

WAGO_493 v1.0

Allows cyclical reading of measured values of the 3-phase power measurement module.

Available Languages

Relay Ladder

WAGO_493	
Allows cyclical reading of measured valu...	
WAGO_493	? ...
ModuleInputs	?
ModuleOutputs	?
CurrentTransformerRatio	?
CurrentL1	?
CurrentL2	?
CurrentL3	?
VoltageL1	?
VoltageL2	?
VoltageL3	?
PowerFactorL1	?
PowerFactorL2	?
PowerFactorL3	?
EffectivePowerL1	?
EffectivePowerL2	?
EffectivePowerL3	?
ApparentPowerL1	?
ApparentPowerL2	?
ApparentPowerL3	?
EnergyConsumptionL1	?
EnergyConsumptionL2	?
EnergyConsumptionL3	?
SaveEnergyConsumption	?
DeleteEnergyConsumptionL1	?
DeleteEnergyConsumptionL2	?
DeleteEnergyConsumptionL3	
ErrorL1	
ErrorL2	
ErrorL3	

Function Block

WAGO_493 ...

Allows cyclical reading of measured value

ModuleInputs ?

ModuleOutputs ?

CurrentTransformerRatio CurrentL1

SaveEnergyConsumption CurrentL2

DeleteEnergyConsumptionL1 CurrentL3

DeleteEnergyConsumptionL2 VoltageL1

DeleteEnergyConsumptionL3 VoltageL2

VoltageL3

PowerFactorL1

PowerFactorL2

PowerFactorL3

EffectivePowerL1

EffectivePowerL2

EffectivePowerL3

ApparentPowerL1

ApparentPowerL2

ApparentPowerL3

EnergyConsumptionL1

EnergyConsumptionL2

EnergyConsumptionL3

ErrorL1

ErrorL2

ErrorL3

Structured Text
 WAGO_493(ModuleInputs, ModuleOutputs);

Parameters

Required	Name	Data Type	Usage	Description
X	WAGO_493	WAGO_493	InOut	Allows cyclical reading of measured values of the 3-phase power measurement module.
	EnableIn	BOOL	Input	
	EnableOut	BOOL	Output	
X	ModuleInputs	SINT	InOut	Input process image of WAGO 750-493 module.
X	ModuleOutputs	SINT	InOut	Output process image of WAGO 750-493 module.
	CurrentTransformerRatio	DINT	Input	Current transformer ratio (Ex. 50:5 CT = Ratio of 10)
	CurrentL1	DINT	Output	L1 Current (rms value) [A] Resolution = 0.001
	CurrentL2	DINT	Output	L2 Current (rms value) [A] Resolution = 0.001
	CurrentL3	DINT	Output	L3 Current (rms value) [A] Resolution = 0.001
	VoltageL1	DINT	Output	L1 Voltage (rms value) [V] Resolution = 0.1
	VoltageL2	DINT	Output	L2 Voltage (rms value) [V] Resolution = 0.1
	VoltageL3	DINT	Output	L3 Voltage (rms value) [V] Resolution = 0.1
	PowerFactorL1	DINT	Output	L1 Power Factor Resolution = 0.01
	PowerFactorL2	DINT	Output	L2 Power Factor Resolution = 0.01
	PowerFactorL3	DINT	Output	L3 Power Factor Resolution = 0.01
	EffectivePowerL1	DINT	Output	L1 Effective Power [W] Resolution = 0.1
	EffectivePowerL2	DINT	Output	L2 Effective Power [W] Resolution = 0.1

EffectivePowerL3	DINT	Output	L3 Effective Power [W] Resolution = 0.1
ApparentPowerL1	DINT	Output	L1 Apparent Power [VA] Resolution = 0.1
ApparentPowerL2	DINT	Output	L2 Apparent Power [VA] Resolution = 0.1
ApparentPowerL3	DINT	Output	L3 Apparent Power [VA] Resolution = 0.1
EnergyConsumptionL1	DINT	Output	L1 Energy Consumption (mWh)
EnergyConsumptionL2	DINT	Output	L2 Energy Consumption (mWh)
EnergyConsumptionL3	DINT	Output	L3 Energy Consumption (mWh)
SaveEnergyConsumption	BOOL	Input	On FALSE-to-TRUE transition, the energy consumption is saved to EEPROM
DeleteEnergyConsumptionL1	BOOL	Input	On FALSE-to-TRUE transition, the energy consumption of the first phase is deleted.
DeleteEnergyConsumptionL2	BOOL	Input	On FALSE-to-TRUE transition, the energy consumption of the second phase is deleted.
DeleteEnergyConsumptionL3	BOOL	Input	On FALSE-to-TRUE transition, the energy consumption of the third phase is deleted.
ErrorL1	DINT	Output	L1 Error code. (0x00: no error)
ErrorL2	DINT	Output	L2 Error code. (0x00: no error)
ErrorL3	DINT	Output	L3 Error code. (0x00: no error)

Extended Description

The WAGO_493 and WAGO_493_001 instructions allow measured values to be cyclically read from the WAGO 3-Phase Power Measurement Module. This Add-On Instruction can be used for reading measured values from one or multiple phases.

Use instruction WAGO_493 when using WAGO module 750-493 for 0-1A current transformers.
 Use instruction WAGO_493_001 when using WAGO module 750-493/000-001 for 0-5A current transformers.

Cyclic polling of the measured values is performed if the 'Enable' input is TRUE.

The 'ModuleInputs' and 'ModuleOutputs' arrays must be mapped to the 12-byte (SINT) input and output process images of the respective WAGO 750-493 power measurement module.

Use the Copy (COP) instruction to copy the 750-493 module's 12-byte (SINT) input process image (see 'Controller Tags') to a SINT[12] array for passing data to the 'ModuleInputs' InOut array. Perform this operation before calling the 750_493 Add-On Instruction.

Use the Copy (COP) instruction to copy the 750-493 module's 12-byte (SINT) output process image (see 'Controller Tags') from a SINT[12] array for passing data from the 'ModuleOutputs' InOut array. Perform this operation after calling the 750_493 Add-On Instruction.

The current transformer ratio can be entered via the 'CurrentTransformerRatio' input. For example, if a current transformer with a 50:5 current ratio is used, enter a value of 10 for this parameter.

The module registers the energy consumption in RAM and automatically saves these values to EEPROM on 15-minute intervals. A positive edge at the 'SaveEnergyConsumption' writes the energy consumption values to EEPROM on command.

A positive edge at the 'DeleteEnergyConsumptionLX' inputs deletes the stored energy consumption value of the respective phase.

The ErrorLX output for each phase indicates the following error conditions:

- 0x00 : No Error
- 0x01 : Undervoltage Threshold Exceeded
- 0x02 : Communication Timeout

Consult the WAGO 750-493 Product Manual for further information about the 3-Phase Power Measurement Module.

Execution

<u>Condition</u>	<u>Description</u>
EnableIn is true	

Revision v1.0 Notes