

Basic Equipment information

Basic Equipment Information is located at the LHS of the main form. It is the minimum required information for doing a measurement. This contains motor rated parameters and calibration factors.

Basic equipment info

Rated freq (Hz):

75.00

Rated current (A):

1.84

Rated speed (RPM):

2,249.99

No of poles:

4

Nom slip (%):

0.00

Voltage L1 cal:

1

Voltage L2 cal:

1

Voltage L3 cal:

1

Current L1 cal:

1

Current L2 cal:

1

Current L3 cal:

1

☐ Use auto slip

Motor Rated Parameters

Knowing the **frequency** and the **voltage** of the motor 3-phase supply, you will find all motor rated values onto the motor plate. Below an example for a 50Hz, 230V Line to Line supply.

MOTOR RATED VALUES





Frequency and Power

Voltage and Winding configuration

Current

Power factor and Speed

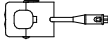











Bearings model number

3 ~ Motor	XXXXXX			Iso-CI	F	IP	55
	XXXXXX	IC	41	S	1	Kg	
50 Hz	0.25	kW		0.3		60 Hz	
 230	 400	V		 276	 480		
1.45	0.84	A		1.45		0.84	
Cos φ	0.72	1350	min-1	1620		Cos φ	0.72
NSK Bearings	AS	6202	NS	6202		XXXXXX	

The motor configuration (Star or Delta) rated voltage must match the voltage supply. This is applicable for all motors, including those with Delta/Star starter and those driven by Inverter. The rated voltage under inverter driven equipment is that achieved at the rated speed of the equipment application.

Calibration Factors

The calibration factors depend upon the selected hardware configuration as shown in table below. For more information about the hardware set up, please refer to the Hardware manual.

		Measuring points					
		Motor supply		Protection System Transformers		Test blocks	
Current	CT model	Split core 300A:10mA 		Spring clamp 10A:10mA 		Miniature 10A:10mA 	
	Measuring range	3 - 30A	30 - 300A	0.1 - 1A	1 - 10A	0.1 - 1A	1 - 10A
	Calibration factor	3,000	30,000	100 x Protection CT ratio	1,000 x Protection CT ratio	100 x Protection CT ratio	1,000 x Protection CT ratio
	Switch position	UP 	DOWN 	UP 	DOWN 	UP 	DOWN 
Voltage	Probe model	Dolphin clip 		Dolphin clip 		Banana adapter 	
	Measuring range	110 - 400V (Line to Line)		110 - 400V (Line to Line)		110 - 300V (Line to Line)	
	Calibration factor	1		Protection VT Ratio		Protection VT Ratio	

NOTE: Protection Current Transformer (CT) and Voltage Transformer (VT) ratios can be easily calculated by dividing its primary rated value by its secondary rated value.

Motor rated parameters can also be found in Equipment Information settings. Calibration factors can also be found in Channels settings.

Auto Slip

The Auto Slip tool allows the software to estimate the slip on every measurement depending upon the power drawn by the motor. For this tool to be effective and accurate, the motor rated values need to be those found on the motor plate. If they differ, the estimated slip will not be accurate and so the ability of the software to identify faults.

Equipment information

Motor

The equipment is driven by an Induction or synchronous motor.

Equipment information

Driver

Rated freq (Hz):50.03

☒ Set nom freq from first meas

Rated speed (RPM):2,894.99

Rated current (A):6.77

☒ Set nom ct from first meas

☒ Use auto slip

RE brg 1

Elements:8

Brg no:16001

Brg name:Not selected

IR freq:0

OR freq:0

Train freq:0

RE brg 2

Elements:8

Brg no:16001

Brg name:Not selected

IR freq:0

OR freq:0

Train freq:0

Journal brg

Ratio:0.42

Resonance

Freq (Hz):0

Brg db name:

HorizonBearings

Select fault table

☒ Specific

☐ Generic

Transmission1

Trans ratio (out/in):1.35

Belt drive

Belt driver dia (M):0.085

Belt spacing (M):0.14

Gearbox

Driver teeth:0

Resonance

Freq (Hz):0

Transmission 2

Trans 2

Trans ratio (out/in):1

Belt drive

Belt driver dia (M):0

Belt spacing (M):0

Gearbox

Driver teeth:0

Resonance

Freq (Hz):0

Driven1

RE brg 1

Elements:8

Brg no:16001

Brg name:Not selected

IR freq:0

OR freq:0

Train freq:0

RE brg 2

Elements:8

Brg no:16001

Brg name:Not selected

IR freq:0

OR freq:0

Train freq:0

Journal brg

Ratio:0.42

Resonance

Freq (Hz):0

Blades/vanes

No of blades/vanes:0

Driven 2

Driven 2

RE brg 1

Elements:8

Brg no:16001

Brg name:Not selected

IR freq:0

OR freq:0

Train freq:0

RE brg 2

Elements:8

Brg no:16001

Brg name:Not selected

IR freq:0

OR freq:0

Train freq:0

Journal brg

Ratio:0.42

Resonance

Freq (Hz):0

Blades/vanes

No of blades/vanes:0

Other information:

Save other info

Settings summary

In order to carry out automated fault identification, the P100 Series system needs to have information about the configuration of the equipment being monitored. This equipment information can be generic, in which case the system calculates a wide range of most-likely configuration values based on equipment type, number of poles, and slip only. This basic information can be entered either on the Equipment information form or on the Main form:

Generic equipment info

Nom fr (Hz):50.03241

☒ Set nom freq from first meas

Poles:4

Nom slip %:1

Nom ct A:5.73096

☒ Set nom ct from first meas

☒ Use auto slip

For more detailed and accurate analysis, the user can enter full equipment configuration details using the Equipment information form.

Motor settings

If the selected project is for a motor-driven system, the Equipment information form will be configured to collect information appropriate to this equipment only.

Driver

The user can enter the nominal frequency for the equipment or check the Set nominal frequency box to have the system set nominal frequency to the first measurement. Nominal current is set in the same way, with the option to use the first measured current. Number of poles and nominal slip must also be entered, with the option to adjust slip automatically based on the change of measured current from the nominal value.

Up to 2 rolling element bearings can be specified for the driver. Characteristic frequencies (shown as orders) can be calculated based on the number of elements, the bearing number (using the built-in bearing database), or by entering the frequencies manually (from a data sheet for example). For the first two methods the user selects the appropriate value from the drop-down box and then clicks the calculator key next to the box to calculate the characteristic frequencies. The Bearing name text box then shows the source of the bearing information.

If the driver has journal bearings then the characteristic response ratio for that bearing can be entered in the text box below the Journal bearing check box.

If the resonant frequency of the driver is known this can be entered in the text box below the Resonance check box.

Transmission 1

Transmission 1 is always selected, and its transmission ratio is entered in the Trans ratio text box.

Belt drive and gearbox details are then entered using the appropriate text boxes, along with the resonant frequency if this is known.

Driven 1

Driven 1 is always selected, and characteristic frequencies are calculated based on the transmission ration for Transmission 1.

Settings are as for the Driver, with the addition of a Blades/vanes option to cover equipment such as pumps and fans.

Transmission 2

Transmission 2 must be selected by the user if required, and is otherwise set up in the same way as Transmission 1.

Driven 2

Driven 2 must be selected by the user if required, and is otherwise set up in the same way as Driven 1.

Generator settings

If the selected project is for a generator system, the Equipment information form will be configured to collect information appropriate to this equipment only.

Driven

Generator information is entered in the same way as driver information for motor-driven equipment.

Transmission

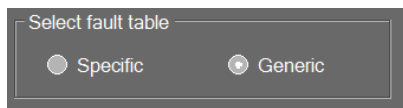
For generator systems, only one transmission is specified.

Driver

For generator systems, only one driver is specified.

Selecting generic or specific processing

The user can select either generic or specific fault identification by means of the radio buttons in the Select fault table panel:



Other information

General notes can be entered in the Other information text box. This information will be stored with the project and presented when the project is recalled.