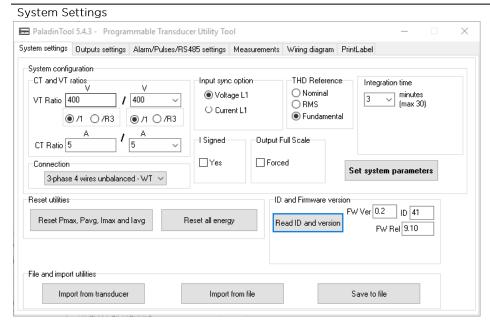
From START button in Windows.

#### Device Manager



Expand the selection under Ports (COM & LPT)

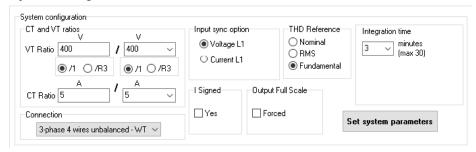
COM port number assigned with Serial USB Port is the correct one.



The System Settings tab is used to configure the Advantage transducer for the

- Main parameters of the electrical system.
- Reset the energy parameters
  Import and export the transducer settings and save to a file.

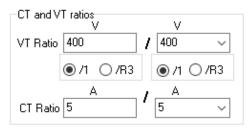
# System Configuration



Within system settings the system configuration is used to set the parameters of the electrical sys-

- CT and VT Ratio
- Input that the product uses for synchronisation
- Reference for the THD calcula-
- Integration period for the demand calculations
- System Type

# CT and VT Ratios



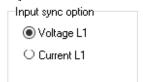
Enter the primary and secondary VT ratio

The secondary voltage is selectable from the drop down list.

Voltages can be entered at L-N (/1) or L-L (/R3) values.

The secondary current is selectable 5 or 1 Amp(s). Other secondary values are available.

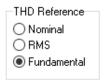
# Synchronisation



All electronic product rely on synchronisation to a particular input. The default is usually the Voltage L1 input as this is more stable.

Where Voltage L1 is not present synchronisation may be derived from the Current L1 input.

# THD



This sets the reference by which the THD is calculated.

I Signed

The default is Fundamental.

In systems with very low power consumption calculation from nominal may give a more accurate representation of the distortion in the system..

#### Demand Integration



This sets time for deperiod mand calculations. Max 30 mins

If checked, the output -I Signed signals related to the current measurements become bidirectional. ☐ Yes

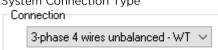
# Output Full Scale

Output Full Scale

Forced

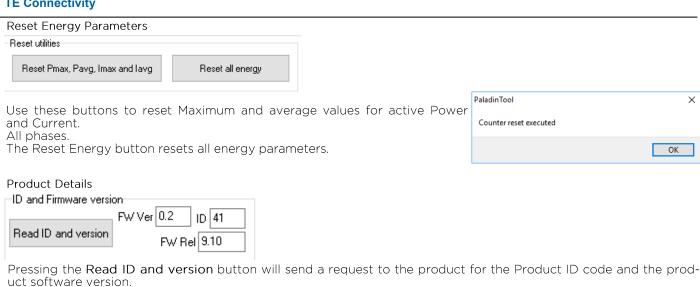
If checked, the output signal will not exceed nominal limits during overload conditions.

# System Connection Type



Select the electrical system type.

- 3 Phase 4Wire unbalanced (default) •
- 3 Phase 3Wire unbalanced
- 3 Phase 4Wire balanced
- 3 Phase 3Wire balanced
  - Single Phase



The response will be shown in the windows. (Numbers are for example only and will vary by product)

This can also be used to verify the communication between the PC and the product.

# Import / Save Configuration Settings



Should multiple products be required in the same electrical system. The above buttons can be use to save the configuration settings to a file on the connected PC.

This file can then be downloaded to multiple products using the button. Set system parameters

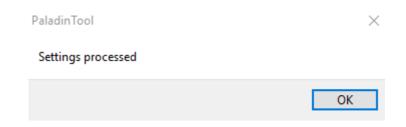


Import from file ware program Pressing this button saves the current configuration in the software to a file on the PC. Save to file This maybe an uploaded configuration from another product, modified or new.

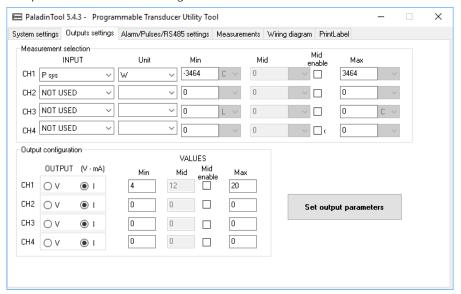
Downloding the parameters to the product

Set system parameters

Pressing this button downloads the current settings in the software to the product. Successful download will be indicated by the window below.



#### **Output Parameters and Settings**



The Output Settings tab is used to define and set the output of the transducer.

The product is available with two(2) outputs and four (4) outputs.

# Input Parameters—Table 1

Input Para	ameters—Tab	le 1
Button	ld	Description
Voltage	VL1 VL2 VL3 2VL12 VL23 VL31 AVG V12 V23 V31 AVG V1N V2N V3N DELTA V DELTA V IL1 IL2 IL3	Volts L1 - N Volts L2 - N Volts L3 - N Volts L1 - L2 Volts L2 - L3 Volts L3 - L1 Average Vvlt- age (L-L) Average (L-N) Volts diff L-L Volts diff L-N Current L1 Current L2 Current L3 Neutral I
	AVG II I2 I3 DELTA I II MAX I2 MAX I3 MAX II AVG I2 AVG I3 AVG	Average Current diff II Max demand I2 Max demand I3 Max demand Average I1 Average I2 Average I3
Active Power	P P1 P2 P3 PMAX PAVG	System power Power L1 Power L2 Power L3 Max power Average power
Reactive Power	Q Q1 Q2 Q3	System VAr System VAr L1 System VAr L2 System VAr L3
Apparent Power	S S1 S2 S3	System VA System VA L1 System VA L2 System VA L3
Power Factor	PF AVG PF1 PF2 PF3	Power factor Average PF PF L1 PF L2 PF L3
ANGLE	SYS ANGLE ANGLE L1 ANGLE L2 ANGLE L3	System Angle Phase Angle L1 Phase Angle L2 Phase Angle L3
THD	FREQ THDV1 THDV2 THDV3 THD I1 THD I2 THD I3	Frequency THD V1 THD V2 THD V3 THD I1 THD I2 THD I3
COSPHI	COSPHI 1 COSPHI 2	Displacement P.F Displacement P.F

COSPHI 3

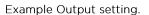
Displacement P.F

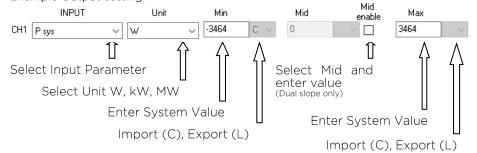
# Output Selection and Value

-Measurement sel INF		Unit Min		Mid Mid enable	Мах
CH1 P sys	v W	√ -3464	C ~ 0	~	3464
CH2 NOT USE	D ~	v 0	· · 0	~	0 ~
CH3 NOT USE	D ~	v 0	L ~ 0	~	0 C ~
CH4 NOT USE	D ~	~ O	~ 0		0 ~

Each output (channel) can be assigned to any of the electric system parameters shown in table 1.

Each parameter has an associated unit with Min, (mid), and Max values.





# **Output Values**



The output values can be V or mA. Should a mid point be selected in the parame-

ter above then the mid is automatically enabled here.

Settings processed

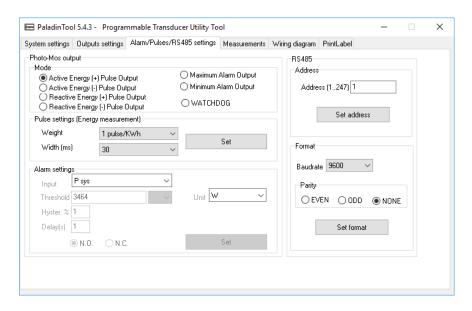
#### Output Values. Example



Set output parameters

OK

# Alarm / Pulsed and Communication Settings



The Alarm/Pulse/RS485 settings tab is used to set the additional outputs of the transducer.

- A solid state relay which can be configured to pulse or alarm output.
- Modbus ® protocol

Digital Output Configuration  -Mode  • Active Energy (+) Pulse Output  • Active Energy (-) Pulse Output  • Reactive Energy (+) Pulse Output		Maximum Alarm Output Minimum Alarm Output  WATCHDOG	
	nergy (-) Pulse Outp nergy measurement		
Weight	1 pulse/KWł	ı ~	
Width (ms)	30	~	Set
Alarm settings			
Input Ps	ys	~	
Threshold 348	64	~	Unit W
Hyster, % 1			
Delay(s) 1			
● N	I.O. O N.C.		Set
Digital Alarm M	lode		
	, ,	_	um Alarm Output im Alarm Output CHDOG
Pulsed Energy ulse settings (Energy	<u> </u>		
Weight	1 pulse/KWh	~	Set
Width (ms)	30	~	Set

This screen details the settings required for the digital output.

The unit is only fitted with one output

Both Pulse and Alarm in the same product Is not supported.

The solid state relay can be configured to operate as

- A pulsed output for active (W) or reactive(VAr) power.
- OR as a Min/Max Alarm

Selecting the pulse option activates the settings definitions for the pulsed output and deactivates (grey) the alarm settings.

Selecting the alarm option activates the settings definitions for the alarm output and deactivates (grey) the pulse settings.

Set

When the pulse parameters are defined, press the Set button to send the details to the product.



The Settings processed window confirms that the data has been stored in the product.



# 



PaladinTool

Settings processed

PaladinTool X

Settings processed

OK

If Alarm mode is selected. The above parameters need to be defined. The input parameter must be selected from the list in Table 2

The threshold at which the alarm should activate and the unit of measurement (eg. W, kW, MW)

Hysteresis as a percentage of the threshold value.

Delay in seconds for the alarm to activate

When all the parameters are defined. Pressing the Set button transfers the details to the product. The settings processed window confirms that the values have been stored.

# Modbus Parameters



The address of each Paladin Advantage can be set to any value between 1 and 247.

The baud rate is selectable from 9600 (default) 19200 38400

Parity is also selectable using the selection buttons.

Address (1...247) 1

Set address

Enter the correct address value and press the **Set address** button.

The product will respond with Settings processed to confirm that the details have been stored in the product.



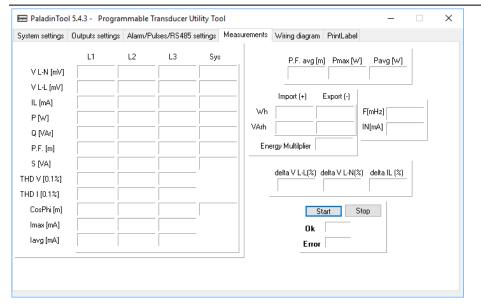
Select the baud rate and required parity and press the Set address button.
The product will respond with

Settings processed to confirm that the details have been stored in the product.

#### Alarm Parameters—Table 2

Voltage         VL1         Volts L1 - N           VL2         Volts L2 - N           VL3         Volts L3 - N           2VL12         Volts L1 - L2           VL31         Volts L3 - L1           AVG V12         Average Voltage (L-L)           AVG V1N         Average (Volts Diff L-L           V2N V3N         age (L-N)           DELTA V         Volts Diff L-N           Current         IL1         Current L3           IL2         Current L3           IN         Neutral I           AVG II I2 I3         Average           Current         L3           IN         Neutral I           AVG II I2 I3         Average           Current L3         Neutral I           AVG II I2 I3         Average           Current Diff         II MAX           II MAX         II Max Demand           I2 MAX         I2 Max Demand           I3 MAX         I3 Max Demand           I1 AVG         Average I2           Average I3         P           System Power         Power L1           POwer L1         Power L2           Power L2         Power L3           Power L4	Button	Id	Description
VL3	Voltage	1	
2VL12			
VL31		2VL12	Volts L1 - L2
AVG V12			
V23 V31			
V2N V3N		V23 V31	age (L-L)
DELTA V   DELTA VN   DELTA VN   DELTA VN   Volts Diff L-N		AVG V1N	Average Volt-
Current         IL1         Current L2           IL3         Current L3           IN         Neutral I           AVG II 12 I3         Average           Current         DELTA I         Current Diff           II MAX         I1 Max Demand         I2 Max Demand           I2 MAX         I3 MAX Demand         I1 AVG           I1 AVG         Average I1         I2 AVG           Average I3         P         System Power           P1         Power L1         Power L2           Power         P3         Power L3           PMAX         Max Power           PAVG         Average Power           Q         System VAr L1           Power         Q2         System VAr L2           Q3         System VA L3           S         System VA L1           Power         S1         System VA L1           Power         S2         System VA L2           Q3         System VA L2         System VA L2           S3         System VA L3         PF           PF         Power Factor         PF L1           PFA         Power Factor         PF L2           PF L3         PF L3			Volts Diff L-L
IL2			
IL3 IN Neutral I  AVG II 12 I3 AVerage Current  DELTA I II MAX II Max Demand I2 MAX I3 Max Demand I3 MAX I3 Max Demand I1 AVG Average I1 I2 AVG Average I2 I3 AVG Average I3 P System Power P1 Power L1 Power PAVG Average Power PAVG Average Power Q System VAr Power Q System VAr Q1 System VAr Q2 System VAr Q3 System VA L2 Q3 System VA L3 System VA L3 System VA L3 System VA L2 Q3 System VA L3 FP Power Factor PF AVG PF 1 PF 2 PF L1 PF2 PF L2 PF3 SYS ANGLE ANGLE L1 ANGLE L2 ANGLE L3 Phase Angle L3 FREQ Frequency THDVI THD VI THD V1 THD V2 THD V2 THD V2 THD V3 THD I3 THD I1 THD I1 THD I1 THD I2 THD I3 THD I3 COSPHI 1 COSPHI 1 COSPHI 2 COSPHI 2 Displacement P.F COSPHI 2 COSPHI 3 Displacement P.F VN-MAX123 L-N Max Volts V-MAX123 L-L Max Volts I-MAX123 Max Line Amps Supply failure	Current		
AVG II 12 I3  DELTA I DELTA I DELTA I DELTA I II MAX II Max Demand I2 MAX I2 Max Demand I3 MAX I3 Max Demand I1 AVG Average I1 I2 AVG Average I3  P System Power P1 Power L3 PMAX PAVERAGE POWER PAVG PAVG Average Power PAVG System VAr L1 System VA L2 Q3 System VA L3 System VA L3 System VA L3 System VA L3 PF Power Factor PF AVG PF AVG PF L2 PF L3 SYS ANGLE ANGLE L1 ANGLE L2 ANGLE L3 Phase Angle L3 PREQ FREQ FREQ FREQ FREQ FREQ FREQ FREQ F			
DELTA I DELTA I DELTA I DELTA I DELTA I DELTA I Current Diff II MAX II Max Demand I2 MAX I3 Max Demand I3 MAX I3 Max Demand I1 AVG Average I1 I2 AVG Average I3 P System Power P1 Power L2 Power P3 Power L3 PMAX Power PAVG Average Power Q System VAr Power Q1 System VAr L1 Q2 System VAr L2 Q3 System VAr L3 S S Apparent Power S1 S S System VA L1 Q2 System VA L1 System VA L1 System VA L1 System VA L1 Power S2 System VA L2 S3 System VA L3 PF Power Factor PF AVG PF1 PF2 PF L1 PF2 PF L2 PF3 SYS ANGLE ANGLE L1 ANGLE L2 ANGLE L3 Phase Angle L3 FREQ Frequency THDV1 THD V1 THD V1 THD V2 THD V2 THD V3 THD V3 THD V1 T		IN	
II MAX II Max Demand I2 Max Demand I3 MAX I3 Max Demand I1 AVG Average I1 I2 AVG Average I3 P System Power P1 Power L2 Power P3 Power L3 PMAX Max Power PAVG Average Power Q System VAr L1 Q2 System VAr L1 Q2 System VAr L2 Q3 System VAr L3 System VA L1 System VA L2 S3 System VA L3 PF AVG Average PF PF L1 PF L3 SYS ANGLE ANGLE L1 ANGLE L1 ANGLE L1 ANGLE L2 Phase Angle L1 ANGLE L3 Phase Angle L3 FREQ Frequency  THDV1 THDV1 THD V1 THD V1 THD V1 THD V1 THD V2 THD V2 THD V2 THD V2 THD V2 THD V3 THD I3 THD I4 THD		AVG 11 12 13	
I2 MAX		DELTA I	Current Diff
IS MAX IS Max Demand II AVG Average II IAVG Average II IZ AVG Average IZ IS AVG Average IS  P System Power P1 Power L2 Power L3 Power L3 Power L4 Average Power PaVG Average Power PaVG Average Power VAR Power Q1 System VAR L1 Q2 System VAR L2 Q3 System VAR L2 Q3 System VA L1 System VA L1 System VA L1 System VA L2 SS System VA L2 SS System VA L3 PF AVG Average PF PF L1 PF L1 PF L2 PF L3 PF L3 SYS ANGLE ANGLE L1 ANGLE L1 ANGLE L2 Phase Angle L1 ANGLE L3 Phase Angle L3 ANGLE L3 Phase Angle L3 FREQ Frequency  THDV1 THDV1 THD V1 THD V1 THD V1 THD V1 THD V2 THD V2 THD V2 THD V2 THD V3 THD IS L-N Max Volts V-MAX123 L-N Max Volts V-MAX123 L-N Max Volts I-MAX123 Max Line Amps Supply failure			
II AVG			
I3 AVG			
P System Power P1 Power L1 Power L2 Power L2 Power L3 Power L3 PMAX Max Power PAVG Average Power Q System VAr L1 Q2 System VAr L2 Q3 System VAr L2 Q3 System VAr L3 System VA L1 System VA L2 S3 System VA L3 PF Power S2 System VA L3 PF Power Factor PF AVG Average PF PF L1 PF2 PF L1 PF2 PF L3 SYS ANGLE ANGLE L1 ANGLE L1 ANGLE L1 ANGLE L2 Phase Angle L1 ANGLE L3 Phase Angle L3 FREQ Frequency THDV1 THD V1 THD V2 THD V2 THD V2 THD V2 THD V2 THD V2 THD I3 THD I3 THD I3 THD I3 COSPHI Displacement P.F COSPHI Displacement P.F COSPHI Displacement P.F VN-MAX123 L-N Max Volts V-MAX123 L-L Max Volts I-MAX123 Max Line Amps Supply failure			
Active P2 Power L1 Power L2 Power L3 PMAX Max Power PAVG Average Power Q System VAr Q1 System VAr L1 Q2 System VAr L2 Q3 System VA L3 S System VA L1 System VA L1 System VA L1 System VA L1 System VA L2 S3 System VA L2 S3 System VA L2 S3 System VA L3 PF Power Factor PF AVG Average PF PF L1 PF2 PF L2 PF3 PF L3 SYS ANGLE ANGLE L1 ANGLE L1 ANGLE L1 ANGLE L2 Phase Angle L1 ANGLE L3 Phase Angle L3 FREQ Frequency THDV1 THD V1 THDV2 THD V2 THD V3 THD V1 THD V2 THD V3 THD V1 T			
Power P3 Power L3 PMAX Max Power PAVG Average Power Q System VAr L1 System VAr L2 Q3 System VAr L2 Q3 System VAr L3 System VAr L3 System VAr L1 System VAr L3 System VAr L1 System VAr L3 System VA L1 System VA L1 System VA L1 System VA L2 S3 System VA L3 PF Power Factor PF AVG Average PF PF L1 PF L1 PF L2 PF L3 SYS ANGLE ANGLE L1 ANGLE L1 Phase Angle L1 ANGLE L2 ANGLE L3 Phase Angle L3 PREQ FREQ Frequency THDV1 THD V1 THD V1 THD V1 THD V2 THD V2 THD V3 THD V3 THD V3 THD I1 THD I1 THD I1 THD I1 THD I1 THD I2 THD I2 THD I3 THD I3 COSPHI Displacement P.F COSPHI Displacement P.F VN-MAX123 L-N Max Volts V-MAX123 L-L Max Volts I-MAX123 Max Line Amps WATCH-		1 '	
PMAX Max Power PAVG Average Power Q System VAr Reactive Power Q2 System VAr L2 Q3 System VAr L3 S System VAr L3 S System VA L1 Power S2 System VA L2 S3 System VA L3 PF Power Factor PF AVG Average PF PF L1 PF2 PF L2 PF3 PF L3 SYS ANGLE System Angle L1 ANGLE L1 Phase Angle L1 ANGLE L3 Phase Angle L3 FREQ Frequency THDV1 THD V1 THD V1 THD V2 THD V3 THD V1 THD			
PAVG Average Power Q System VAr Reactive Power Q2 System VAr L2 Q3 System VAr L3 S System VAr L3 S System VA L1 Power S2 System VA L2 S3 System VA L3 PF Power Factor PF AVG Average PF PF L1 PF2 PF L2 PF3 PF L3 SYS ANGLE ANGLE L1 ANGLE L1 Phase Angle L1 ANGLE L2 Phase Angle L3 FREQ Frequency THDV1 THD V1 THD V1 THD V1 THD V2 THD V3 THD V1 THD V	Power		
Reactive Power Q2 Q3 System VAr L2 Q3 System VAr L3 S S Apparent Power S2 S3 System VA L3 PF Power Factor PF AVG PF1 PF2 PF3 PF L3 SYS ANGLE ANGLE L1 ANGLE L1 ANGLE L2 ANGLE L3 Phase Angle L3 ANGLE L3 PREQ FREQ FREQ FREQ FREQ FREQ FREQ THDV1 THDV1 THDV1 THDV2 THD V2 THD V3 THD V1 THD V1 THD V1 THD V1 THD V1 THD V1 THD V2 THD V3 THD V3 THD V1 THD V2 THD V3 THD V1 THD V1 THD V2 THD V3 THD V1 THD V1 THD V2 THD V3 THD V1 T			Average Power
Power Q2 System VAr L2 Q3 System VAr L3  Apparent Power S1 System VA L1 S2 System VA L2 S3 System VA L2 S3 System VA L2 S3 System VA L3  PF POWER PEAVG Average PF PF L1 PF2 PF L2 PF3 PF L3 SYS ANGLE System Angle L1 ANGLE L1 Phase Angle L1 ANGLE L2 Phase Angle L2 ANGLE L3 Phase Angle L3 FREQ Frequency THDV1 THD V1 THD V1 THD V2 THD V2 THD V3 THD V1 THD V1 THD V1 THD V1 THD V1 THD V1 THD V2 THD V3 THD V1 THD V1 THD V1 THD V1 THD V1 THD V1 THD V2 THD V3 THD V1 THD V1 THD V2 THD V3 THD V1 THD V1 THD V2 THD V3 TH	Danation	T	
Apparent Power S1 System VA L1 Power S2 System VA L3 PF Power Factor PF AVG Average PF PF L1 PF2 PF L2 PF3 PF L3 SYS ANGLE System Angle Phase Angle L1 ANGLE L1 ANGLE L2 Phase Angle L2 ANGLE L3 Phase Angle L3 FREQ Frequency THDV1 THD V1 THD V1 THD V1 THD V2 THD V2 THD V3 THD V3 THD V1 THD V1 THD V1 THD V1 THD V1 THD V1 THD V2 THD V2 THD V3 THD V3 THD V1 THD V1 THD V1 THD V1 THD V1 THD V1 THD V2 THD V2 THD V3 THD V3 THD V1 THD V1 THD V1 THD V1 THD V2 THD V2 THD V3 THD V4 THD			
Apparent Power S2 S3 System VA L1 System VA L2 S3 System VA L3 PF Power Factor PF AVG PF1 PF2 PF3 SYS ANGLE ANGLE L1 ANGLE L1 ANGLE L2 ANGLE L3 Phase Angle L1 ANGLE L3 Phase Angle L3 FREQ FREQ Frequency THDV1 THDV1 THDV2 THD V1 THD V2 THD V3 THD V1 THD V2 THD V3 THD V1 THD V2 THD V3 THD V1 THD V			System VAr L3
Power S2 System VA L2 S3 System VA L3  PF POWER FACTOR PF AVG PF L1 PF2 PF L2 PF3 PF L3 SYS ANGLE System Angle L1 ANGLE L1 Phase Angle L1 ANGLE L2 Phase Angle L2 ANGLE L3 Phase Angle L3 FREQ Frequency THDV1 THD V1 THDV2 THD V2 THDV3 THD V3 THD V1 THD V2 THD V3 THD V1 THD V2 THD V3 THD V1 THD V2 THD V3	Annaront		
Power Factor Power Factor PF AVG Average PF PF1 PF L1 PF2 PF L2 PF3 PF L3 SYS ANGLE System Angle ANGLE L1 ANGLE L2 ANGLE L2 Phase Angle L1 ANGLE L3 Phase Angle L3 FREQ Frequency THDV1 THD V1 THDV2 THD V2 THDV2 THD V2 THDV3 THD V3 THD I1 THD I2 THD I3 THD I3 THD I3 COSPHI Displacement P.F COSPHI Displacement P.F VN-MAX123 L-N Max Volts V-MAX123 L-L Max Volts I-MAX123 Max Line Amps WATCH- SPF L1 PP AVG Average PF PF L1			System VA L2
Power Factor PF AVG PF L1 PF2 PF L2 PF3 PF L3 SYS ANGLE System Angle ANGLE L1 ANGLE L2 Phase Angle L2 ANGLE L3 Phase Angle L3 FREQ Frequency THDV1 THD V1 THDV2 THD V2 THD V3 THD V3 THD I1 THD I1 THD I2 THD I3 COSPHI Displacement P.F COSPHI Displacement P.F VN-MAX123 L-N Max Volts V-MAX123 L-L Max Volts V-MAX123 Max Line Amps WATCH-			
Power Factor		1 1 1	
ANGLE  ANGLE  ANGLE  ANGLE L1  ANGLE L2  ANGLE L3  Phase Angle L3  Phase Angle L3  Phase Angle L3  FREQ  THDV1  THDV1  THDV2  THD V2  THDV3  THD V3  THD V1  THD U1  THD U2  THD U1  THD U2  THD U3  THD U1  THD U1  THD U2  THD U3  THD U3  THD U1  THD U2  THD U3  T		PF1	PF L1
ANGLE  ANGLE L1  ANGLE L2  ANGLE L3  Phase Angle L3  Phase Angle L3  FREQ  Frequency  THDV1  THD V1  THD V2  THD V2  THD V3  THD V3  THD I1  THD I2  THD I2  THD I3  COSPHI 1  COSPHI 2  COSPHI 3  Displacement P.F  VN-MAX123  V-MAX123  V-MAX123  VATCH-  Supply failure  Vlase Angle L3  Phase Angle L3  THD V1  THD V1  THD V1  THD V2  THD V3  THD I3  THD I3  COSPHI 2  Displacement P.F  VN-MAX123  L-N Max Volts  V-MAX123  V-MAX123  VATCH-  Supply failure	1 40.01	—	
ANGLE L1 Phase Angle L1 Phase Angle L2 Phase Angle L2 Phase Angle L3 Phase Phase Angle L3 Phase Phase Angle L3 Phase Phase Angle L3 Phase		SYS ANGLE	
THD  THD I2 THD I3 THD	ANGI F		
THDV1 THD V1 THDV2 THD V2 THDV3 THD V3 THD I1 THD I1 THD I2 THD I2 THD I3 THD I3  COSPHI 1 Displacement P.F COSPHI 2 Displacement P.F VN-MAX123 L-N Max Volts V-MAX123 L-L Max Volts VATCH- Supply failure	,		
THDV1 THD V1 THDV2 THD V2 THDV3 THD V3 THD I1 THD I1 THD I2 THD I3 THD I3 THD I3  COSPHI 1 Displacement P.F COSPHI 2 Displacement P.F VN-MAX123 L-N Max Volts V-MAX123 L-L Max Volts I-MAX123 Max Line Amps WATCH- Supply failure			
THD THDV3 THD V3 THD I1 THD I1 THD I2 THD I3 THD I3 THD I3  COSPHI 1 Displacement P.F COSPHI 3 Displacement P.F VN-MAX123 L-N Max Volts V-MAX123 L-L Max Volts I-MAX123 Max Line Amps WATCH- Supply failure		THDV1	THD V1
THD II THD II THD II THD I2 THD I3 THD I3 THD I3  COSPHI 1 Displacement P.F COSPHI 3 Displacement P.F VN-MAX123 L-N Max Volts V-MAX123 L-L Max Volts I-MAX123 Max Line Amps WATCH- Supply failure			THD V2
THD I2 THD I3 THD I3  COSPHI 1  COSPHI 2 COSPHI 3  VN-MAX123 V-MAX123 I-MAX123 VATCH-  THD I2 THD I3  Displacement P.F Displacement P.F  L-N Max Volts Max Line Amps Supply failure	THD		THD II
COSPHI 1 Displacement P.F COSPHI 2 Displacement P.F COSPHI 3 Displacement P.F VN-MAX123 L-N Max Volts V-MAX123 L-L Max Volts I-MAX123 Max Line Amps WATCH- Supply failure			THD I2
COSPHI 2 Displacement P.F. COSPHI 3 Displacement P.F. VN-MAX123 L-N Max Volts V-MAX123 L-L Max Volts I-MAX123 Max Line Amps WATCH- Supply failure			
VN-MAX123 L-N Max Volts V-MAX123 L-L Max Volts I-MAX123 Max Line Amps WATCH- Supply failure	COSPHI		1
V-MAX123 L-L Max Volts I-MAX123 Max Line Amps WATCH- Supply failure			
I-MAX123 Max Line Amps WATCH- Supply failure			
WATCH- Supply failure			
DOG   or fault		WATCH-	Supply failure
		DOG	or fault

For further information on the Modbus® communications protocol including RS485 connectivity and address mapping please refer to the 254-XZZ Communications guide.



The measurements screen can be used to verify the values of the main electrical parameters.

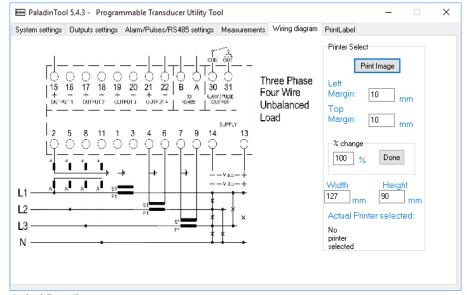
This screen can also be used to verify the communications with the product via the USB port.

For units of measurement please refer to the Modbus® communications guide.

Start Stop Pressing start will being the communication with the product. Successful data receipts are should in the **OK** window.

Pressing the stop button halts the data exchange.

#### Wiring Diagrams



Selection of the system type changes the wiring diagram to the correct.

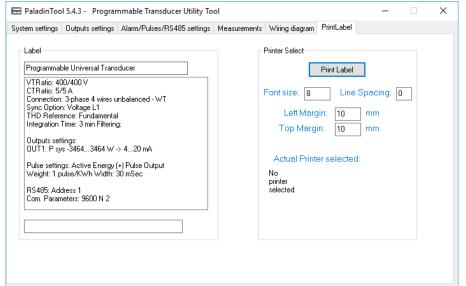
The wiring diagram can be printed to any printer installed on the PC.

Selection of the printer is made by pressing the button.

This can also be used to select the printer properties.

Print Image

# Label Details



Details enter from the other screens are summarised here.

Font, Line Spacing and margin can also be defined.

Selection of the printer is made by pressing the Print Label

This can also be used to select the printer properties.

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