Documentation of the library WagoAppPowerMeasurement

Release 1.7.4.9

CONTENTS

CHAPTER

ONE

DESCRIPTION

This document is automatically generated.

Subject to Changes

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Personnel Qualification

All tasks that are carried out with libraries made for CODESYS 3 must only be performed by qualified electrical specialists instructed in PLC programming according to IEC 61131-3.

All tasks that have an effect on the properties or the behavior of automation hardware or software products must only be performed by qualified employees with a thorough knowledge of handling the products concerned.

Intended Use of CODESYS 3 Libraries

Libraries created for CODESYS 3 are used to simplify the development of application projects in the IEC 61131-3 programming languages.

For automation tasks, WAGO offers programmable logic controllers in a wide variety of performance classes. In combination with a wide range of I/O modules, the controllers can process standard types of field signals. Controllers can be implemented centrally or in decentralized configurations. The controllers offer interfaces for the most commonly used fieldbuses for use in decentralized configurations. Fieldbus independent I/O modules are then linked via fieldbus couplers. WAGO controllers offer a runtime environment for user programs called CODESYS 3. The following programming languages of the IEC 61131-3 standard are available:

- Structured Text (ST)
- Ladder Diagram (LD)
- Function Block Diagram (FBD)
- Instruction List (IL)
- Sequential Function Chart (SFC)
- Continuous Function Chart (CFC)

The individual programming languages can also be combined as required during the development of the software. A portfolio of prepared libraries can be accessed for many frequently used functions in order to make software development more efficient. This document provides an overview of the WagoAppPowerMeasurement that WAGO offers for CODESYS 3.

Handling module 750-493,750-494, 750-495, 3PPT (2857-570/xxx), 879-3000 MID

The function blocks of this library are NOT thread safe and must be called from one CODESYS task only! Concurrent calls from different tasks may cause loss or corruption of data.

CHAPTER

TWO

10 DOCUMENTATION

2.1 doc10_SystemProperties (FB)

Module 750-494/000-005 (shunt version): This module needs for configuration purposes the function block FbConfigurationAndStatus_494_Shunt as well as the visualization template tplConfiguration_494_Shunt.

CHAPTER

THREE

20 PROGRAM ORGANIZATION UNITS

3.1 3PPT(2857-570/xxx)

3.1.1 3PPT_MultiQuery

FbAC_Compact_3PPT_MultiQuery (FB)

Interface variables

Scope	Name	Type	Initial	Comment	Inh
Input	IMbMasterMultiQuery	I_MbMasterMultiQuery			FbD
	xEnable	BOOL			
	bUnitId	BYTE	1	SlaveAddress	
	tCycleTime	TIME	TIME#3s0ms	Intervall for reading values	
Output	xValid	BOOL			
Output	xBusy	BOOL			
Output	xError	BOOL			
Output	oStatus	WagoSysErrorBase.FbResult		status information	
Output	rTotalActivePower	REAL		Total Active Power [W]	
Output	rTotalReactivePower	REAL		Total Reactive Power [var]	
Output	rTotalApparentPower	REAL		Total Apparent Power [VA]	
Output	rTotalPowerFactorPF	REAL		Total Power Factor PF	
Output	rTotalActiveEnergy	REAL		Total Active Energy [Wh]	
Output	rTotalReactiveEnergy	REAL		Total Reactive Energy [varh]	
Output	rTotalApparentEnergy	REAL		Total Apparent Energy [VAh]	
Output	xRotatingField	BOOL		Rotating Field	
Output	aCurrent	ARRAY [1..3] OF REAL		Current [A]	
Output	rCurrentN	REAL		Current N [A]	
Output	xTamperDetect	BOOL		Tamper Detect	
Output	aOvercurrent	ARRAY [1..3] OF BOOL		Overcurrent	
Output	aVoltage_L_N	ARRAY [1..3] OF REAL		Voltage L-N [V]	
Output	aVoltage_Lx_Ly	ARRAY [1..3] OF REAL		Voltage Lx-Ly [V]	
Output	aUndervoltage	ARRAY [1..3] OF BOOL		Undervoltage	
Output	aOvervoltage	ARRAY [1..3] OF BOOL		Overvoltage	
Output	aActivePower	ARRAY [1..3] OF REAL		ActivePower [W]	
Output	aReactivePower	ARRAY [1..3] OF REAL		Reactive Power [var]	
Output	aApparentPower	ARRAY [1..3] OF REAL		Apparent Power [VA]	
Output	aCosPhi	ARRAY [1..3] OF REAL		CosPhi	
Output	aPowerFactorPF	ARRAY [1..3] OF REAL		Power Factor PF	
Output	aFrequency	ARRAY [1..3] OF REAL		Frequency [Hz]	
Output	aNoZero	ARRAY [1..3] OF BOOL		NoZero	

Table 1 – continued from previous page

Scope	Name	Type	Initial	Comment	Inh
Output	aVoltSag	ARRAY [1..3] OF BOOL		VoltSag	
Output	a4Quadrant	ARRAY [1..3] OF INT		4-quadrant display	

Function

This function block reads the most common AC values of the 3-Phase Power Transducer Module

Graphical Illustration

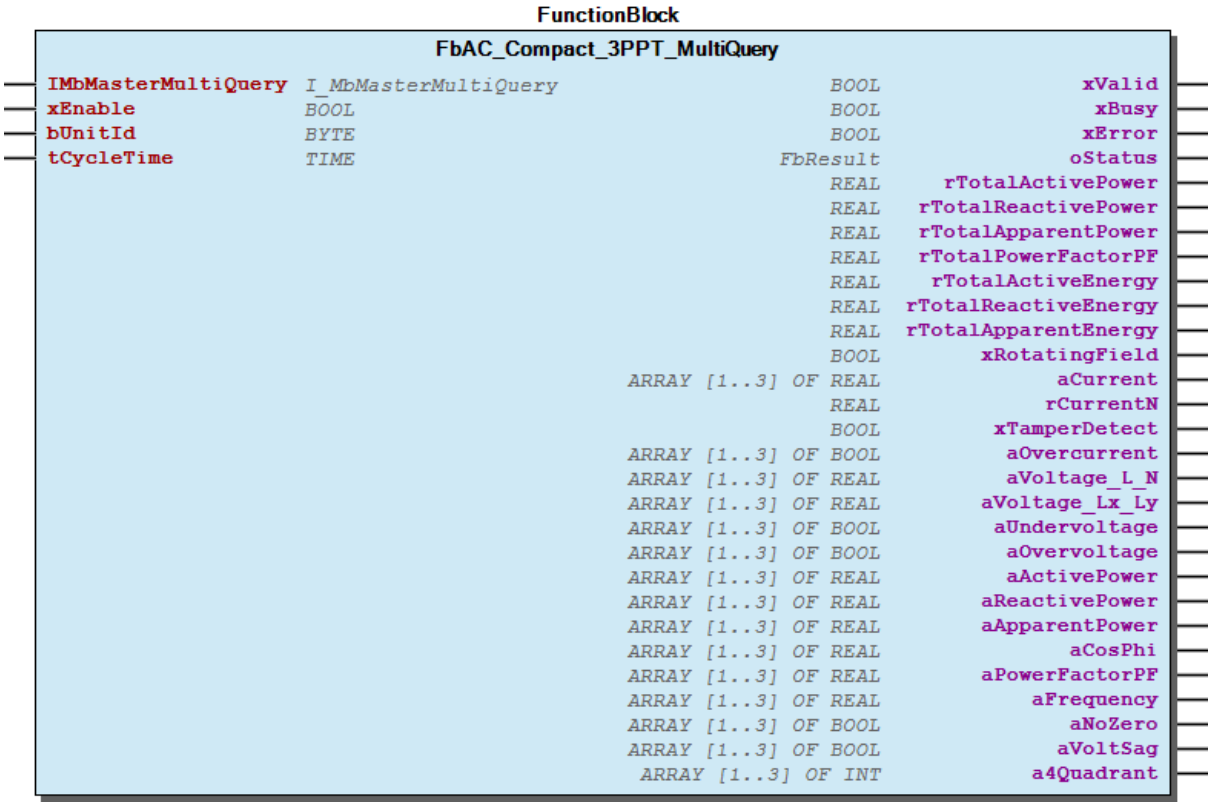
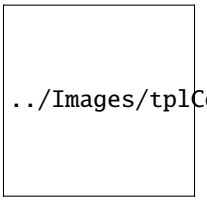


Fig. 1: Graphical Interface of FbAC_Compact_3PPT_MultiQuery

Function description

Visualization



Note: Since firmware 3 the output for the energy counter is in `kilo` as [kWh] or [kvarh] or [kVAh]

Note: The input `m_Input_Fb_3PPM_AC_Compact` is of type `FbAC_Compact_3PPT_Proxy`

Using this template needs an instance of function block FbAC_Compact_3PPT_Proxy as input.

FbAC_Compact_3PPT_MultiQuery.onError (METH)

Interface variables

Scope	Name	Type
Return	onError	BOOL
Input	IQuery	WagoAppPlcModbus.I_Query
Input	utResponse	WagoAppPlcModbus.typMbResponse
Input	oStatus	WagoSysErrorBase.FbResult

after each request with errors is method called

FbAC_Compact_3PPT_MultiQuery.onResponse (METH)

Interface variables

Scope	Name	Type
Return	onResponse	BOOL
Input	IQuery	WagoAppPlcModbus.I_Query
Input	utResponse	WagoAppPlcModbus.typMbResponse

FbAC_Compact_3WireWyeDelta_3PPT_MultiQuery (FB)

Interface variables

Scope	Name	Type	Initial	Comment	Inherited from
Input	IMbMasterMultiQueryMb	IMbMasterMultiQuery			FbDigitalTwinMbSlaveDevice
	xEnable	BOOL			
	bUnitId	BYTE	1	SlaveAddress	
	tCycleTime	TIME	TIME#1s0ms	Intervall for reading values	
Output	xValid	BOOL			
Output	xBusy	BOOL			
Output	xError	BOOL			
Output	oStatus	WagoSysErrorBase.FbResult		status information	
Output	rTotalActivePower	REAL		Total Active Power [W]	
Output	rTotalReactivePower	REAL		Total Reactive Power [var]	
Output	rTotalActiveEnergy	REAL		Total Active Energy [Wh]	
Output	rTotalReactiveEnergy	REAL		Total Reactive Energy [varh]	
Output	xRotatingField	BOOL		Rotating Field	
Output	aVoltage_Lx_Ly	ARRAY [1..3] OF REAL		Voltage Lx-Ly [V]	
Output	aCurrent	ARRAY [1..3] OF REAL		Current [A]	
Output	aAverageCurrent	ARRAY [1..3] OF REAL		Average Current [A]	
Output	aMinCurrent	ARRAY [1..3] OF REAL		Minimum Current [A]	
Output	aMaxCurrent	ARRAY [1..3] OF REAL		Maximum Current [A]	
Output	aOvercurrent	ARRAY [1..3] OF BOOL		Overcurrent	
Output	aFrequency	ARRAY [1..3] OF REAL		Frequency [Hz]	
Output	aMinFrequency	ARRAY [1..3] OF REAL		Minimum Frequency [Hz]	
Output	aMaxFrequency	ARRAY [1..3] OF REAL		Maximum Frequency [Hz]	
Output	aPeakValues	ARRAY [1..2] OF REAL		Peak current, peak voltage	

Function

This function block reads the most common AC values of the 3-Phase Power Transducer module if used with 3-Wire Wye/Delta topology

Graphical Illustration

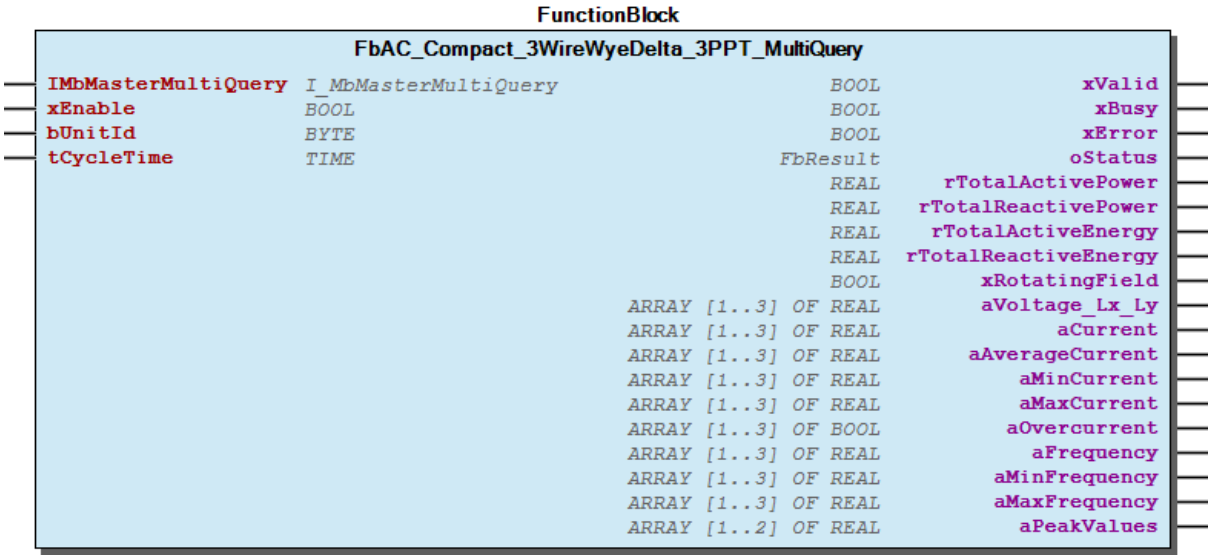
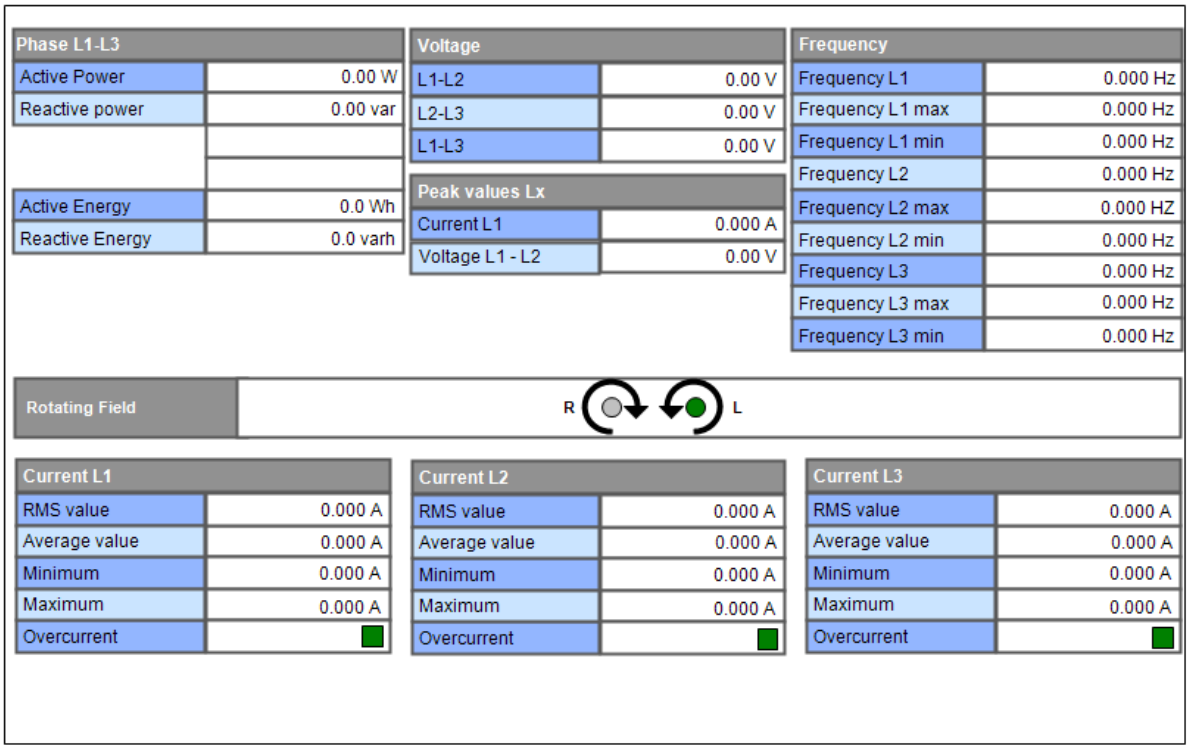


Fig. 2: Graphical Interface of FbAC_Compact_3WireWyeDelta_3PPT_MultiQuery

Function description

Visualization



Note: Since firmware 3 the output for the energy counter is in `kilo` as [kWh] or [kvarh]

Note: The input `m_Input_Fb_3PPM_AC_CompactAron` is of type `FbAC_Compact_3WireWyeDelta_3PPT`

Using this template needs an instance of function block FbAC_Compact_3WireWyeDelta_3PPT as input.

FbAC_Compact_3WireWyeDelta_3PPT_MultiQuery.onError (METH)

Interface variables

Scope	Name	Type
Return	onError	BOOL
Input	IQuery	WagoAppPlcModbus.I_Query
Input	utResponse	WagoAppPlcModbus.typMbResponse
Input	oStatus	WagoSysErrorBase.FbResult

after each request with errors is method called

FbAC_Compact_3WireWyeDelta_3PPT_MultiQuery.onResponse (METH)

Interface variables

Scope	Name	Type
Return	onResponse	BOOL
Input	IQuery	WagoAppPlcModbus.I_Query
Input	utResponse	WagoAppPlcModbus.typMbResponse

FbAC_General_3PPT_MultiQuery (FB)

Interface variables

Scop	Name	Type	Initial	Comment	Inherited from
Input	IMbMasterMultiQuery	I_MbMasterMultiQuery			FbDigitalTwinMbSlaveDevice
	bUnitId	BYTE	1	SlaveAddress	
	bQuantity	BYTE		tTimeOut : TIME:=T#1S; (* Cycletime for reading values II Zykluszeit für das Auslesen der Messwerte *)	
	wStartAddress	WORD			
	bFunctionCode	BYTE	4	3->configuration values, 4->measurement values	
Inout	xRead	BOOL			
	aData	POINTER TO WORD		xWrite : BOOL;	
Output	xValid	BOOL			
Output	xBusy	BOOL			
Output	xError	BOOL			
Output	oStatus	WagoSysErrorBase.FbResult		status information	

Function

This function block allows reading of configuration values as well as process values.

Graphical Illustration

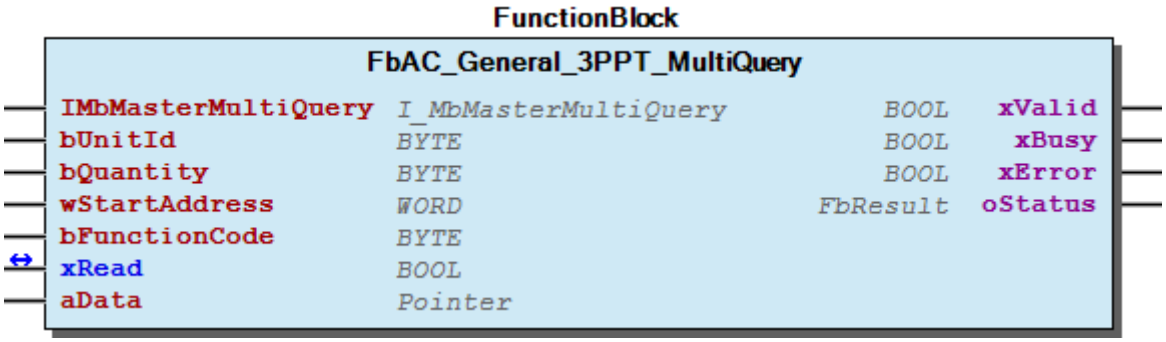


Fig. 3: Graphical Interface of FbAC_General_3PPT_MultiQuery

Function description

This function block is used to read any value described in the manual.

FbAC_General_3PPT_MultiQuery.onError (METH)

Interface variables

Scope	Name	Type
Return	onError	BOOL
Input	IQuery	WagoAppPlcModbus.I_Query
Input	utResponse	WagoAppPlcModbus.typMbResponse
Input	oStatus	WagoSysErrorBase.FbResult

after each request with errors is method called

FbAC_General_3PPT_MultiQuery.onResponse (METH)

Interface variables

Scope	Name	Type
Return	onResponse	BOOL
Input	IQuery	WagoAppPlcModbus.I_Query
Input	utResponse	WagoAppPlcModbus.typMbResponse

FbConfiguration_3PPT_MultiQuery (FB)

Interface variables

Scop	Name	Type	Ini-tial	Comment	Inherited from
In-put	IMbMasterMultiQuery	I_MbMasterMultiQuery			FbDigitalTwin-MbSlaveDevice
	xEnable	BOOL			
	bUnitId	BYTE	1	SlaveAddress	
In-out	xReadConfiguration	BOOL		Read configuration	
In-out	xWriteConfiguration	BOOL		Write configuration	
In-out	typ_3PPT_ExtendedCommands	*typ_3PPT_ExtendedCommands*		Commands like reset energy consumption	
In-out	typ_3PPT_Configuration	*typ_3PPT_Configuration*		Configuration values	
Out-put	xValid	BOOL			
Out-put	xBusy	BOOL			
Out-put	xError	BOOL			
Out-put	oStatus	WagoSysErrorBase.FbResult		status information	

Function

This function block reads or writes configuration values

Graphical Illustration

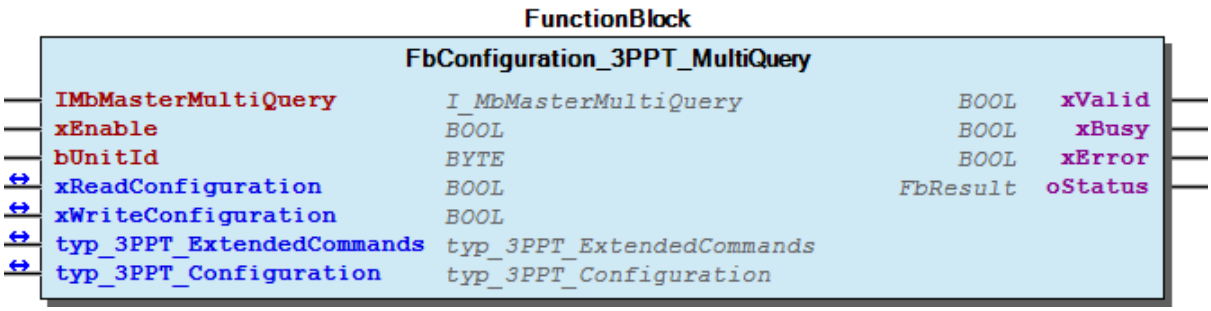
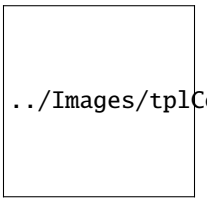


Fig. 4: Graphical Interface of FbConfiguration_3PPT_MultiQuery

Function description

Additional energy consumption may be reset or set.

Visualization



Note: The input `m_Input_typConfig_3PPM` is of type `typConfig_3PPM`

Using this template needs an instance of function block FbConfiguration_3PPT as input.

FbConfiguration_3PPT_MultiQuery.onError (METH)

Interface variables

Scope	Name	Type
Return	onError	BOOL
Input	IQuery	WagoAppPlcModbus.I_Query
Input	utResponse	WagoAppPlcModbus.typMbResponse
Input	oStatus	WagoSysErrorBase.FbResult

after each request with errors is method called

FbConfiguration_3PPT_MultiQuery.onResponse (METH)

Interface variables

Scope	Name	Type
Return	onResponse	BOOL
Input	IQuery	WagoAppPlcModbus.I_Query
Input	utResponse	WagoAppPlcModbus.typMbResponse

3.1.2 DataTypes

eEnergyConsumption (ENUM)

InOut:

Name
bActiveEnergySupplyL1
bActiveEnergyDeliveryL1
bReactiveEnergyInductiveL1
bReactiveEnergyCapacitiveL1
bApparentEneryL1
bActiveEnergySupplyL2
bActiveEnergyDeliveryL2
bReactiveEnergyInductiveL2
bReactiveEnergyCapacitiveL2
bApparentEneryL2
bActiveEnergySupplyL3
bActiveEnergyDeliveryL3
bReactiveEnergyInductiveL3
bReactiveEnergyCapacitiveL3
bApparentEneryL3

{attribute ‘qualified_only’} {attribute ‘strict’}

eMinMaxValue (ENUM)

InOut:

Name	Initial
Min_Current	0
Max_Current	1
Min_Voltage	2
Max_Voltage	3
Min_ActivePower	4
Max_ActivePower	5
Min_Frequency	6
Max_Frequency	7

{attribute ‘qualified_only’} {attribute ‘strict’}

e_3PPT_Feedback (ENUM)

InOut:

Name	Initial
PT_Ready	0
PT_ReadingSettings	1
PT_WritingSettings	2
PT_ErrorReadingSettings	3
PT_ErrorWritingingSettings	4
PT_ExecutingCommand	5
PT_ErrorExecutingCommand	6
PT_ErrorCommandValue	7
PT_ErrorTimeout	8
PT_ErrorCommunicationBase	9
PT_SetUpCommunication	10

{attribute 'qualified_only'} {attribute 'strict'}

typ_3PPT_ChannelConfig (STRUCT)

InOut:

Name	Type	Initial
rUnderVoltageThreshold	REAL	
rOverVoltageThreshold	REAL	
rOverCurrentThreshold	REAL	
wCurrentTransformerRatio	WORD	1
xEnableUserScaling	BOOL	
wIntervalMinMaxReset	WORD	
wIntervalForAverageCalcIndex	WORD	
wIntervalForPeakValue	WORD	
xAutoMinMaxReset	BOOL	

typ_3PPT_Configuration (STRUCT)

InOut:

Name	Type	Initial	Comment
rNoLoadEffectivePower	REAL		
rNoLoadReactivePower	REAL		
rNoLoadApparentPower	REAL		
wCurrentTransformerRatioN	WORD	1	
rTamperDetectionThreshold	REAL		
typChannelConfig	ARRAY [1..3] OF *typ_3PPT_ChannelConfig*		
wRogowskiType	WORD		
bPhasePeakSelect	BYTE	1	
xEnableUserScalingN	BOOL		
xIsRogowski	BOOL		only internal use
wVoltageTransformerRatio	WORD	1	
bTopologyIndex	BYTE		
rRogowskiCoilFactor	REAL		

typ_3PPT_ExtendedCommands (STRUCT)

InOut:

Name	Type
eEnergyConsumption	*eEnergyConsumption*
xDeleteAllMinMaxValue	BOOL
xDeleteMinMaxValue	BOOL
eMinMaxValue	*eMinMaxValue*
xFactorySettings	BOOL
xSaveEnergyConsumption	BOOL
xDeleteAllEnergyConsumption	BOOL
xSetEnergyConsumption	BOOL
dwEnergyConsumption	DWORD

3.1.3 FbAC_Compact_3PPT (FB)

Interface variables

Scope	Name	Type	Initial	Comment
Input	xEnable	BOOL		Activates the function block
	I_Port	WagoTypesCom.I_WagoSysComBase		Com port, either the onboard po
	bModbusAddress	BYTE		Modbus address of transducer
Inout	bToken	BYTE		This variable must be the same
Output	xValid	BOOL		High, if awData is valid
Output	xBusy	BOOL		Function block busy
Output	xError	BOOL		Error occured, details in oStatus
Output	oStatus	WagoSysErrorBase.FbResult		*Status* information
	tCycleTime	TIME	TIME#1s0ms	Intervall for reading values
Output	rTotalActivePower	REAL		Total Active Power [W]
Output	rTotalReactivePower	REAL		Total Reactive Power [var]
Output	rTotalApparentPower	REAL		Total Apparent Power [VA]

Table 2 – continued from previous page

Scope	Name	Type	Initial	Comment
Output	rTotalPowerFactorPF	REAL		Total Power Factor PF
Output	rTotalActiveEnergy	REAL		Total Active Energy [Wh] ->FV
Output	rTotalReactiveEnergy	REAL		Total Reactive Energy [varh] ->
Output	rTotalApparentEnergy	REAL		Total Apparent Energy [VAh] ->
Output	xRotatingField	BOOL		Rotating Field
Output	aCurrent	ARRAY [1..3] OF REAL		Current [A]
Output	rCurrentN	REAL		Current N [A]
Output	xTamperDetect	BOOL		Tamper Detect
Output	aOvercurrent	ARRAY [1..3] OF BOOL		Overcurrent
Output	aVoltage_L_N	ARRAY [1..3] OF REAL		Voltage L-N [V]
Output	aVoltage_Lx_Ly	ARRAY [1..3] OF REAL		Voltage Lx-Ly [V]
Output	aUndervoltage	ARRAY [1..3] OF BOOL		Undervoltage
Output	aOvervoltage	ARRAY [1..3] OF BOOL		Overvoltage
Output	aActivePower	ARRAY [1..3] OF REAL		ActivePower [W]
Output	aReactivePower	ARRAY [1..3] OF REAL		Reactive Power [var]
Output	aApparentPower	ARRAY [1..3] OF REAL		Apparent Power [VA]
Output	aCosPhi	ARRAY [1..3] OF REAL		CosPhi
Output	aPowerFactorPF	ARRAY [1..3] OF REAL		Power Factor PF
Output	aFrequency	ARRAY [1..3] OF REAL		Frequency [Hz]
Output	aNoZero	ARRAY [1..3] OF BOOL		NoZero
Output	aVoltSag	ARRAY [1..3] OF BOOL		VoltSag
Output	a4Quadrant	ARRAY [1..3] OF INT		4-quadrant display

Function

This function block reads the most common AC values of the 3-Phase Power Transducer Module

Graphical Illustration

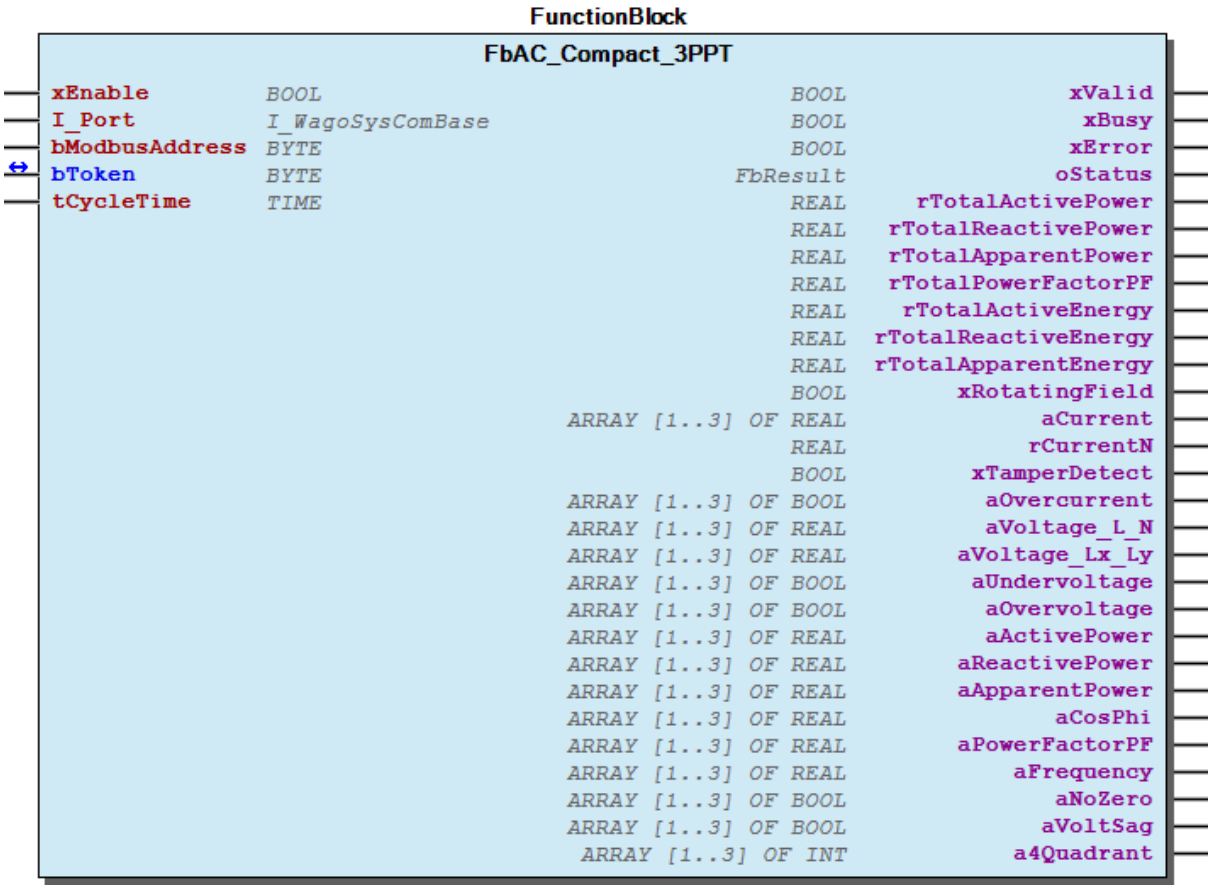


Fig. 5: Graphical Interface of FbAC_Compact_3PPT

Function description

Visualization

../Images/tplCompact_3PPT.png

Note: Since firmware 3 the output for the energy counter is in `kilo` as [kWh] or [kvarh] or [kVAh]

Note: The input `m_Input_Fb_3PPM_AC_Compact` is of type `FbAC_Compact_3PPT`

Using this template needs an instance of function block FbAC_Compact_3PPT as input.

3.1.4 FbAC_Compact_3WireWyeDelta_3PPT (FB)

Interface variables

Scop	Name	Type	Initial	Comment	Inher-ited from
In-put	xEnable	BOOL		Activates the function block	FbAC_Base_3PPT
	I_Port	WagoTypesCom.I_WagoSysComBase		Com port, either the onboard port or a serial terminal	FbAC_Base_3PPT
	bModbusAddress	BYTE		Modbus address of transducer	FbAC_Base_3PPT
In-out	bToken	BYTE		This variable must be the same for all function blocks on the same line	FbAC_Base_3PPT
Out-put	xValid	BOOL		High, if awData is valid	FbAC_Base_3PPT
Out-put	xBusy	BOOL		Function block busy	FbAC_Base_3PPT
Out-put	xError	BOOL		Error occured, details in oStatus	FbAC_Base_3PPT
Out-put	oStatus	WagoSysErrorBase.FbResult		*Status* information	FbAC_Base_3PPT
	tCycleTime	TIME	TIME#1s	Intervall for reading values	
Out-put	rTotalActivePower	REAL		Total Active Power [W]	
Out-put	rTotalReactivePower	REAL		Total Reactive Power [var]	
Out-put	rTotalActiveEnergy	REAL		Total Active Energy [Wh] ->FW3 [kWh]	
Out-put	rTotalReactiveEnergy	REAL		Total Reactive Energy [varh] ->FW3 [kvarh]	
Out-put	xRotatingField	BOOL		Rotating Field	
Out-put	aVoltage_Lx_Ly	ARRAY [1..3] OF REAL		Voltage Lx-Ly [V]	
Out-put	aCurrent	ARRAY [1..3] OF REAL		Current [A]	
Out-put	aAverageCurrent	ARRAY [1..3] OF REAL		Average Current [A]	
Out-put	aMinCurrent	ARRAY [1..3] OF REAL		Minimum Current [A]	
Out-put	aMaxCurrent	ARRAY [1..3] OF REAL		Maximum Current [A]	
Out-put	aOvercurrent	ARRAY [1..3] OF BOOL		Overcurrent	
Out-put	aFrequency	ARRAY [1..3] OF REAL		Frequency [Hz]	
Out-put	aMinFrequency	ARRAY [1..3] OF REAL		Minimum Frequency [Hz]	
Out-put	aMaxFrequency	ARRAY [1..3] OF REAL		Maximum Frequency [Hz]	
Out-put	aPeakValues	ARRAY [1..2] OF REAL		Peak current, peak voltage	

Function

This function block reads the most common AC values of the 3-Phase Power Transducer module if used with

3-Wire Wye/Delta topology

Graphical Illustration

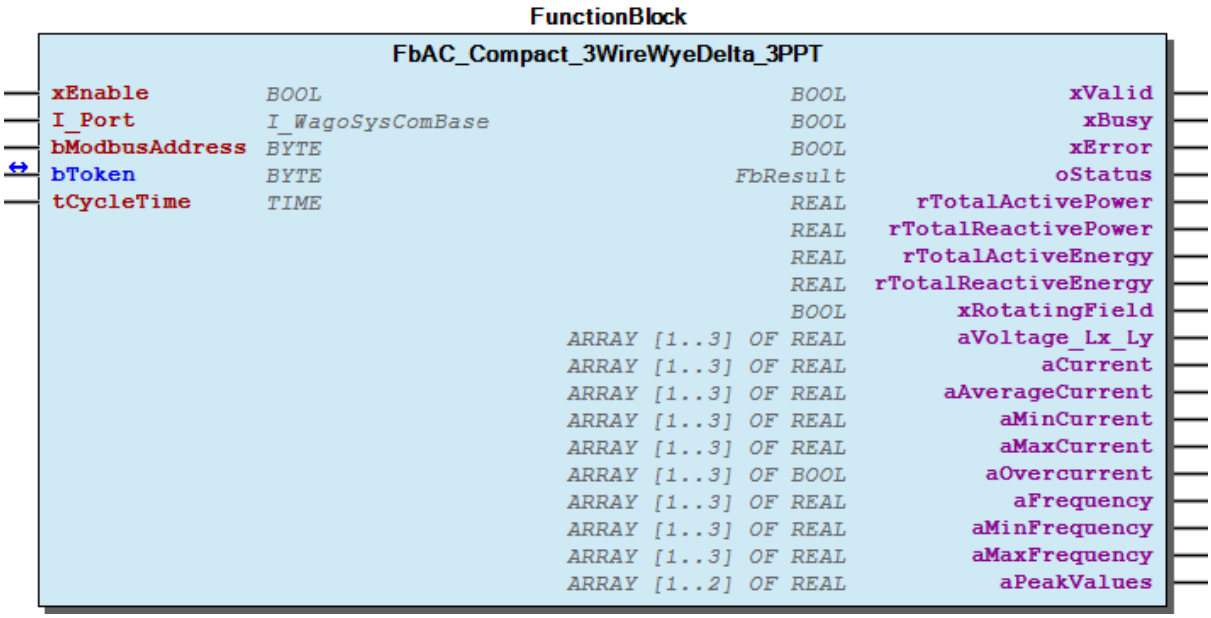
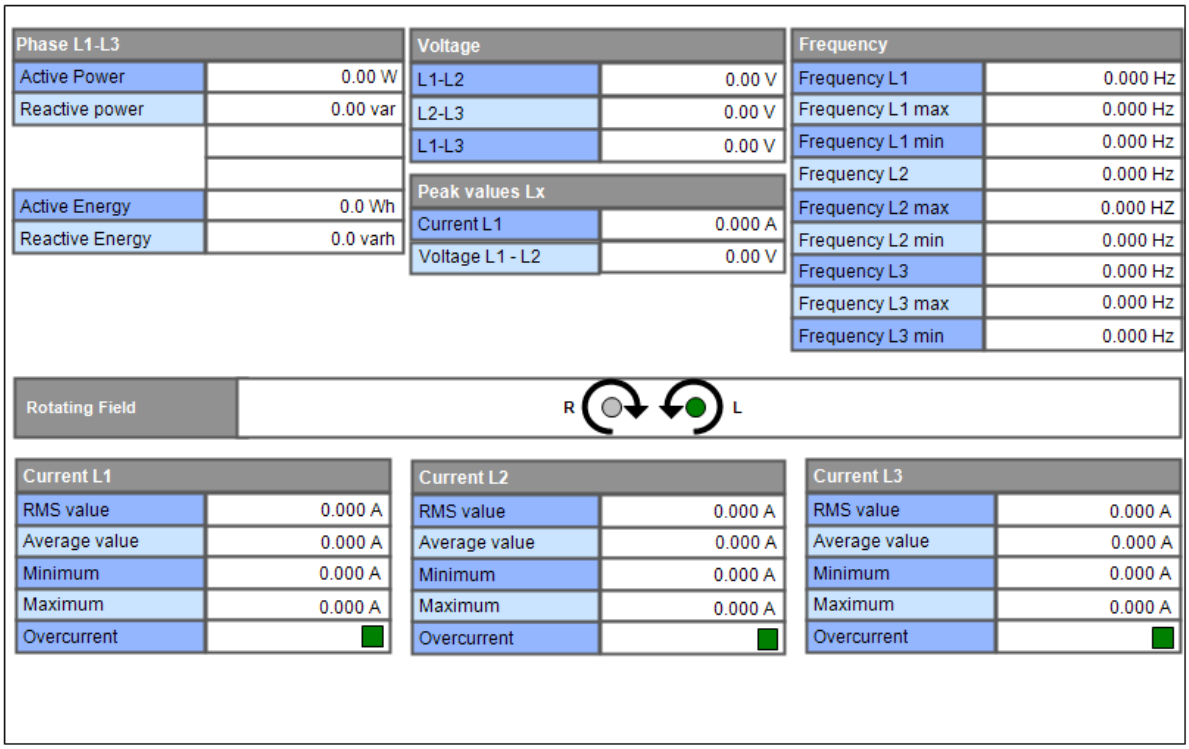


Fig. 6: Graphical Interface of FbAC_Compact_3WireWyeDelta_3PPT

Function description

Visualization



Note: Since firmware 3 the output for the energy counter is in `kilo` as [kWh] or [kvarh]

Note: The input `m_Input_Fb_3PPM_AC_CompactAron` is of type `FbAC_Compact_3WireWyeDelta_3PPT`

Using this template needs an instance of function block FbAC_Compact_3WireWyeDelta_3PPT as input.

3.1.5 FbAC_General_3PPT (FB)

Interface variables

Scop	Name	Type	Initial	Comment	Inherited from
Input	xEnable	BOOL		Activates the function block	FbAC_Base_3PPT
	I_Port	WagoTypesCom.I_WagoSysComBase		Com port, either the onboard port or a serial terminal	FbAC_Base_3PPT
	bModbusAddress	BYTE		Modbus address of transducer	FbAC_Base_3PPT
Inout	bToken	BYTE		This variable must be the same for all function blocks on the same line	FbAC_Base_3PPT
Output	xValid	BOOL		High, if awData is valid	FbAC_Base_3PPT
Output	xBusy	BOOL		Function block busy	FbAC_Base_3PPT
Output	xError	BOOL		Error occured, details in oStatus	FbAC_Base_3PPT
Output	oStatus	WagoSysErrorBase.FbResult		*Status* information	FbAC_Base_3PPT
	tTimeOut	TIME	TIME#1s0ms	Timeout for modbus communication	
	bQuantity	BYTE		Modbus command quantity	
	wStartAddress	WORD		Modbus command address	
	bFunctionCode	BYTE	4	Modbus function code: 3->configuration values, 4->measurement values	
Inout	xRead	BOOL		Start reading command, will be reset by the function block	
	aData	POINTER TO WORD		Requested data	

Function

This function block allows reading of configuration values as well as process values.

Graphical Illustration

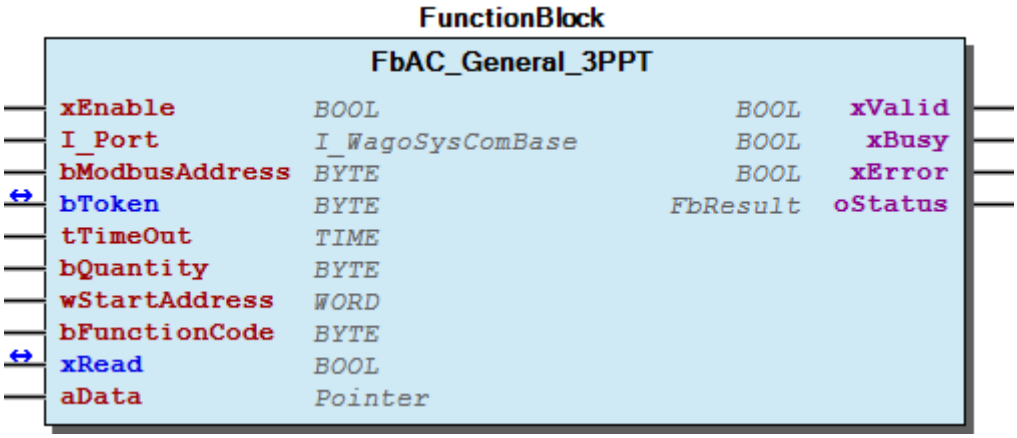


Fig. 7: Graphical Interface of FbAC_General_3PPT

Function description

This function block is used to read any value described in the manual.

3.1.6 FbConfiguration_3PPT (FB)

Interface variables

Scop	Name	Type	Comment	Inherited from
Input	xEnable	BOOL	Activates the function block	FbAC_Base_3PPT
	I_Port	WagoTypesCom.I_WagoSysComBase	Com port, either the onboard port or a serial terminal	FbAC_Base_3PPT
	bModbusAddress	BYTE	Modbus address of transducer	FbAC_Base_3PPT
Inout	bToken	BYTE	This variable must be the same for all function blocks on the same line	FbAC_Base_3PPT
Output	xValid	BOOL	High, if awData is valid	FbAC_Base_3PPT
Output	xBusy	BOOL	Function block busy	FbAC_Base_3PPT
Output	xError	BOOL	Error occured, details in oStatus	FbAC_Base_3PPT
Output	oStatus	WagoSysErrorBase.FbResult	*Status* information	FbAC_Base_3PPT
Inout	xReadConfiguration	BOOL	Read configuration	
Inout	xWriteConfiguration	BOOL	Write configuration	
Inout	typ_3PPT_ExtendedCommands	*typ_3PPT_ExtendedCommands*	Commands like reset energy consumption	
Inout	typ_3PPT_Configuration	*typ_3PPT_Configuration*	Configuration values	

Function

This function block reads or writes configuration values

Graphical Illustration

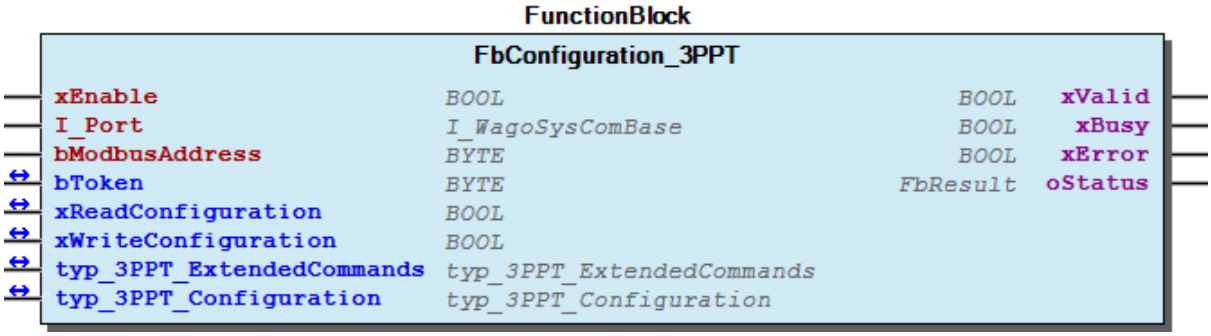


Fig. 8: Graphical Interface of FbConfiguration_3PPT

Function description

Additional energy consumption may be reset or set.

Visualization

../Images/tplConfiguration_3PPT.png

Note: The input `m_Input_typConfig_3PPM` is of type `typConfig_3PPM`

Using this template needs an instance of function block FbConfiguration_3PPT as input.

3.2 75x_493

3.2.1 FbMaster1Phase (FB)

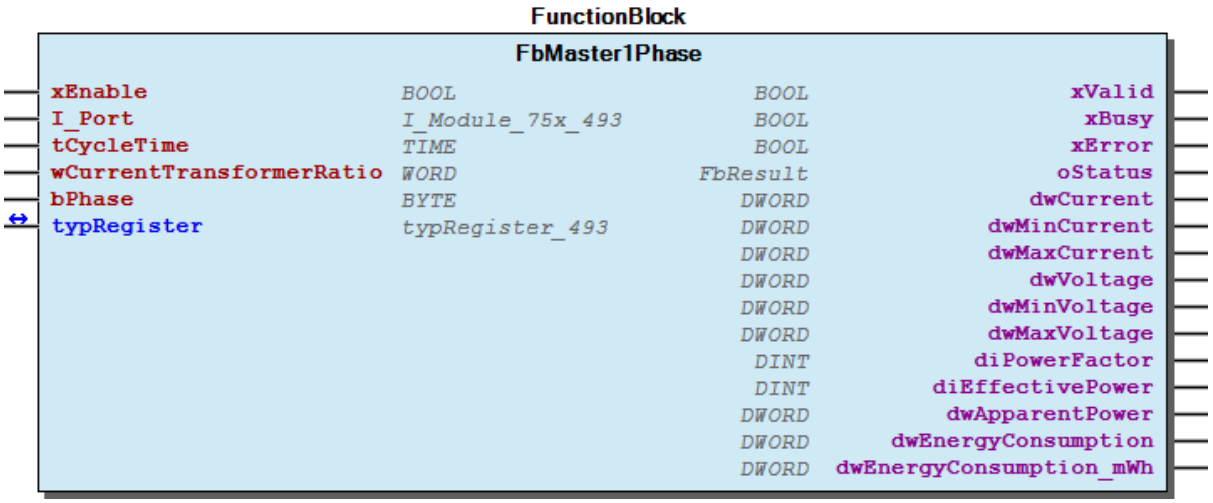
Interface variables

Scope	Name	Type	Initial	Comment
Input	xEnable	BOOL	TRUE	Release reading values from module
	I_Port	WagoTypesModule_75x_49x.I_Module_75x_493		Basic interface
	tCycleTime	TIME	TIME#1s0ms	Update intervall
	wCurrentTransformerRatio	WORD	1	Transformer ration (X : 1)
	bPhase	BYTE	1	Selected phase
Inout	typRegister	*typRegister_493*		Configuration values and control bits
Output	xValid	BOOL		High, if data is valid
Output	xBusy	BOOL		Function block busy
Output	xError	BOOL		Error occured, details in oStatus
Output	oStatus	WagoSysErrorBase.FbResult		*Status* information
Output	dwCurrent	DWORD		Rms-current: unit is 0,001A
Output	dwMinCurrent	DWORD		Minimum current: unit is 0,001A
Output	dwMaxCurrent	DWORD		Maximum current: unit is 0,001A
Output	dwVoltage	DWORD		Voltage: unit is 0,1 V
Output	dwMinVoltage	DWORD		Minimum voltage: unit is 0,1 V
Output	dwMaxVoltage	DWORD		Maximum voltage: unit is 0,1 V
Output	diPowerFactor	DINT		Power factor: unit is 0,001
Output	diEffectivePower	DINT		Effective power: unit is 0,1 W
Output	dwApparentPower	DWORD		Apparent power: unit is 0,1 VA
Output	dwEnergyConsumption	DWORD		Energy consumption: unit is Wh
Output	dwEnergyConsumptionMilli	DWORD		mWh

Function

Configuring one phase from the 3-Phase Power Measurement Module (750-493) and reading process values

Graphical Illustration



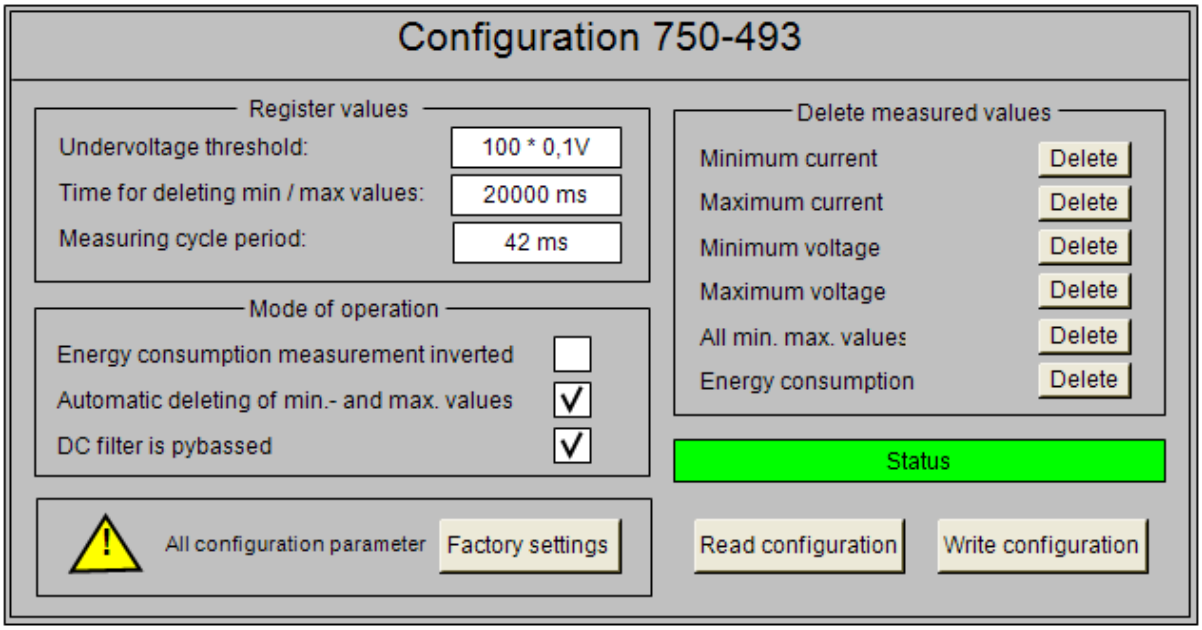
Function description

This function block allows the process values of one phase to be cyclically read and the configuration of the module to be changed. Cyclic polling of the process values is performed if the `xEnable` input is TRUE. The `tCycleTime` input parameter determines the cycle time. If the timeout time is exceeded or the undervoltage threshold is undershot, `bError` output indicates an error. Using transformers for current measurement, the current transformer ratio can be entered via the `wCurrentTransformerRatio` input. The current transformer ratio is always 1 : X.

General notes

- The 1-Phase Power Measurement Module (750-493) can record up to 4294 kWh * transmission ratio (energy consumption overrun at the earliest after 2.13 years).
- The 1-Phase Power Measurement module (750-493/000-001) can record up to 21470 kWh * transmission ratio (energy consumption overrun at the earliest after 2.13 years).
- Maximum current transformer ratio: 750-493 -> 1:1000 (transmission ratio 1000)
- 750-493/000-001 -> 5:1000 (transmission ratio 200)
- A positive edge at the `xEnable` input disables both user scaling (transformer ratio in the module) and scaling factor (scaling for energy consumption).
- When the current transformer ratio is changed afterwards, it is absolutely necessary to delete the energy consumption.

Visualization



Note: The input `m_Input_typRegister750_493` is of type `typRegister_493`

The template needs the variable at the input `typRegister` from function block FbMaster1Phase as input.

3.2.2 FbMaster3Phase (FB)

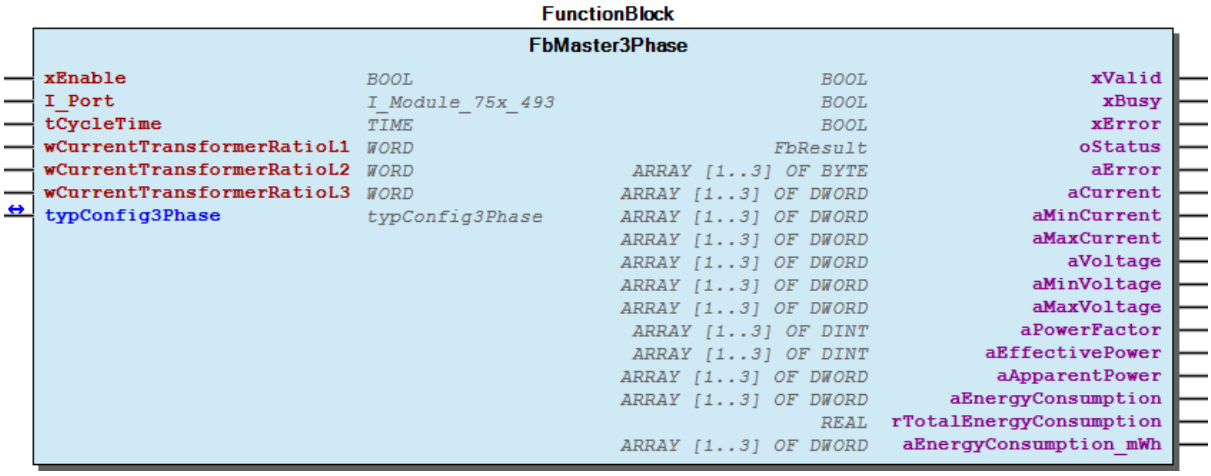
Interface variables

Scop	Name	Type	Initial	Comment
Input	xEnable	BOOL	TRUE	Release reading values from module
	I_Port	WagoTypesModule_75x_49x.I_Module_75x_493		Basic interface
	tCycleTime	TIME	TIME#1s0ms	Update intervall
	wCurrentTransformerRatioL1	WORD	1	Transformer ration L1 (X : 1)
	wCurrentTransformerRatioL2	WORD	1	Transformer ration L2 (X : 1)
	wCurrentTransformerRatioL3	WORD	1	Transformer ration L3 (X : 1)
Inout	typConfig3Phase	*typConfig3Phase*		Configuration values and control bits
Output	xValid	BOOL		High, if data is valid
Output	xBusy	BOOL		Function block busy
Output	xError	BOOL		Error occured, details in oStatus
Output	oStatus	WagoSysErrorBase.FbResult		*Status* information
Output	aError	ARRAY [1..3] OF BYTE		Error codes - see manual
Output	aCurrent	ARRAY [1..3] OF DWORD		Rms-current in mA
Output	aMinCurrent	ARRAY [1..3] OF DWORD		Minimum current: unit is 0,001A
Output	aMaxCurrent	ARRAY [1..3] OF DWORD		Maximum current: unit is 0,001A
Output	aVoltage	ARRAY [1..3] OF DWORD		Voltage: unit is 0,1 V
Output	aMinVoltage	ARRAY [1..3] OF DWORD		Minimum voltage: unit is 0,1 V
Output	aMaxVoltage	ARRAY [1..3] OF DWORD		Maximum voltage: unit is 0,1 V
Output	aPowerFactor	ARRAY [1..3] OF DINT		Power factor: unit is 0,001
Output	aEffectivePower	ARRAY [1..3] OF DINT		Effective power: unit is 0,1 W
Output	aApparentPower	ARRAY [1..3] OF DWORD		Apparent power: unit is 0,1 VA
Output	aEnergyConsumption	ARRAY [1..3] OF DWORD		using a transformer ratio <= 1000/X it takes at least 2,13 years to become an overflow
Output	rTotalEnergyConsumption	REAL		Total energy consumption: unit is kWh
Output	aEnergyConsumptionLow	ARRAY [1..3] OF DWORD		mWh

Function

Configuration from the 3-Phase Power Measurement Module (750-493) and reading process values

Graphical Illustration



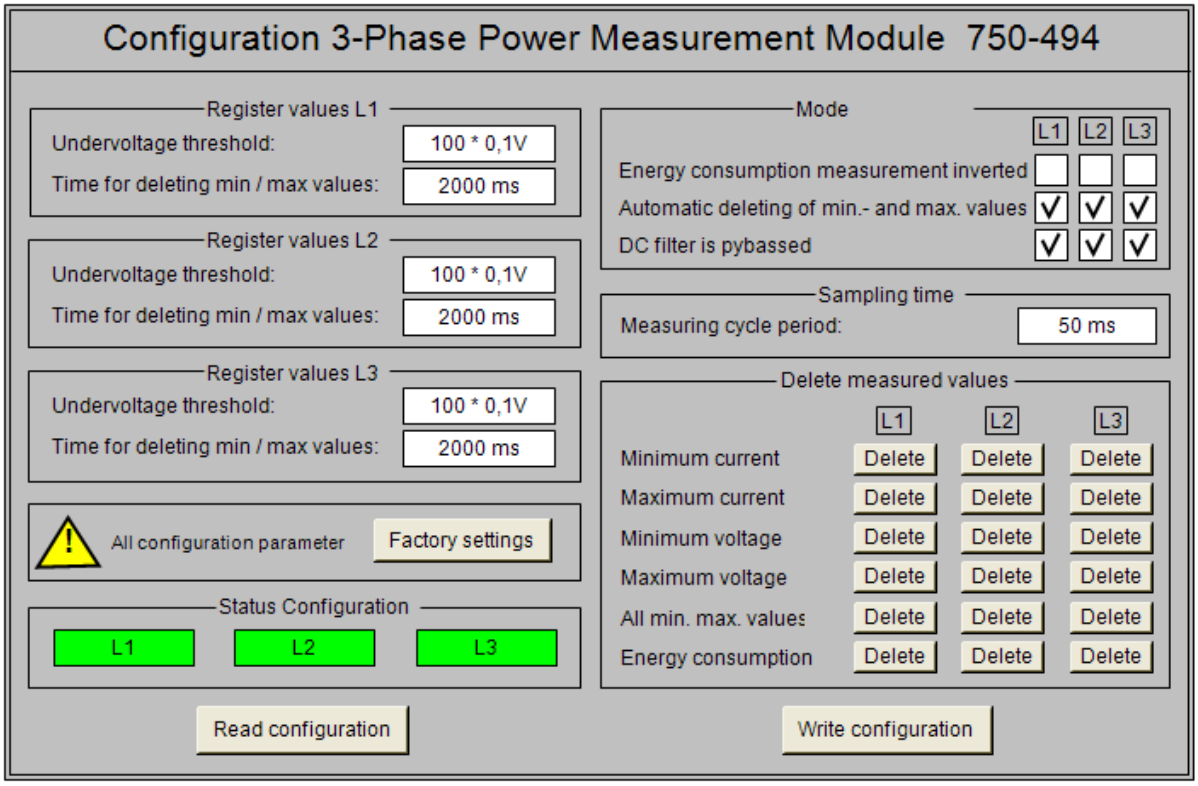
Function description

This function block allows the process values of 3 phases to be cyclically read and the configuration of the module to be changed. Cyclic polling of the process values is performed if the `xEnable` input is TRUE. The `tCycleTime` input parameter determines the cycle time. If the timeout time is exceeded or the undervoltage threshold is undershot, `bError` output indicates an error. Using transformers for current measurement, the current transformer ratio can be entered via the `wCurrentTransformerRatio` input. The current transformer ratio is always 1 : X.

General notes

- The 1-Phase Power Measurement Module (750-493) can record up to 4294 kWh * transmission ratio (energy consumption overrun at the earliest after 2.13 years).
- The 1-Phase Power Measurement Module (750-493/000-001) can record up to 21470 kWh * transmission ratio. (energy consumption overrun at the earliest after 2.13 years).
- Maximum current transformer ratio: 750-493 -> 1:1000 (transmission ratio 1000)
- 750-493/000-001 -> 5:1000 (transmission ratio 200)
- A positive edge at the `xEnable` input disables both user scaling (transformer ratio in the module) and scaling factor (scaling for energy consumption).
- When the current transformer ratio is changed afterwards, it is absolutely necessary to delete the energy consumption.

Visualization



Note: The input `m_Input_typConfig3Phase` is of type `typConfig3Phase`

The template needs the variable at the input `typConfig3Phase` from function block FbMaster3Phase as input.

3.2.3 typConfig3Phase (ALIAS)

Description: Configuration values for 750-493

3.2.4 typModeSetting (STRUCT)

InOut:

Name	Type	Comment
`UserScalingActivated`	`BOOL`	User scaling activated
`Reserved`	`BOOL`	Reserved
`WatchdogTimerNotActive`	`BOOL`	Watchdog timer not active
`FlexibleProcessImage`	`BOOL`	Flexible process image
`DC_FilterIsBypassed`	`BOOL`	DC filter is bypassed
`CosPhiWithSign`	`BOOL`	Cos phi with sign
`EngergyConsumptionInverted`	`BOOL`	Energy consumption inverted
`AutomaticDeletingMinMaxValues`	`BOOL`	Automaticaly deleting min max values

Description: Configuration values module 750-493

3.2.5 typRegister_493 (STRUCT)

InOut:

Name	Type	Comment
ModeSetting	*typModeSetting*	Mode setting
ScalingFactorEnergyLevel	WORD	Scaling factor energy level
UndervoltageThreshold	WORD	Undervoltage threshold
DivisorForTransformerRatio	WORD	Divisor for transformer ratio
TimeForDeletingMinMaxValues	WORD	Time for deleting min max values
MeasuringCycleTime	WORD	Measuring cycle time
ReadConfig	BOOL	Read config
WriteConfig	BOOL	Write config
FactoryDefault	BOOL	Factory default
ErrorConfig	BOOL	Error config
xSaveEnergyConsumption	BOOL	Save energy consumption
xDeleteEnergyConsumption	BOOL	Delete energy consumption
xDeleteMinCurrent	BOOL	Delete min current
xDeleteMaxCurrent	BOOL	Delete max current
xDeleteMinVoltage	BOOL	Delete min voltage
xDeleteMaxVoltage	BOOL	Delete max voltage
xDeleteMinMaxValues	BOOL	Delete min max values

Description: Configuration values for the modul 750-493

3.3 75x_494

3.3.1 04 DataTypes

e494AC_Values (ENUM)

InOut:

Name	Initial	Comment
RmsCurrentL1	1	Rms current L1
RmsCurrentL2	2	Rms current L2
RmsCurrentL3	3	Rms current L3
RmsVoltageL1_N	4	Rms voltage L1-N
RmsVoltageL2_N	5	Rms voltage L2-N
RmsVoltageL3_N	6	Rms voltage L3-N
EffectivePowerL1	7	Effective power L1
EffectivePowerL2	8	Effective power L2
EffectivePowerL3	9	Effective power L3
ReactivePowerL1	10	Reactive power L1
ReactivePowerL2	11	Reactive power L2
ReactivePowerL3	12	Reactive power L3
ApparentPowerL1	13	Apparent power L1
ApparentPowerL2	14	Apparent power L2
ApparentPowerL3	15	Apparent power L3
FrequencyL1	16	Frequency L1
FrequencyL2	17	Frequency L2

continues on next page

Table 3 – continued from previous page

Name	Initial	Comment
FrequencyL3	18	Frequency L3
PhaseAngle_U_I_L1	19	Phase angle U-I L1
PhaseAngle_U_I_L2	20	Phase angle U-I L2
PhaseAngle_U_I_L3	21	Phase angle U-I L3
PowerFactorCosPhiL1	22	Power factor cos phi L1
PowerFactorCosPhiL2	23	Power factor cos phi L2
PowerFactorCosPhiL3	24	Power factor cos phi L3
PowerFactorPF_L1	25	Powerfactor pf L1
PowerFactorPF_L2	26	Powerfactor pf L2
PowerFactorPF_L3	27	Powerfactor pf L3
PowerFactorLF_L1	28	Powerfactor lf L1
PowerFactorLF_L2	29	Powerfactor lf L1
PowerFactorLF_L3	30	Powerfactor lf L1
PhaseConductorVoltageL1_L2	31	Phase conductor voltage L1-L2
PhaseConductorVoltageL1_L3	32	Phase conductor voltage L1-L3
PhaseConductorVoltageL2_L3	33	Phase conductor voltage L2-L3
MaximumRmsCurrentL1	34	Maximum rms Current L1
MaximumRmsCurrentL2	35	Maximum rms Current L2
MaximumRmsCurrentL3	36	Maximum rms Current L3
MinimumRmsCurrentL1	37	Minimum rms Current L1
MinimumRmsCurrentL2	38	Minimum rms Current L2
MinimumRmsCurrentL3	39	Minimum rms Current L3
AverageRmsCurrentL1	40	Average rms current L1
AverageRmsCurrentL2	41	Average rms current L2
AverageRmsCurrentL3	42	Average rms current L3
MaximumRmsVoltageL1_N	43	Maximum rms voltage L1-N
MaximumRmsVoltageL2_N	44	Maximum rms voltage L2-N
MaximumRmsVoltageL3_N	45	Maximum rms voltage L3-N
MinimumRmsVoltageL1_N	46	Minimum rms voltage L1-N
MinimumRmsVoltageL2_N	47	Minimum rms voltage L2-N
MinimumRmsVoltageL3_N	48	Minimum rms voltage L3-N
AverageRmsVoltageL1_N	49	Average rms voltage L1-N
AverageRmsVoltageL2_N	50	Average rms voltage L2-N
AverageRmsVoltageL3_N	51	Average rms voltage L3-N
MaximumEffectivePowerL1	52	Maximum effective power L1
MaximumEffectivePowerL2	53	Maximum effective power L2
MaximumEffectivePowerL3	54	Maximum effective power L3
MinimumEffectivePowerL1	55	Minimum effective power L1
MinimumEffectivePowerL2	56	Minimum effective power L1
MinimumEffectivePowerL3	57	Minimum effective power L1
MaximumFrequencyL1	58	Maximum frequency L1
MaximumFrequencyL2	59	Maximum frequency L2
MaximumFrequencyL3	60	Maximum frequency L3
MinimumFrequencyL1	61	Minimum frequency L1
MinimumFrequencyL2	62	Minimum frequency L2
MinimumFrequencyL3	63	Minimum frequency L3
ActiveEnergyL1	64	Active energy L1
ActiveEnergyL2	65	Active energy L2
ActiveEnergyL3	66	Active energy L3
ActiveEnergyIncomingL1	67	Active energy incoming L1
ActiveEnergyIncomingL2	68	Active energy incoming L2

continues on next page

Table 3 – continued from previous page

Name	Initial	Comment
ActiveEnergyIncomingL3	69	Active energy incoming L3
ActiveEnergyDeliveredL1	70	Active energy delivered L1
ActiveEnergyDeliveredL2	71	Active energy delivered L2
ActiveEnergyDeliveredL3	72	Active energy delivered L3
ActiveEnergyTotal	73	Active energy total
ActiveEnergyIncomingTotal	74	Active energy incoming total
ActiveEnergyDeliveredTotal	75	Active energy delivered total
ReactiveEnergyL1	76	Reactive energy L1
ReactiveEnergyL2	77	Reactive energy L2
ReactiveEnergyL3	78	Reactive energy L3
ReactiveEnergyInductiveL1	79	Reactive energy inductive L1
CReactiveEnergyInductiveL2	80	Reactive energy inductive L2
ReactiveEnergyInductiveL3	81	Reactive energy inductive L3
ReactiveEnergyCapacitiveL1	82	Reactive energy capacitive L1
ReactiveEnergyCapacitiveL2	83	Reactive energy capacitive L2
ReactiveEnergyCapacitiveL3	84	Reactive energy capacitive L3
ReactiveEnergyTotal	85	Reactive energy total
ReactiveEnergyInductiveTotal	86	Reactive energy inductive total
ReactiveEnergyCapacitiveTotal	87	Reactive energy capacitive total
ApparentEnergyL1	88	Apparent energy L1
ApparentEnergyL2	89	Apparent energy L2
ApparentEnergyL3	90	Apparent energy L3
PeakVoltageL1_N	91	Peak voltage L1-N
PeakVoltageL2_N	92	Peak voltage L2-N
PeakVoltageL3_N	93	Peak voltage L3-N
PeakCurrentL1	94	Peak current L1
PeakCurrentL2	95	Peak current L2
PeakCurrentL3	96	Peak current L3

Description: AC values measured by module 750-494 (collection 9)

e494DC_Values (ENUM)

InOut:

Name	Initial	Comment
DirectCurrentL1	1	DC L1
DirectCurrentL2	2	DC L2
DcVoltageL1_N	4	DC voltage L1-N
DcVoltageL2_N	5	DC voltage L2-N
DcPowerL1	7	DC power L1
DcPowerL2	8	DC power L2

Description: DC values measured by module 750-494 (collection 7)

typ494ChannelConfig_Shunt (STRUCT)

InOut:

Name	Type	Comment
wUnderVoltageThreshold	WORD	
wOverVoltageThreshold	WORD	
dwOverCurrentThreshold	DWORD	
wIntervalMinMaxReset	WORD	
wIntervalForAverageCalcIndex	WORD	
wIntervalForPeakValue	WORD	
wIntervalForAverageCalcValue	WORD	this element is used only for display purpose
xAutoMinMaxReset	BOOL	
bFillByte	ARRAY [0..2] OF BYTE	for DWORD-Alignment

typ494Config (STRUCT)

InOut:

Name	Type	Initial	Comment
wIntervalEnergyStorage	WORD		Interval energy storage in s (60..255)
wScalingFactorIndex	WORD		Scaling factor index (0: 1mA .. 6: 1kA)
wNoLoadEffectivePower	WORD		No load effective power (0..24000)
wNoLoadReactivePower	WORD		No load reactive power (0..24000)
wNoLoadApparentPower	WORD		No load apparent power (0..24000)
xEnableWatchdog	BOOL		Enable watchdog
xCancelGui	BOOL		This element is used only for display pu
typChannelConfig	ARRAY [1..3] OF *typChannelConfig*		Channel config
rSelectedScalingFactor	REAL		This element is used only for display pu
strReadWriteStatus	STRING(41)		This element is used only for display pu
bStatus	BYTE	0	This element is used only for display pu
bPhasePeakSelect	BYTE		Phase peak select (1..3)
xReadConfig	BOOL		Read config
xWriteConfig	BOOL		Write config
xEnableDCMeasurement	BOOL		Enable DC measurement
xPowerSupplyFrequency	BOOL		Power supply frequency
strEnergyMeterGui	STRING(31)		This element is used only for display pu
strMinMaxValueGui	STRING(23)		This element is used only for display pu
wLowWord1	WORD		Correspond to container 1, register 48
wHighWord1	WORD		Correspond to container 2, register 49
wLowWord2	WORD		Correspond to container 3, register 50
wHighWord2	WORD		Correspond to container 4, register 51
bEnergyMeterIndex	BYTE		Energy meter index (0..14)
bMinMaxValueIndex	BYTE		MinMax value index (0..7)
xFactorySettings	BOOL		FactorySettings
xFactorySettingsGui	BOOL		This element is used only for display pu
xDeleteAllMinMaxValues	BOOL		Delete all MinMax values
xDeleteMinMaxValue	BOOL		Delete MinMax value
xSaveEnergyConsumption	BOOL		Save energy consumption
xDeleteAllPowerMeter	BOOL		Delete all power meter

continues on next

Table 4 – continued from previous page

Name	Type	Initial	Comment
xDeleteAllPowerMeterGui	BOOL		This element is used only for display pu
xDeletePowerMeter	BOOL		Delete power meter
xDeletePowerMeterGui	BOOL		This element is used only for display pu
xSetPowerMeter	BOOL		Set power meter
xHasExtended	BOOL		this element is used only for display pur
xExtendedSettings	BOOL		this element is used only for display pur
xVoltageTransformResolution	BOOL		
strResolutionGui	STRING(4)		
wVoltageTransformerPrimary	WORD		
wVoltageTransformerSecondary	WORD		
bTopologyIndex	WORD		
strTopologyGui	STRING(29)		this element is used only for display pur
strTopologyGui_de	STRING(31)		this element is used only for display pur

Description: Configuration values and control bits module 750-494

typ494Config_Shunt (STRUCT)

InOut:

Name	Type	Initial	Comment
wIntervalEnergyStorage	WORD		
wScalingFactorIndex	WORD		
wNoLoadEffectivePower	WORD		
wNoLoadReactivePower	WORD		
wNoLoadApparentPower	WORD		
xEnableWatchdog	BOOL		
xCancelGui	BOOL		this element is used only fo
typChannelConfig	ARRAY [1..3] OF *typ494ChannelConfig_Shunt*		
rSelectedScalingFactor	REAL		this element is used only fo
strReadWriteStatus	STRING(41)		this element is used only fo
bStatus	BYTE	0	this element is used only fo
bPhasePeakSelect	BYTE		
xReadConfig	BOOL	FALSE	
xWriteConfig	BOOL	FALSE	
xEnableDCMeasurement	BOOL		
xPowerSupplyFrequency	BOOL		
strEnergyMeterGui	STRING(31)		this element is used only fo
strMinMaxValueGui	STRING(23)		this element is used only fo
wLowWord1	WORD		correspond to container 1, r
wHighWord1	WORD		correspond to container 2, r
wLowWord2	WORD		correspond to container 3, r
wHighWord2	WORD		correspond to container 4, r
bEnergyMeterIndex	BYTE		
bMinMaxValueIndex	BYTE		
xFactorySettings	BOOL		
xFactorySettingsGui	BOOL		this element is used only fo
xDeleteAllMinMaxValues	BOOL		
xDeleteMinMaxValue	BOOL		
xSaveEnergyConsumption	BOOL		

continue

Table 5 – continued from previous page

Name	Type	Initial	Comment
xDeleteAllPowerMeter	BOOL		
xDeleteAllPowerMeterGui	BOOL		this element is used only for
xDeletePowerMeter	BOOL		
xDeletePowerMeterGui	BOOL		this element is used only for
xSetPowerMeter	BOOL		
bNominalCurrent	BYTE	1	
bNominalVoltage	BYTE	1	
wNominalVoltageGui	WORD		this element is used only for
rNominalCurrentGui	REAL		this element is used only for
xHasExtended	BOOL		this element is used only for
xExtendedSettings	BOOL		this element is used only for
xVoltageTransformResolution	BOOL		
strResolutionGui	STRING(4)		
wVoltageTransformerPrimary	WORD		
wVoltageTransformerSecondary	WORD		

typ494State (STRUCT)

InOut:

Name	Type	Comment
xParameterReadWrite	BOOL	Read/write parameter
xGeneralError	BOOL	Module status byte 0.6 ->see manual
xSettlingTimeCollectionActive	BOOL	Module status byte 1.7 ->see manual
xCalibrationActive	BOOL	Module status byte 1.6 ->see manual
xModuleError	BOOL	Module status byte 0.3 ->see manual
xPhase1Error	BOOL	Module status byte 0.0 ->see manual
xPhase2Error	BOOL	Module status byte 0.1 ->see manual
xPhase3Error	BOOL	Module status byte 0.2 ->see manual
xPhase1_UnderVoltageUser	BOOL	Module status byte 2.7 ->see manual
xPhase1_OverVoltageUser	BOOL	Module status byte 2.6 ->see manual
xPhase1_OverCurrentUser	BOOL	Module status byte 2.5 ->see manual
xPhase1_UnderVoltageSystem	BOOL	Module status byte 2.1 ->see manual
xPhase1_OverVoltageSystem	BOOL	Module status byte 2.3 ->see manual
xPhase1_OverCurrentSystem	BOOL	Module status byte 2.2 ->see manual
xPhase1_NoZeroCrossing	BOOL	Module status byte 2.4 ->see manual
xPhase2_UnderVoltageUser	BOOL	Module status byte 2.7 ->see manual
xPhase2_OverVoltageUser	BOOL	Module status byte 2.6 ->see manual
xPhase2_OverCurrentUser	BOOL	Module status byte 2.5 ->see manual
xPhase2_UnderVoltageSystem	BOOL	Module status byte 2.1 ->see manual
xPhase2_OverVoltageSystem	BOOL	Module status byte 2.3 ->see manual
xPhase2_OverCurrentSystem	BOOL	Module status byte 2.2 ->see manual
xPhase2_NoZeroCrossing	BOOL	Module status byte 2.4 ->see manual
xPhase3_UnderVoltageUser	BOOL	Module status byte 2.7 ->see manual
xPhase3_OverVoltageUser	BOOL	Module status byte 2.6 ->see manual
xPhase3_OverCurrentUser	BOOL	Module status byte 2.5 ->see manual
xPhase3_UnderVoltageSystem	BOOL	Module status byte 2.1 ->see manual
xPhase3_OverVoltageSystem	BOOL	Module status byte 2.3 ->see manual
xPhase3_OverCurrentSystem	BOOL	Module status byte 2.2 ->see manual

continues on next page

Table 6 – continued from previous page

Name	Type	Comment
xPhase3_NoZeroCrossing	BOOL	Module status byte 2.4 ->see manual
xModule_RotatingField	BOOL	Module status byte 2.6 ->see manual

Description: General status bits module 750-494

3.3.2 FbAC_Compact3WireWyeDelta_494 (FB)

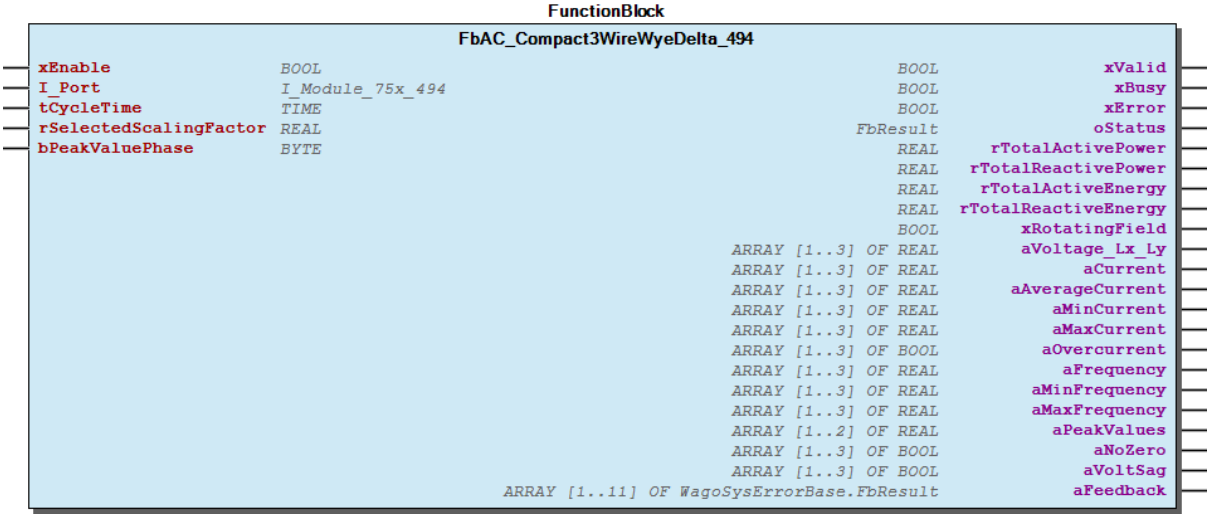
Interface variables

Scope	Name	Type	Initial	Comment
Input	xEnable	BOOL		Activates the function block
	I_Port	WagoTypesModule_75x_49x.I_Module_75x_494		Basic interface
	tCycleTime	TIME	TIME#1s0ms	Intervall for reading values
	rSelectedScalingFactor	REAL	10	Scalingfactor for the energy values
	bPeakValuePhase	BYTE	1	Phase configured for to peak value measuring
Output	xValid	BOOL		High, if data is valid
Output	xBusy	BOOL		Function block busy
Output	xError	BOOL		Error occured, details in oStatus
Output	oStatus	WagoSysErrorBase.FbResult		*Status* information
Output	rTotalActivePower	REAL		Total Active Power [W]
Output	rTotalReactivePower	REAL		Total Reactive Power [var]
Output	rTotalActiveEnergy	REAL		Total Active Energy [Wh]
Output	rTotalReactiveEnergy	REAL		Total Reactive Energy [varh]
Output	xRotatingField	BOOL		Rotating Field
Output	aVoltage_Lx_Ly	ARRAY [1..3] OF REAL		Voltage Lx-Ly [V]
Output	aCurrent	ARRAY [1..3] OF REAL		Current [A]
Output	aAverageCurrent	ARRAY [1..3] OF REAL		Average Current [A]
Output	aMinCurrent	ARRAY [1..3] OF REAL		Minimum Current [A]
Output	aMaxCurrent	ARRAY [1..3] OF REAL		Maximum Current [A]
Output	aOvercurrent	ARRAY [1..3] OF BOOL		Overcurrent
Output	aFrequency	ARRAY [1..3] OF REAL		Frequency [Hz]
Output	aMinFrequency	ARRAY [1..3] OF REAL		Minimum Frequency [Hz]
Output	aMaxFrequency	ARRAY [1..3] OF REAL		Maximum Frequency [Hz]
Output	aPeakValues	ARRAY [1..2] OF REAL		Peak current, peak voltage
Output	aNoZero	ARRAY [1..3] OF BOOL		NoZero
Output	aVoltSag	ARRAY [1..3] OF BOOL		VoltSag
Output	aFeedback	ARRAY [1..11] OF WagoSysErrorBase.FbResult		**0: -> no Error** 1..240: -> bit coded errors, details see below

Function

This function block reads the most common AC values of the 3-Phase Power Measurement Module (750-494) in 3-wire Wye/Delta topology

Graphical Illustration



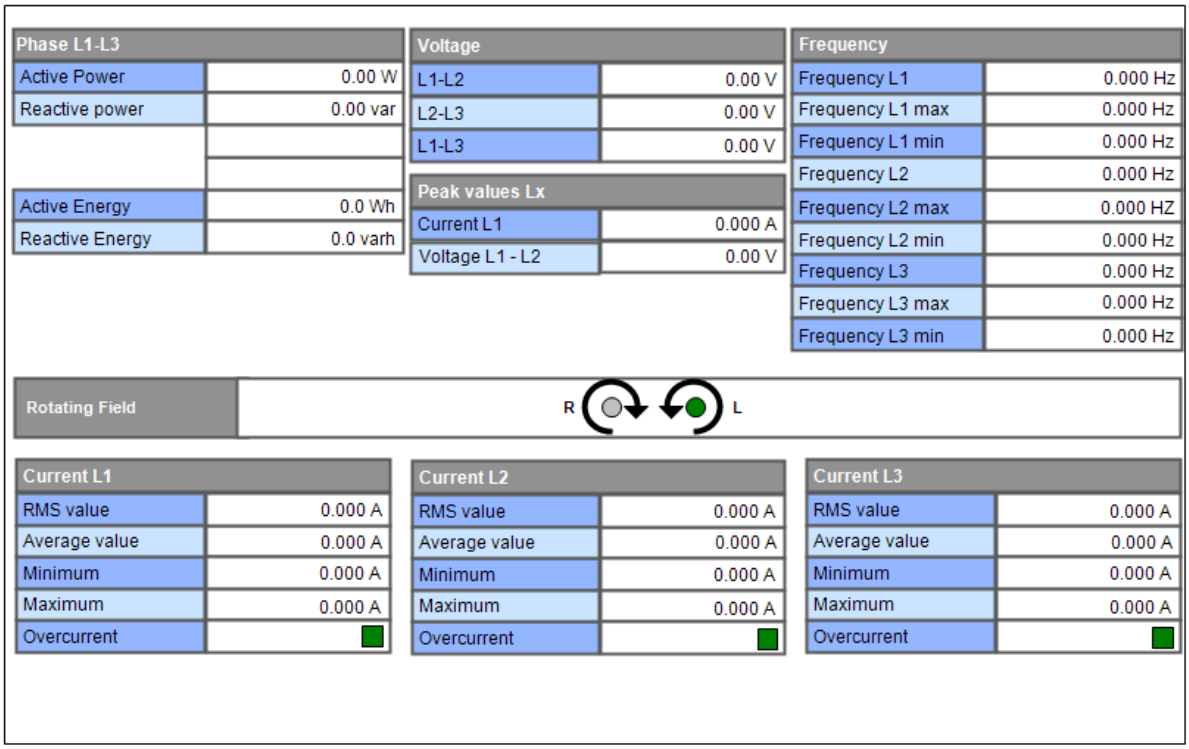
Function description

This function block can be used for cyclic reading of the most important measured values using collection 9. It can be used multiple times in one project.

Note: For the correct unit of energy values, the setting for scaling factor `rSelectedScalingFactor` must be taken into account.

If this function block is used without the function block FbConfigurationAndStatus_494, it is then neccessary to set the parameter `USE_FBAC_COMPACT_494_STANDALONE` to TRUE.

Visualization



Note: The input `m_Input_Fb_750_494_AC_Compact3WireWyeDelta_01` is of type `FbAC_Compact3WireWyeDelta_494`

Using this template needs an instance of function block FbAC_Compact3WireWyeDelta_494 as input.

3.3.3 FbAC_Compact_494 (FB)

Interface variables

Scope	Name	Type	Initial	Comment
Input	`xEnable`	`BOOL`		Activates the function block
	`I_Port`	`WagoTypesModule_75x_49x.I_Module_75x_494`		Basic interface
	`tCycleTime`	`TIME`	TIME#1s0ms	Intervall for reading values
	`rSelectedScalingFactor`	`REAL`	10	Scalingfactor for the energy values
Output	`xValid`	`BOOL`		High, if data is valid
Output	`xBusy`	`BOOL`		Function block busy
Output	`xError`	`BOOL`		Error occured, details in oStatus
Output	`oStatus`	`WagoSysErrorBase.FbResult`		*Status* information
Output	`rTotalActivePower`	`REAL`		Total Active Power [W]

continues on next page

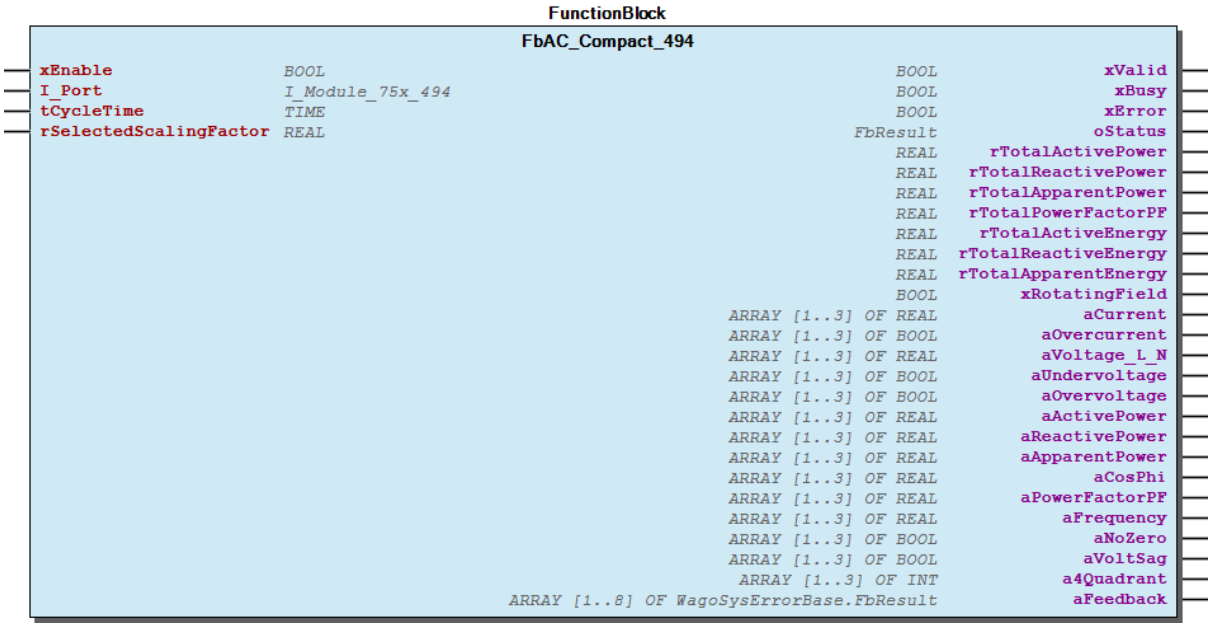
Table 7 – continued from previous page

Scope	Name	Type	Initial	Comment
Output	rTotalReactivePower	REAL		Total Reactive Power [var]
Output	rTotalApparentPower	REAL		Total Apparent Power [VA]
Output	rTotalPowerFactorPF	REAL		Total Power Factor PF
Output	rTotalActiveEnergy	REAL		Total Active Energy [Wh]
Output	rTotalReactiveEnergy	REAL		Total Reactive Energy [varh]
Output	rTotalApparentEnergy	REAL		Total Apparent Energy [VAh]
Output	xRotatingField	BOOL		Rotating Field
Output	aCurrent	ARRAY [1..3] OF REAL		Current [A]
Output	aOvercurrent	ARRAY [1..3] OF BOOL		Overcurrent
Output	aVoltage_L_N	ARRAY [1..3] OF REAL		Voltage L-N [V]
Output	aUndervoltage	ARRAY [1..3] OF BOOL		Undervoltage
Output	aOvervoltage	ARRAY [1..3] OF BOOL		Overvoltage
Output	aActivePower	ARRAY [1..3] OF REAL		ActivePower [W]
Output	aReactivePower	ARRAY [1..3] OF REAL		Reactive Power [var]
Output	aApparentPower	ARRAY [1..3] OF REAL		Apparent Power [VA]
Output	aCosPhi	ARRAY [1..3] OF REAL		CosPhi
Output	aPowerFactorPF	ARRAY [1..3] OF REAL		Power Factor PF
Output	aFrequency	ARRAY [1..3] OF REAL		Frequency [Hz]
Output	aNoZero	ARRAY [1..3] OF BOOL		NoZero
Output	aVoltSag	ARRAY [1..3] OF BOOL		VoltSag
Output	a4Quadrant	ARRAY [1..3] OF INT		4-quadrant display
Output	aFeedback	ARRAY [1..8] OF WagoSysErrorBase.FbResult		0: -> no Error 1..240: -> bit coded errors, details see below

Function

This function block reads the most common AC values of the 3-Phase Power Measurement module 750-494

Graphical Illustration



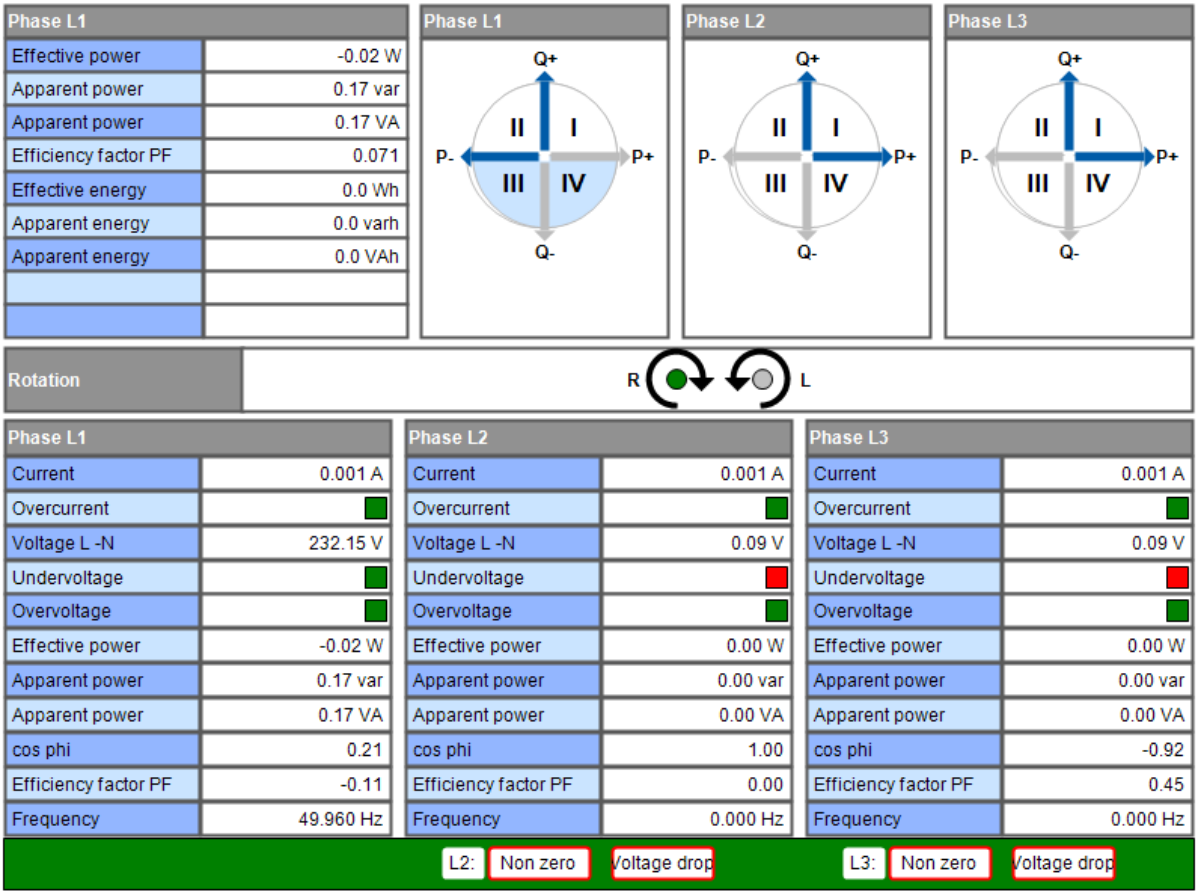
Function description

The function block can be used for cyclic reading of the most important measured values using collection 9. It can be used multiple times in one project.

Note: For the correct unit of energy values, the setting for scaling factor `rSelectedScalingFactor` must be taken into account.

If this function block is used without the function block FbConfigurationAndStatus_494 then it is neccessary to set the parameter `USE_FBAC_COMPACT_494_STANDALONE` to TRUE.

Visualization



Note: The input `m_Input_Fb_750_494_AC_Compact_01` is of type `FbAC_Compact_494`

Using this template needs an instance of function block FbAC_Compact_494 as input.

3.3.4 FbAC_Values_494 (FB)

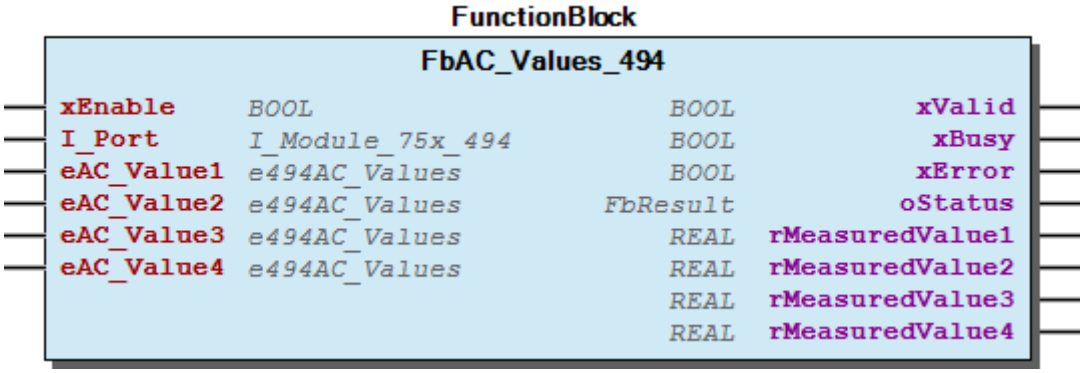
Interface variables

Scope	Name	Type	Comment
Input	xEnable	BOOL	Activates the function block
	I_Port	WagoTypesModule_75x_49x.I_Module_75x_494	Basic interface
	eAC_Value1	*e494AC_Values*	ID of first value to be read
	eAC_Value2	*e494AC_Values*	ID of second value to be read
	eAC_Value3	*e494AC_Values*	ID of third value to be read
	eAC_Value4	*e494AC_Values*	ID of fourth value to be read
Output	xValid	BOOL	High, if data is valid
Output	xBusy	BOOL	Function block busy
Output	xError	BOOL	Error occured, details in oStatus
Output	oStatus	WagoSysErrorBase.FbResult	*Status* information
Output	rMeasuredValue1	REAL	Measured value for ID 1
Output	rMeasuredValue2	REAL	Measured value for ID 2
Output	rMeasuredValue3	REAL	Measured value for ID 3
Output	rMeasuredValue4	REAL	Measured value for ID 4

Function

This function block reads up to 4 AC values from the 3-Phase Power Measurement module 750-494

Graphical Illustration



Function description

The function block can be used for cyclic reading off up to 4 process values from collection 9. It can be used multiple times in one project.

3.3.5 FbConfigurationAndStatus_494 (FB)

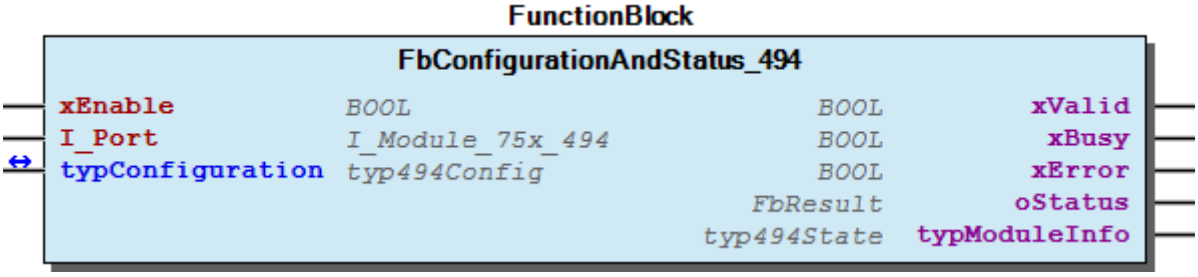
Interface variables

Scope	Name	Type	Initial	Comment
Input	xEnable	BOOL	TRUE	Enable function block
	I_Port	WagoTypesModule_75x_49x.I_Module_75x_494		Basic interface
Inout	typConfiguration	*typ494Config*		Configuration data and command bits
Output	xValid	BOOL		Values in typModuleInfo are valid
Output	xBusy	BOOL		Function block in work
Output	xError	BOOL		Error occured during status update or while reading or writing the configuration
Output	oStatus	WagoSysErrorBase.FbResult		**Status:** Reading configuration Writing configuration Reading-ModuleStatus Executing command **Error:** Error reading configuration Error writing configuration Error executing command Preset value exceeds valid

Function

This function block reads continously the general modul information shown at output `typModuleInfo`

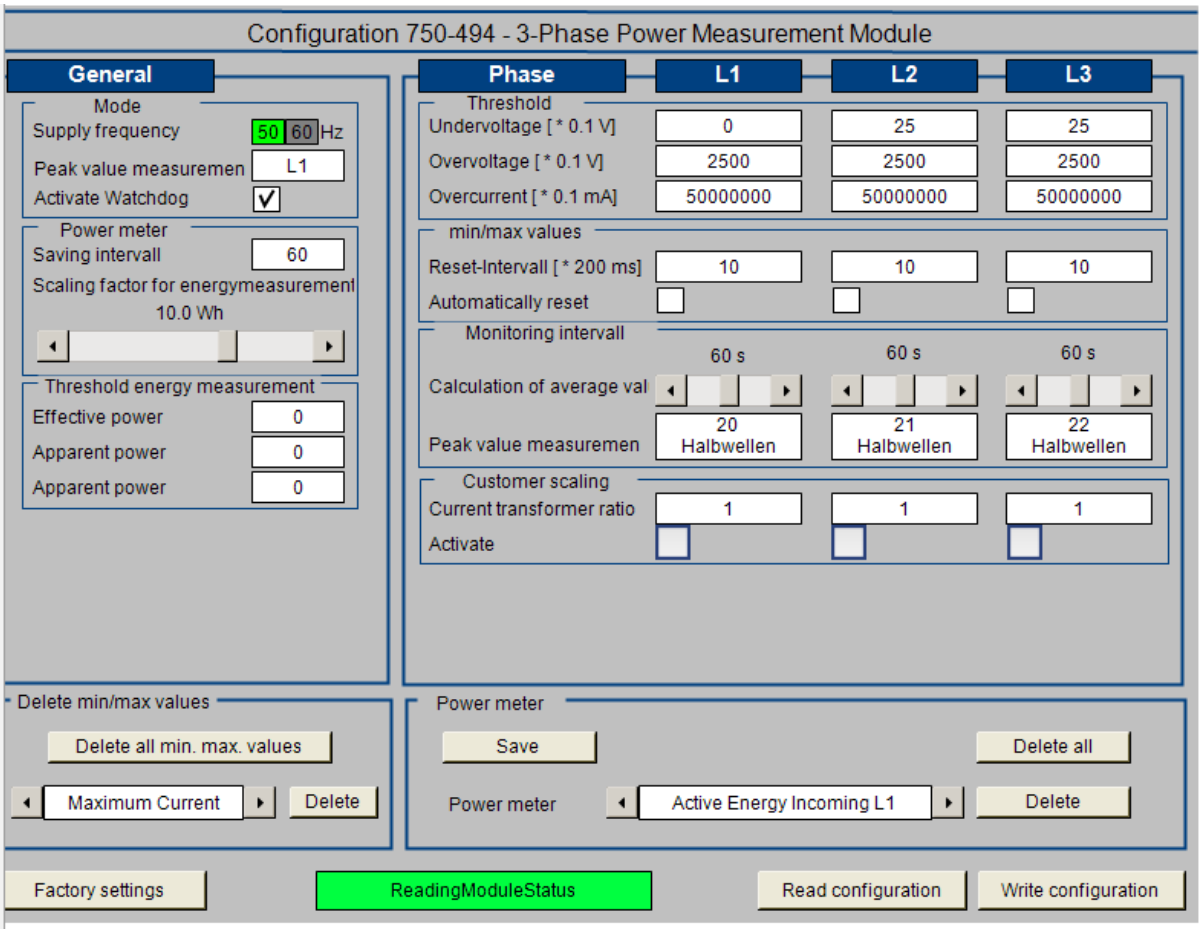
Graphical Illustration



Function description

Additional commands like read or write configuration are possible.

Visualization



Note: The input `m_Input_typConfig_750_494` is of type `typ494Config`

The template needs the variable at the input `typConfiguration` from function block FbConfigurationAndStatus_494 as input.

3.3.6 FbConfigurationAndStatus_494_Shunt (FB)

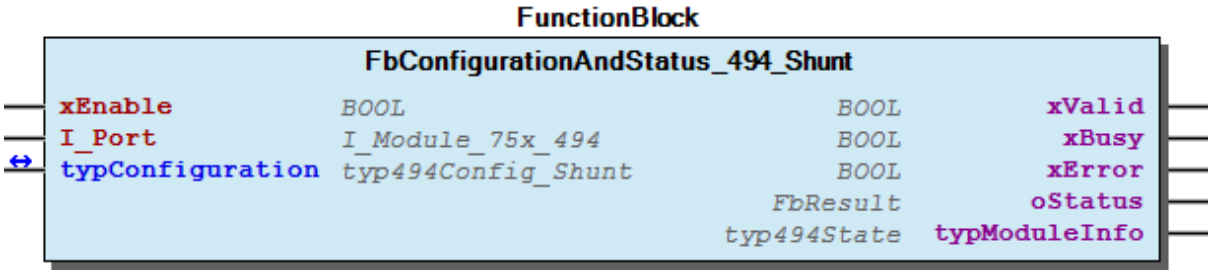
Interface variables

Scope	Name	Type	Initial	Comment
Input	xEnable	BOOL	TRUE	Enable function block
	I_Port	WagoTypesModule_75x_49x.I_Module_75x_494		Basic interface
Inout	typConfiguration	*typ494Config_Shunt*		Configuration data and command bits
Output	xValid	BOOL		Values in typModuleInfo are valid
Output	xBusy	BOOL		Function block in work
Output	xError	BOOL		Error occured during status update or while reading or writing the configuration
Output	oStatus	WagoSysErrorBase.FbResult		**Status:** Reading configuration Writing configuration Reading-ModuleStatus Executing command **Error:** Error reading configuration Error writing configuration Error executing command Preset value exceeds valid

Function

This function block reads continously the general modul information shown at output `typModuleInfo`

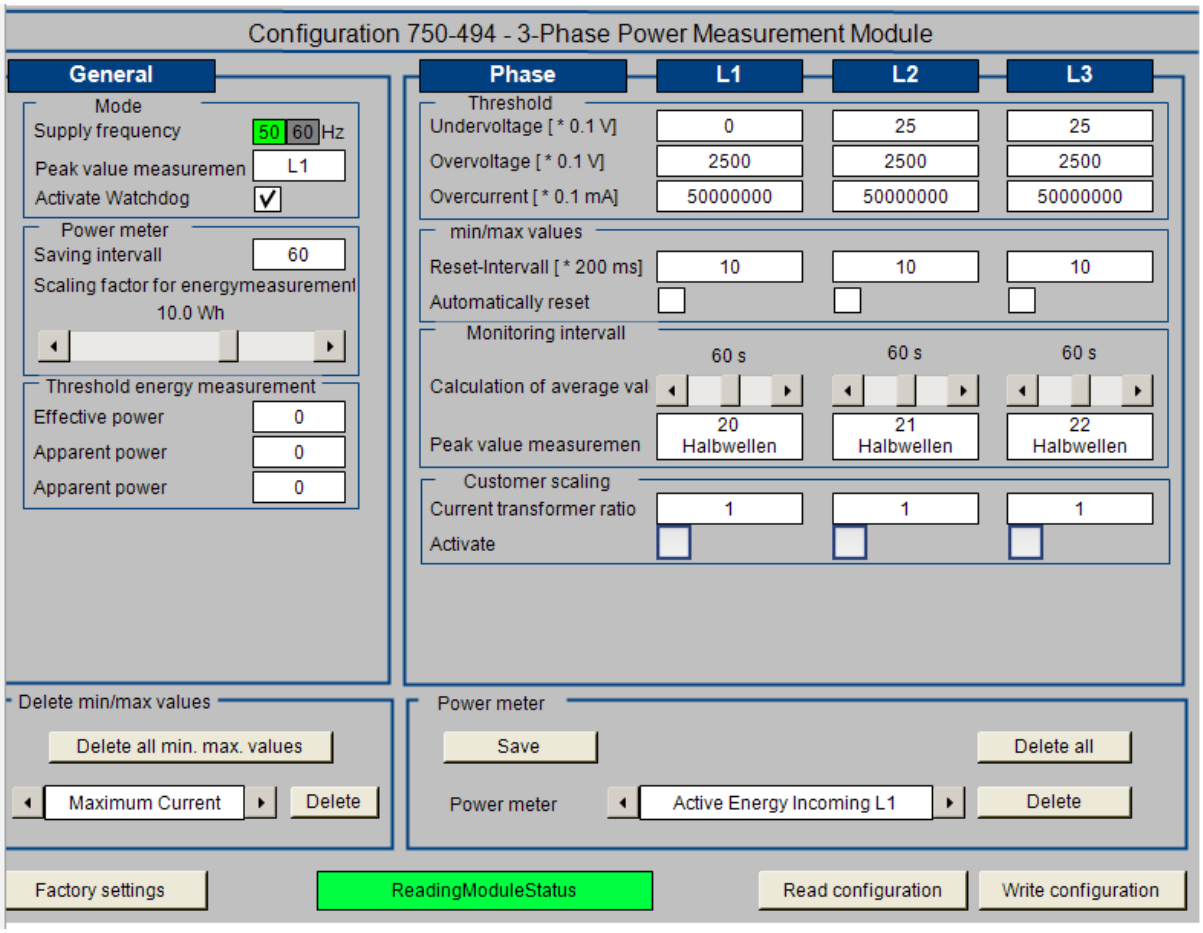
Graphical Illustration



Function description

Additional commands like read or write configuration are possible.

Visualization



Note: The input `m_Input_typConfig_750_494_shunt` is of type `typ494Config_shunt`

The template needs the variable at the input `typConfiguration` from function block FbConfigurationAndStatus_494_shunt as input.

3.3.7 FbDC_Values_494 (FB)

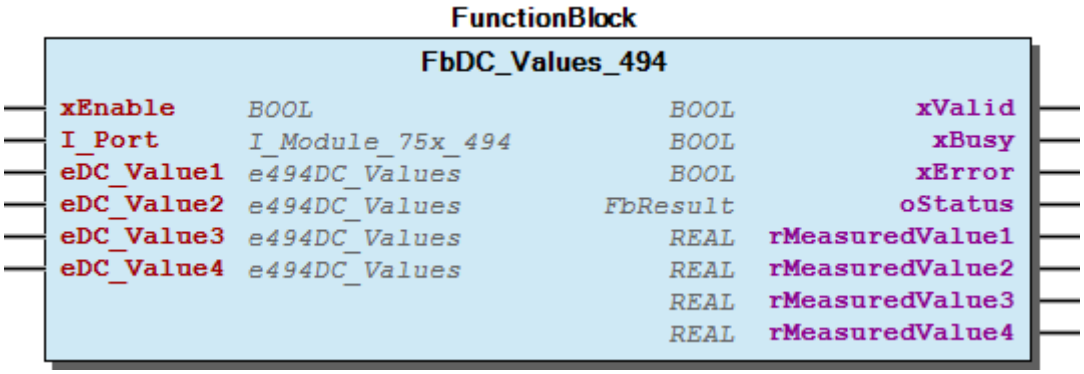
Interface variables

Scope	Name	Type	Comment
Input	xEnable	BOOL	Activates the function block
	I_Port	WagoTypesModule_75x_49x.I_Module_75x_494	Basic interface
	eDC_Value1	*e494DC_Values*	ID of first value to be read
	eDC_Value2	*e494DC_Values*	ID of second value to be read
	eDC_Value3	*e494DC_Values*	ID of third value to be read
	eDC_Value4	*e494DC_Values*	ID of fourth value to be read
Output	xValid	BOOL	High, if data is valid
Output	xBusy	BOOL	Function block busy
Output	xError	BOOL	Error occured, details in oStatus
Output	oStatus	WagoSysErrorBase.FbResult	*Status* information
Output	rMeasuredValue1	REAL	Measured value for ID 1
Output	rMeasuredValue2	REAL	Measured value for ID 2
Output	rMeasuredValue3	REAL	Measured value for ID 3
Output	rMeasuredValue4	REAL	Measured value for ID 4

Function

This function block reads the DC values of the 3-Phase Power Measurement module 750-494

Graphical Illustration



Function description

The function block can be used for cyclic reading of up to 4 process values from collection 7. It can be used multiple times in one project.

3.3.8 FbHarmonicValues_494 (FB)

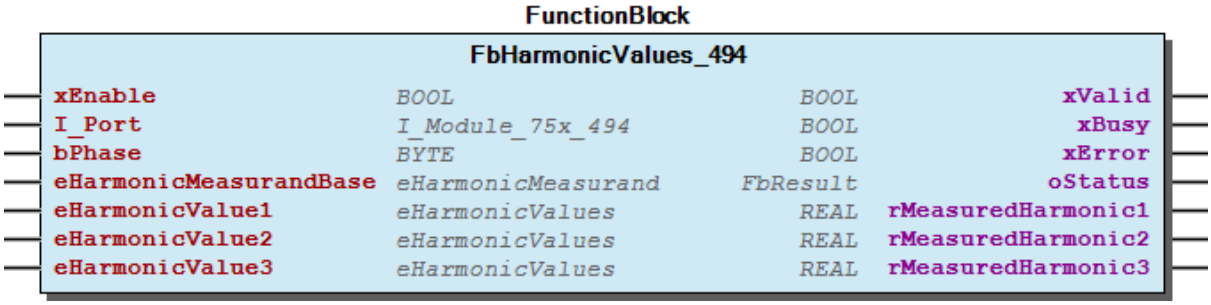
Interface variables

Scope	Name	Type	Initial	Comment
Input	xEnable	BOOL		Activates the function block
	I_Port	WagoTypesModule_75x_49x.I_Module_75x_494		Basic interface
	bPhase	BYTE	1	[1..3] ->Reading data from this phase
	eHarmonicMeasurandBase	*eHarmonicMeasurand*		Measurand for reading
	eHarmonicValue1	*eHarmonicValues*		ID of first value to be read
	eHarmonicValue2	*eHarmonicValues*		ID of second value to be read
	eHarmonicValue3	*eHarmonicValues*		ID of third value to be read
Output	xValid	BOOL		High, if data is valid
Output	xBusy	BOOL		Function block busy
Output	xError	BOOL		Error occured, details in oStatus
Output	oStatus	WagoSysErrorBase.FbResult		*Status* information
Output	rMeasuredHarmonic1	REAL		Measured value for ID 1
Output	rMeasuredHarmonic2	REAL		Measured value for ID 2
Output	rMeasuredHarmonic3	REAL		Measured value for ID 3

Function

This function block reads the selected harmonic values of the 3-Phase Power Measurement module 750-494

Graphical Illustration



Function description

The function block can be used for cyclic reading of up to 3 harmonics from collections 20 to 22. It can be used multiple times in one project.

3.4 75x_494/495

3.4.1 eHarmonicMeasurand (ENUM)

InOut:

Name	Initial	Comment
RmsCurrent	1	Rms current
RmsVoltage	2	Rms voltage
HarmonicDistortion_Current	3	Harmonic distortion current
HarmonicDistortion_Voltage	4	Harmonic distortion voltage

Description: Values for typ configuration harmonic measurand 494/495

3.4.2 eHarmonicValues (ENUM)

InOut:

Name	Initial	Comment
Fundamental	100	Fundamental
Harmonic_2	2	Harmonic 2
Harmonic_3	3	Harmonic 3
Harmonic_4	4	Harmonic 4
Harmonic_5	5	Harmonic 5
Harmonic_6	6	Harmonic 6
Harmonic_7	7	Harmonic 7
Harmonic_8	8	Harmonic 8
Harmonic_9	9	Harmonic 9
Harmonic_10	10	Harmonic 10
Harmonic_11	11	Harmonic 11
Harmonic_12	12	Harmonic 12
Harmonic_13	13	Harmonic 13
Harmonic_14	14	Harmonic 14
Harmonic_15	15	Harmonic 15
Harmonic_16	16	Harmonic 16
Harmonic_17	17	Harmonic 17
Harmonic_18	18	Harmonic 18
Harmonic_19	19	Harmonic 19
Harmonic_20	20	Harmonic 20
Harmonic_21	21	Harmonic 21
Harmonic_22	22	Harmonic 22
Harmonic_23	23	Harmonic 23
Harmonic_24	24	Harmonic 24
Harmonic_25	25	Harmonic 25
Harmonic_26	26	Harmonic 26
Harmonic_27	27	Harmonic 27
Harmonic_28	28	Harmonic 28
Harmonic_29	29	Harmonic 29
Harmonic_30	30	Harmonic 30

continues on next page

Table 8 – continued from previous page

Name	Initial	Comment
Harmonic_31	31	Harmonic 31
Harmonic_32	32	Harmonic 32
Harmonic_33	33	Harmonic 33
Harmonic_34	34	Harmonic 34
Harmonic_35	35	Harmonic 35
Harmonic_36	36	Harmonic 36
Harmonic_37	37	Harmonic 37
Harmonic_38	38	Harmonic 38
Harmonic_39	39	Harmonic 39
Harmonic_40	40	Harmonic 40
Harmonic_41	41	Harmonic 41

Description: Configuration values for harmonic measurand 494/495

3.4.3 typChannelConfig (STRUCT)

InOut:

Name	Type	Comment
wUnderVoltageThreshold	WORD	Undervoltage threshold in V (0..6553)
wOverVoltageThreshold	WORD	Overvoltage threshold in V (0..6553)
dwOverCurrentThreshold	DWORD	Overcurrent threshold in mA (0..429496A)
wIntervalMinMaxReset	WORD	Interval min max reset (0..255)
wIntervalForAverageCalcIndex	WORD	Interval for average calc index in s (0: 5s .. 8: 900s)
wIntervalForPeakValue	WORD	Interval for peak value (6..254)
wCurrentTransformerRatio	WORD	Current transformer ratio (1..5000)
wIntervalForAverageCalcValue	WORD	This element is used only for display purpose
xAutoMinMaxReset	BOOL	Auto min max reset
xEnableUserScaling	BOOL	Enable user scaling

Description: Values for channel configuration harmonic measurand 494/495

3.5 75x_495

3.5.1 04 DataTypes

e495AC_Values (ENUM)

InOut:

Name	Initial	Comment
RmsCurrentL1	1	Rms current L1
RmsCurrentL2	2	Rms current L2
RmsCurrentL3	3	Rms current L3
RmsVoltageL1_N	4	Rms voltage L1-N
RmsVoltageL2_N	5	Rms voltage L2-N
RmsVoltageL3_N	6	Rms voltage L3-N
EffectivePowerL1	7	Effective power L1

continues on next page

Table 9 – continued from previous page

Name	Initial	Comment
EffectivePowerL2	8	Effective power L2
EffectivePowerL3	9	Effective power L3
ReactivePowerL1	10	Reactive power L1
ReactivePowerL2	11	Reactive power L2
ReactivePowerL3	12	Reactive power L3
ApparentPowerL1	13	Apparent power L1
ApparentPowerL2	14	Apparent power L2
ApparentPowerL3	15	Apparent power L3
FrequencyL1	16	Frequency L1
FrequencyL2	17	Frequency L2
FrequencyL3	18	Frequency L3
PhaseAngle_U_I_L1	19	Phase angle U-I L1
PhaseAngle_U_I_L2	20	Phase angle U-I L2
PhaseAngle_U_I_L3	21	Phase angle U-I L3
PowerFactorCosPhiL1	22	Power factor cos phi L1
PowerFactorCosPhiL2	23	Power factor cos phi L2
PowerFactorCosPhiL3	24	Power factor cos phi L3
PowerFactorPF_L1	25	Powerfactor pf L1
PowerFactorPF_L2	26	Powerfactor pf L2
PowerFactorPF_L3	27	Powerfactor pf L3
PowerFactorLF_L1	28	Powerfactor lf L1
PowerFactorLF_L2	29	Powerfactor lf L1
PowerFactorLF_L3	30	Powerfactor lf L1
PhaseConductorVoltageL1_L2	31	Phase conductor voltage L1-L2
PhaseConductorVoltageL1_L3	32	Phase conductor voltage L1-L3
PhaseConductorVoltageL2_L3	33	Phase conductor voltage L2-L3
MaximumRmsCurrentL1	34	Maximum rms Current L1
MaximumRmsCurrentL2	35	Maximum rms Current L2
MaximumRmsCurrentL3	36	Maximum rms Current L3
MinimumRmsCurrentL1	37	Minimum rms Current L1
MinimumRmsCurrentL2	38	Minimum rms Current L2
MinimumRmsCurrentL3	39	Minimum rms Current L3
AverageRmsCurrentL1	40	Average rms current L1
AverageRmsCurrentL2	41	Average rms current L2
AverageRmsCurrentL3	42	Average rms current L3
MaximumRmsVoltageL1_N	43	Maximum rms voltage L1-N
MaximumRmsVoltageL2_N	44	Maximum rms voltage L2-N
MaximumRmsVoltageL3_N	45	Maximum rms voltage L3-N
MinimumRmsVoltageL1_N	46	Minimum rms voltage L1-N
MinimumRmsVoltageL2_N	47	Minimum rms voltage L2-N
MinimumRmsVoltageL3_N	48	Minimum rms voltage L3-N
AverageRmsVoltageL1_N	49	Average rms voltage L1-N
AverageRmsVoltageL2_N	50	Average rms voltage L2-N
AverageRmsVoltageL3_N	51	Average rms voltage L3-N
MaximumEffectivePowerL1	52	Maximum effective power L1
MaximumEffectivePowerL2	53	Maximum effective power L2
MaximumEffectivePowerL3	54	Maximum effective power L3
MinimumEffectivePowerL1	55	Minimum effective power L1
MinimumEffectivePowerL2	56	Minimum effective power L1
MinimumEffectivePowerL3	57	Minimum effective power L1
MaximumFrequencyL1	58	Maximum frequency L1

continues on next page

Table 9 – continued from previous page

Name	Initial	Comment
MaximumFrequencyL2	59	Maximum frequency L2
MaximumFrequencyL3	60	Maximum frequency L3
MinimumFrequencyL1	61	Minimum frequency L1
MinimumFrequencyL2	62	Minimum frequency L2
MinimumFrequencyL3	63	Minimum frequency L3
ActiveEnergyL1	64	Active energy L1
ActiveEnergyL2	65	Active energy L2
ActiveEnergyL3	66	Active energy L3
ActiveEnergyIncomingL1	67	Active energy incoming L1
ActiveEnergyIncomingL2	68	Active energy incoming L2
ActiveEnergyIncomingL3	69	Active energy incoming L3
ActiveEnergyDeliveredL1	70	Active energy delivered L1
ActiveEnergyDeliveredL2	71	Active energy delivered L2
ActiveEnergyDeliveredL3	72	Active energy delivered L3
ActiveEnergyTotal	73	Active energy total
ActiveEnergyIncomingTotal	74	Active energy incoming total
ActiveEnergyDeliveredTotal	75	Active energy delivered total
ReactiveEnergyL1	76	Reactive energy L1
ReactiveEnergyL2	77	Reactive energy L2
ReactiveEnergyL3	78	Reactive energy L3
ReactiveEnergyInductiveL1	79	Reactive energy inductive L1
CReactiveEnergyInductiveL2	80	Reactive energy inductive L2
ReactiveEnergyInductiveL3	81	Reactive energy inductive L3
ReactiveEnergyCapacitiveL1	82	Reactive energy capacitive L1
ReactiveEnergyCapacitiveL2	83	Reactive energy capacitive L2
ReactiveEnergyCapacitiveL3	84	Reactive energy capacitive L3
ReactiveEnergyTotal	85	Reactive energy total
ReactiveEnergyInductiveTotal	86	Reactive energy inductive total
ReactiveEnergyCapacitiveTotal	87	Reactive energy capacitive total
ApparentEnergyL1	88	Apparent energy L1
ApparentEnergyL2	89	Apparent energy L2
ApparentEnergyL3	90	Apparent energy L3
PeakVoltageL1_N	91	Peak voltage L1-N
PeakVoltageL2_N	92	Peak voltage L2-N
PeakVoltageL3_N	93	Peak voltage L3-N
PeakCurrentL1	94	Peak current L1
PeakCurrentL2	95	Peak current L2
PeakCurrentL3	96	Peak current L3
RMSCurrentN	97	Rms current neutral conducter

Description: Configuration values for the modul 495AC

typ495State (STRUCT)

InOut:

Name	Type	Comment
xParameterReadWrite	BOOL	Read/write parameter
xGeneralError	BOOL	General error
xSettlingTimeCollectionActive	BOOL	Settling time collection active
xCalibrationActive	BOOL	Calibration active
xModuleError	BOOL	Module error
xPhase1Error	BOOL	Phase 1 error
xPhase2Error	BOOL	Phase 2 error
xPhase3Error	BOOL	Phase 3 error
xPhase1_UnderVoltageUser	BOOL	Phase 1 undervoltage user
xPhase1_OverVoltageUser	BOOL	Phase 1 overvoltage user
xPhase1_OverCurrentUser	BOOL	Phase 1 overcurrent user
xPhase1_UnderVoltageSystem	BOOL	Phase 1 undervoltage system
xPhase1_OverVoltageSystem	BOOL	Phase 1 overvoltage system
xPhase1_OverCurrentSystem	BOOL	Phase 1 overcurrent system
xPhase1_NoZeroCrossing	BOOL	Phase 1 no zero crossing
xPhase2_UnderVoltageUser	BOOL	Phase 2 undervoltage user
xPhase2_OverVoltageUser	BOOL	Phase 2 overvoltage user
xPhase2_OverCurrentUser	BOOL	Phase 2 overcurrent user
xPhase2_UnderVoltageSystem	BOOL	Phase 2 undervoltage system
xPhase2_OverVoltageSystem	BOOL	Phase 2 overvoltage system
xPhase2_OverCurrentSystem	BOOL	Phase 2 overcurrent system
xPhase2_NoZeroCrossing	BOOL	Phase 2 no zero crossing
xPhase3_UnderVoltageUser	BOOL	Phase 3 undervoltage user
xPhase3_OverVoltageUser	BOOL	Phase 3 overvoltage user
xPhase3_OverCurrentUser	BOOL	Phase 3 overcurrent user
xPhase3_UnderVoltageSystem	BOOL	Phase 3 undervoltage system
xPhase3_OverVoltageSystem	BOOL	Phase 3 overvoltage system
xPhase3_OverCurrentSystem	BOOL	Phase 3 overcurrent system
xPhase3_NoZeroCrossing	BOOL	Phase 3 no zero crossing
xModule_RotatingField	BOOL	Module rotating field
xModule_TamperDetect	BOOL	Module tamper detect

Description: Values for state configuration module 495

3.5.2 495

04 DataTypes

typ495Config (STRUCT)

InOut:

Name	Type	Initial	Comment
wIntervalEnergyStorage	WORD		Interval energy storage in s (60..255)
wScalingFactorIndex	WORD		Scaling factor index (0: 1mA .. 6: 1kA)
wNoLoadEffectivePower	WORD		No load effective power (0..24000)
wNoLoadReactivePower	WORD		No load reactive power (0..24000)

continues on next

Table 11 – continued from previous page

Name	Type	Initial	Comment
wNoLoadApparentPower	WORD		No load apparent power (0..24000)
xEnableWatchdog	BOOL		Enable watchdog
xCancelGui	BOOL		This element is used only for display pu
typChannelConfig	ARRAY [1..3] OF *typChannelConfig*		
rSelectedScalingFactor	REAL		This element is used only for display pu
strReadWriteStatus	STRING(41)		This element is used only for display pu
bStatus	BYTE	0	This element is used only for display pu
bPhasePeakSelect	BYTE		Phase peak select (1..3)
xReadConfig	BOOL		Read config
xWriteConfig	BOOL		Write config
xEnableDCMeasurement	BOOL		Enable DC measurement
xPowerSupplyFrequency	BOOL		Power supply frequency
strEnergyMeterGui	STRING(31)		This element is used only for display pu
strMinMaxValueGui	STRING(23)		This element is used only for display pu
wLowWord1	WORD		Correspond to container 1, register 48
wHighWord1	WORD		Correspond to container 2, register 49
wLowWord2	WORD		Correspond to container 3, register 50
wHighWord2	WORD		Correspond to container 4, register 51
bEnergyMeterIndex	BYTE		Energy meter index (0..14)
bMinMaxValueIndex	BYTE		Min max value index (0..7)
xFactorySettings	BOOL		Factory Settings
xFactorySettingsGui	BOOL		This element is used only for display pu
xDeleteAllMinMaxValues	BOOL		Delete all min max values
xDeleteMinMaxValue	BOOL		Delete min max value
xSaveEnergyConsumption	BOOL		Save energy consumption
xDeleteAllPowerMeter	BOOL		Delete all power meter
xDeleteAllPowerMeterGui	BOOL		This element is used only for display pu
xDeletePowerMeter	BOOL		Delete power meter
xDeletePowerMeterGui	BOOL		This element is used only for display pu
xSetPowerMeter	BOOL		Set power meter
xIsRogowski	BOOL		This element is used only for display pu
bRogowskiType	BYTE		Rogowski type (0:RT500, 1:RT100)
wCurrentTransformerRatioN	WORD		Current transformer ratio (1..5000)
dwTamperDetectionThreshold	DWORD		Tamper detection threshold
xEnableUserScalingN	BOOL		Enable user scaling
xHasExtended	BOOL		this element is used only for display pur
xExtendedSettings	BOOL		this element is used only for display pur
xVoltageTransformResolution	BOOL		
bTopologyIndex	BYTE		
strResolutionGui	STRING(3)		this element is used only for display pur
wVoltageTransformerPrimary	WORD		
wVoltageTransformerSecondary	WORD		
strRogowskiTypeGui	STRING(19)		this element is used only for display pur
strRogowskiTypeGui_de	STRING(19)		this element is used only for display pur
rRogowskiResistance	REAL		
rRogowskiMutualInductance	REAL		
strTopologyGui	STRING(31)		this element is used only for display pur
strTopologyGui_de	STRING(31)		this element is used only for display pur

Description: Values for typ configuration module 495

FbAC_Compact3WireWyeDelta_495 (FB)

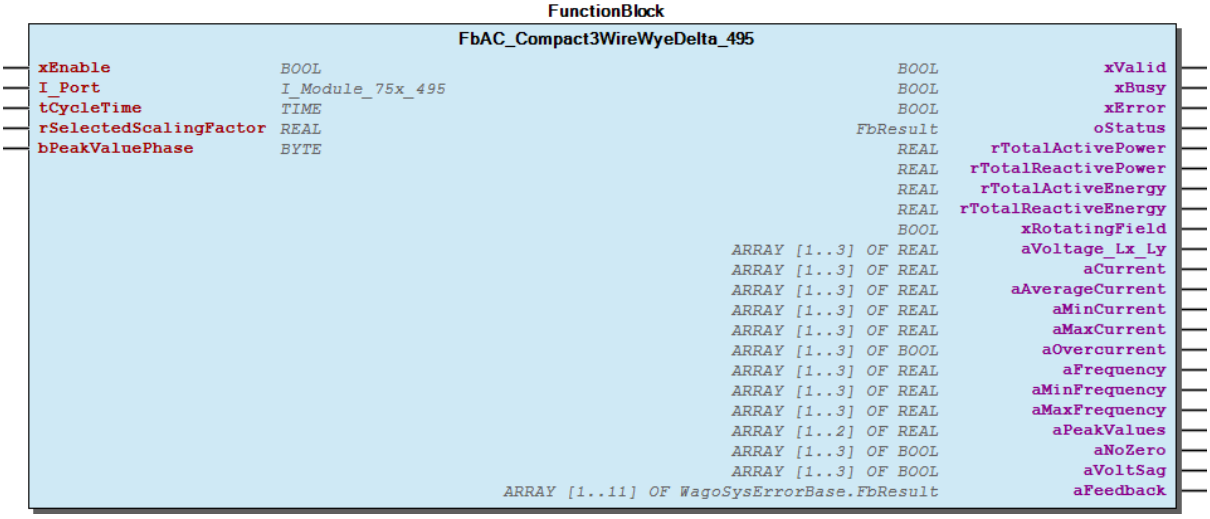
Interface variables

Scope	Name	Type	Initial	Comment
Input	xEnable	BOOL		Activates the function block
	I_Port	WagoTypesModule_75x_49x.I_Module_75x_495		Basic interface
	tCycleTime	TIME	TIME#1s0ms	Intervall for reading values
	rSelectedScalingFactor	REAL	10	Scalingfactor for the energy values
	bPeakValuePhase	BYTE	1	Phase configured for to peak value measuring
Output	xValid	BOOL		High, if data is valid
Output	xBusy	BOOL		Function block busy
Output	xError	BOOL		Error occured, details in oStatus
Output	oStatus	WagoSysErrorBase.FbResult		*Status* information
Output	rTotalActivePower	REAL		Total Active Power [W]
Output	rTotalReactivePower	REAL		Total Reactive Power [var]
Output	rTotalActiveEnergy	REAL		Total Active Energy [Wh]
Output	rTotalReactiveEnergy	REAL		Total Reactive Energy [varh]
Output	xRotatingField	BOOL		Rotating Field
Output	aVoltage_Lx_Ly	ARRAY [1..3] OF REAL		Voltage Lx-Ly [V]
Output	aCurrent	ARRAY [1..3] OF REAL		Current [A]
Output	aAverageCurrent	ARRAY [1..3] OF REAL		Average Current [A]
Output	aMinCurrent	ARRAY [1..3] OF REAL		Minimum Current [A]
Output	aMaxCurrent	ARRAY [1..3] OF REAL		Maximum Current [A]
Output	aOvercurrent	ARRAY [1..3] OF BOOL		Overcurrent
Output	aFrequency	ARRAY [1..3] OF REAL		Frequency [Hz]
Output	aMinFrequency	ARRAY [1..3] OF REAL		Minimum Frequency [Hz]
Output	aMaxFrequency	ARRAY [1..3] OF REAL		Maximum Frequency [Hz]
Output	aPeakValues	ARRAY [1..2] OF REAL		Peak current, peak voltage
Output	aNoZero	ARRAY [1..3] OF BOOL		NoZero
Output	aVoltSag	ARRAY [1..3] OF BOOL		VoltSag
Output	aFeedback	ARRAY [1..11] OF WagoSysErrorBase.FbResult		**0: -> no Error** 1..240: -> bit coded errors, details see below

Function

This function block reads the most common AC values of the 3-Phase Power Measurement Module (750-495) in 3-wire Wye/Delta topology.

Graphical Illustration



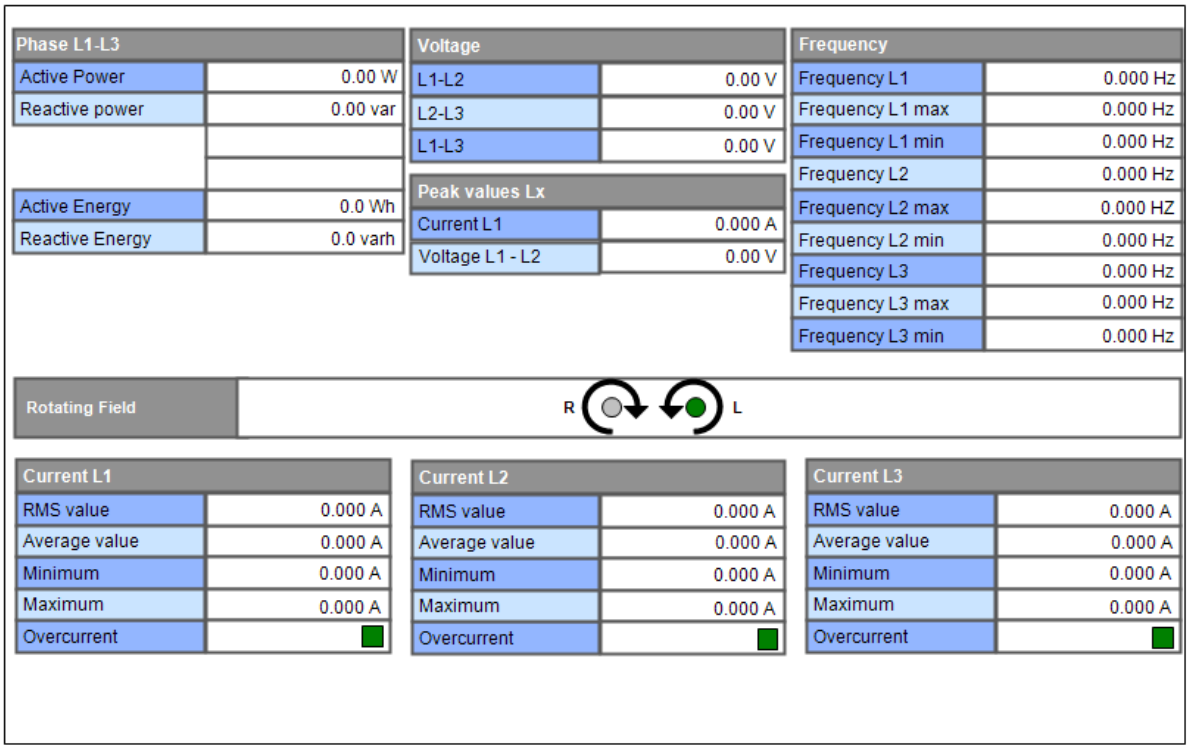
Function description

This function block can be used for cyclic reading of the most important measured values using collection 10. It can be used multiple times in one project.

Note: For the correct unit of energy values, the setting for scaling factor `rSelectedScalingFactor` must be taken into account.

If this function block is used without the function block FbConfigurationAndStatus_495, then it is neccessary to set the parameter `USE_FBAC_COMPACT_495_STANDALONE` to TRUE.

Visualization



Note: The input `m_Input_Fb_750_495_AC_CompactAron_01` is of type `FbAC_Compact3WireWyeDelta_495`

Using this template needs an instance of function block FbAC_Compact3WireWyeDelta_495 as input.

FbAC_Compact_495 (FB)

Interface variables

Scope	Name	Type	Initial	Comment
Input	`xEnable`	`BOOL`		Activates the function block
	`I_Port`	`WagoTypesModule_75x_49x.I_Module_75x_495`		Basic interface
	`tCycleTime`	`TIME`	TIME#1s0ms	Intervall for reading values
	`rSelectedScalingFactor`	`REAL`	10	Scalingfactor for the energy values
Output	`xValid`	`BOOL`		High, if data is valid
Output	`xBusy`	`BOOL`		Function block busy
Output	`xError`	`BOOL`		Error occured, details in oStatus
Output	`oStatus`	`WagoSysErrorBase.FbResult`		*Status* information
Output	`rTotalActivePower`	`REAL`		Total Active Power [W]
Output	`rTotalReactivePower`	`REAL`		Total Reactive Power [var]

continues on next page

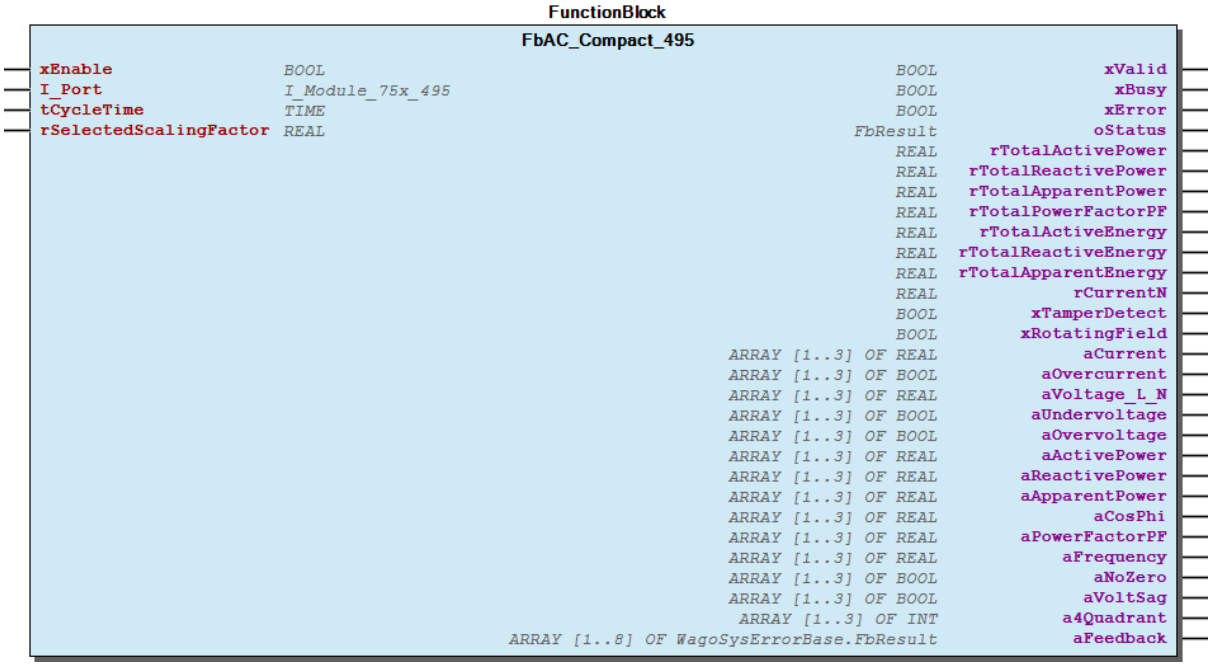
Table 12 – continued from previous page

Scope	Name	Type	Initial	Comment
Output	rTotalApparentPower	REAL		Total Apparent Power [VA]
Output	rTotalPowerFactorPF	REAL		Total Power Factor PF
Output	rTotalActiveEnergy	REAL		Total Active Energy [Wh]
Output	rTotalReactiveEnergy	REAL		Total Reactive Energy [varh]
Output	rTotalApparentEnergy	REAL		Total Apparent Energy [VAh]
Output	rCurrentN	REAL		Current N [A]
Output	xTamperDetect	BOOL		Tamper Detect
Output	xRotatingField	BOOL		Rotating Field
Output	aCurrent	ARRAY [1..3] OF REAL		Current [A]
Output	aOvercurrent	ARRAY [1..3] OF BOOL		Overcurrent
Output	aVoltage_L_N	ARRAY [1..3] OF REAL		Voltage L-N [V]
Output	aUndervoltage	ARRAY [1..3] OF BOOL		Undervoltage
Output	aOvervoltage	ARRAY [1..3] OF BOOL		Overvoltage
Output	aActivePower	ARRAY [1..3] OF REAL		ActivePower [W]
Output	aReactivePower	ARRAY [1..3] OF REAL		ReactivePower [var]
Output	aApparentPower	ARRAY [1..3] OF REAL		ApparentPower [VA]
Output	aCosPhi	ARRAY [1..3] OF REAL		CosPhi
Output	aPowerFactorPF	ARRAY [1..3] OF REAL		PowerFactorPF
Output	aFrequency	ARRAY [1..3] OF REAL		Frequency [Hz]
Output	aNoZero	ARRAY [1..3] OF BOOL		NoZero
Output	aVoltSag	ARRAY [1..3] OF BOOL		VoltSag
Output	a4Quadrant	ARRAY [1..3] OF INT		4-quadrant display
Output	aFeedback	ARRAY [1..8] OF WagoSysErrorBase.FbResult		**0: -> no Error** 1..240: -> bit coded errors, details see below

Function

This function block reads the most common AC values of the 3-Phase Power Measurement module 750-495

Graphical Illustration



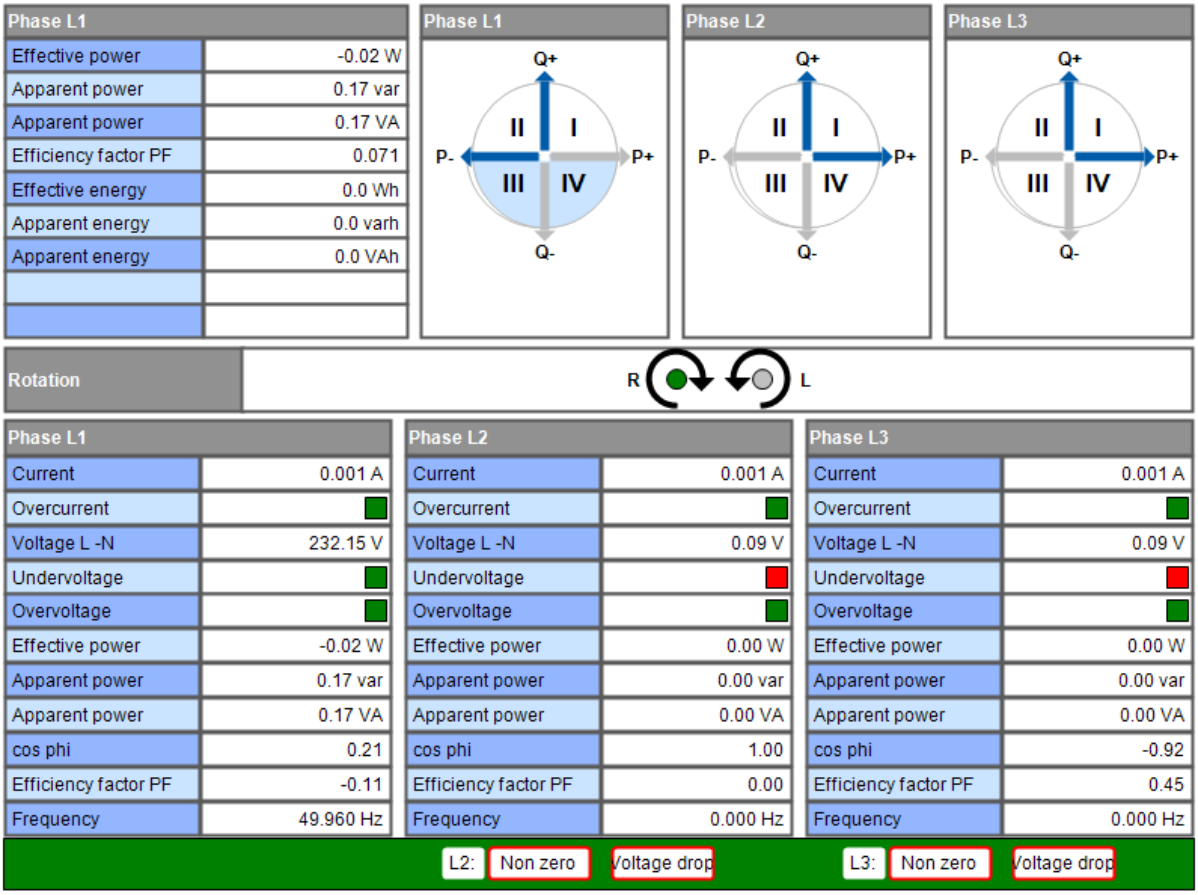
Function description

The function block can be used for cyclic reading of the most important measured values using collection 10. It can be used multiple times in one project.

Note: For the correct unit of energy values, the setting for scaling factor `rSelectedScalingFactor` must be taken into account.

If this function block is used without the function block FbConfigurationAndStatus_495, then it is neccessary to set the parameter `USE_FBAC_COMPACT_495_STANDALONE` to TRUE.

Visualization



Note: The input `m_Input_Fb_750_495_AC_Compact_01` is of type `FbAC_Compact_495`

Using this template needs an instance of function block FbAC_Compact_495 as input.

FbConfigurationAndStatus_495 (FB)

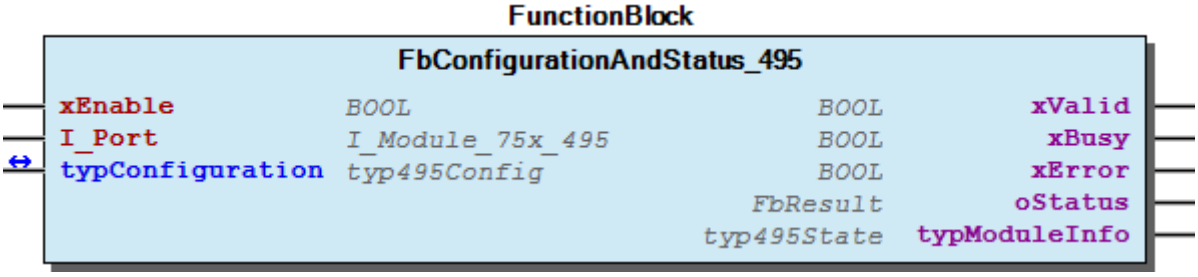
Interface variables

Scop	Name	Type	Ini-tial	Comment
In-put	`xEnable`	`BOOL`	TRUE	Enable function block
	`I_Port`	`WagoTypesModule_75x_49x_I_Module_75x_495`		Basic interface
In-out	`typConfiguration`	*typ495Config*		Configuration data and command bits
Out-put	`xValid`	`BOOL`		Values in typModuleInfo are valid
Out-put	`xBusy`	`BOOL`		Function block in work
Out-put	`xError`	`BOOL`		Error occured during status update or while reading or writing the configuration
Out-put	`oStatus`	`WagoSysErrorBase.FbResult`		
Out-put	`typModuleInfo`	*typ495State*		Actual status

*Function**

This function block continously reads the general module information shown at output `typModuleInfo`.

Graphical Illustration

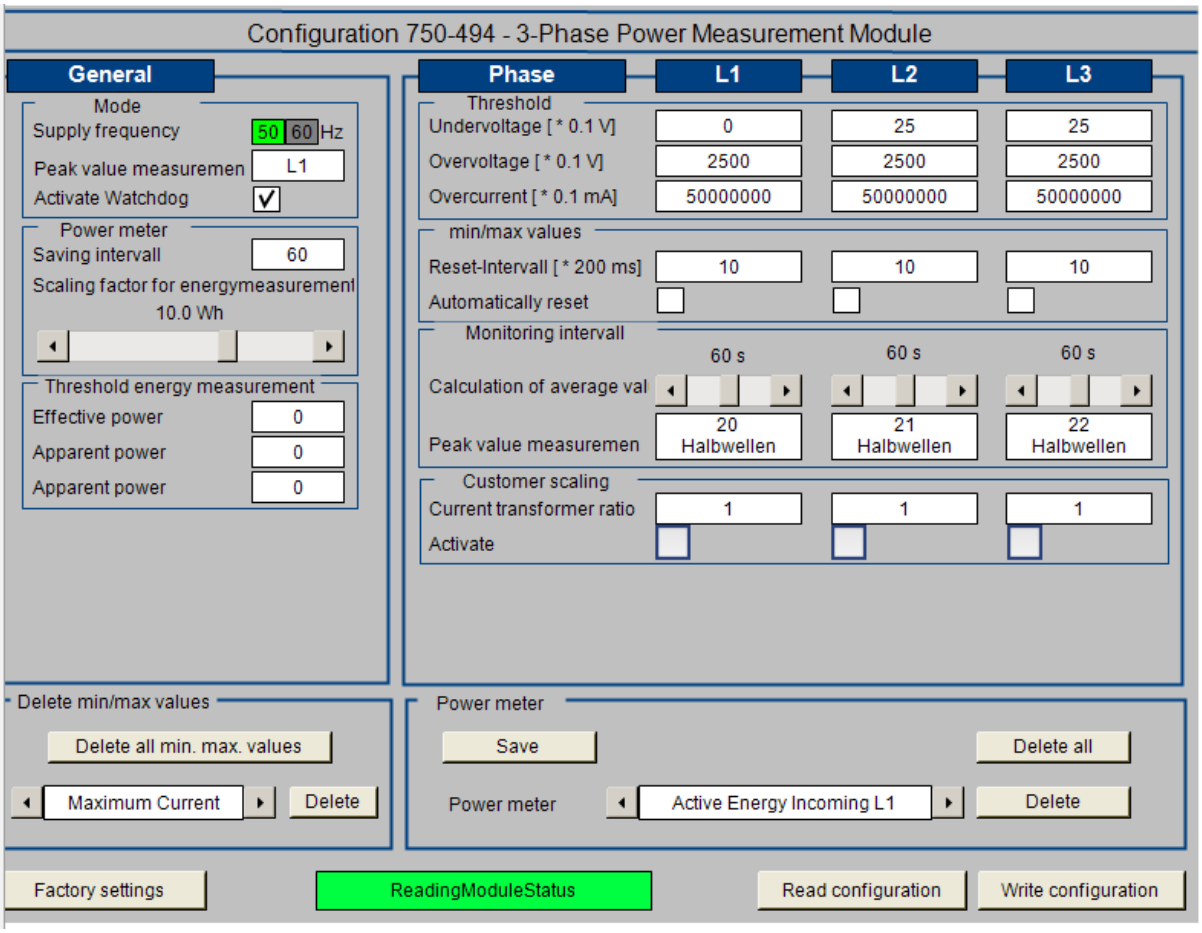


Function description

Note: This function block must be used with each module and be called cyclically.

Additional commands like read or write configuration are possible.

Visualization



Note: The input `m_Input_typConfig_750_495` is of type `typ495Config`

The template needs the variable at the input `typConfiguration` from function block FbConfigurationAnsStatus_495 as input.

FbConfigurationAndStatus_495.mSetMaxCompatibleParameter (METH)

FbConfigurationAndStatus_495.mSetVersionParts (METH)

3.5.3 75x_495/040_010

04 DataTypes

typ495_040_010Config (STRUCT)

InOut:

Name	Type	Initial	Comment
wIntervalEnergyStorage	WORD		Interval energy storage in s (60..255)
wScalingFactorIndex	WORD		Scaling factor index (0: 1mA .. 9: 1000kA)
wNoLoadEffectivePower	WORD		No load effective power (0..24000)
wNoLoadReactivePower	WORD		No load reactive power (0..24000)
wNoLoadApparentPower	WORD		No load apparent power (0..24000)
xEnableWatchdog	BOOL		Enable watchdog
xCancelGui	BOOL		This element is used only for display purpose
typChannelConfig	ARRAY [1..3] OF *typChannelConfig*		
rSelectedScalingFactor	REAL		This element is used only for display purpose
strReadWriteStatus	STRING(41)		This element is used only for display purpose
bStatus	BYTE	0	This element is used only for display purpose
bPhasePeakSelect	BYTE		Phase peak select (1..3)
xReadConfig	BOOL		Read config
xWriteConfig	BOOL		Write config
xPowerSupplyFrequency	BOOL		Power supply frequency
strEnergyMeterGui	STRING(31)		This element is used only for display purpose
strMinMaxValueGui	STRING(23)		This element is used only for display purpose
wLowWord1	WORD		Correspond to container 1, register 48
wHighWord1	WORD		Correspond to container 2, register 49
wLowWord2	WORD		Correspond to container 3, register 50
wHighWord2	WORD		Correspond to container 4, register 51
bEnergyMeterIndex	BYTE		Energy meter index (0..14)
bMinMaxValueIndex	BYTE		Min max value index (0..7)
xFactorySettings	BOOL		Factory Settings
xFactorySettingsGui	BOOL		This element is used only for display purpose
xDeleteAllMinMaxValues	BOOL		Delete all min max values
xDeleteMinMaxValue	BOOL		Delete min max value
xSaveEnergyConsumption	BOOL		Save energy consumption
xDeleteAllPowerMeter	BOOL		Delete all power meter
xDeleteAllPowerMeterGui	BOOL		This element is used only for display purpose
xDeletePowerMeter	BOOL		Delete power meter
xDeletePowerMeterGui	BOOL		This element is used only for display purpose
xSetPowerMeter	BOOL		Set power meter
strResolutionGui	STRING(3)		this element is used only for display purpose

Description: Values for typ configuration module 495

FbAC_Compact_495_040_010 (FB)

Interface variables

Scope	Name	Type	Initial	Comment
Input	xEnable	BOOL		Activates the function block
	I_Port	WagoTypesModule_75x_49x.I_Module_75x_495		Basic interface
	tCycleTime	TIME	TIME#1s0ms	Intervall for reading values
	rSelectedScalingFactor	REAL	10	Scalingfactor for the energy values
Output	xValid	BOOL		High, if data is valid
Output	xBusy	BOOL		Function block busy
Output	xError	BOOL		Error occured, details in oStatus
Output	oStatus	WagoSysErrorBase.FbResult		*Status* information
Output	rTotalActivePower	REAL		Total Active Power [W]
Output	rTotalReactivePower	REAL		Total Reactive Power [var]
Output	rTotalApparentPower	REAL		Total Apparent Power [VA]
Output	rTotalPowerFactor	REAL		Total Power Factor PF
Output	rTotalActiveEnergy	REAL		Total Active Energy [Wh]
Output	rTotalReactiveEnergy	REAL		Total Reactive Energy [varh]
Output	rTotalApparentEnergy	REAL		Total Apparent Energy [VAh]
Output	xRotatingField	BOOL		Rotating Field
Output	aCurrent	ARRAY [1..3] OF REAL		Current [A]
Output	aOvercurrent	ARRAY [1..3] OF BOOL		Overcurrent
Output	aVoltage_L_N	ARRAY [1..3] OF REAL		Voltage L-N [V]
Output	aUndervoltage	ARRAY [1..3] OF BOOL		Undervoltage
Output	aOvervoltage	ARRAY [1..3] OF BOOL		Overvoltage
Output	aActivePower	ARRAY [1..3] OF REAL		ActivePower [W]
Output	aReactivePower	ARRAY [1..3] OF REAL		ReactivePower [var]
Output	aApparentPower	ARRAY [1..3] OF REAL		ApparentPower [VA]
Output	aCosPhi	ARRAY [1..3] OF REAL		CosPhi

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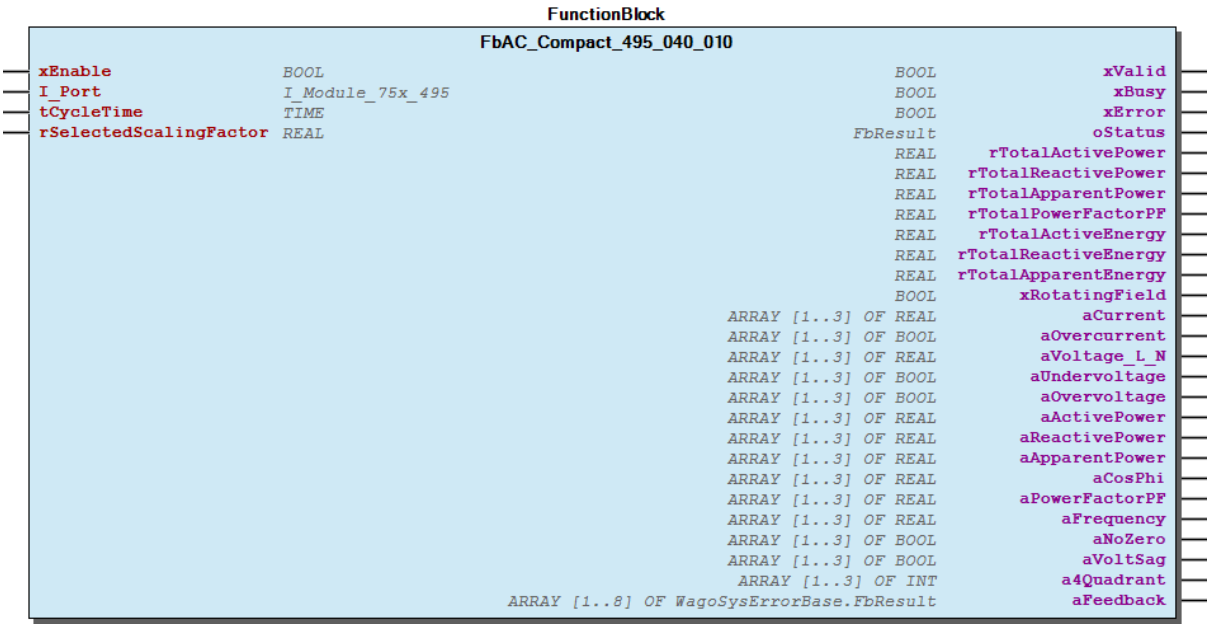
Table 14 – continued from previous page

Scope	Name	Type	Initial	Comment
Output	aPowerFactorPF	ARRAY [1..3] OF REAL		PowerFactorPF
Output	aFrequency	ARRAY [1..3] OF REAL		Frequency [Hz]
Output	aNoZero	ARRAY [1..3] OF BOOL		NoZero
Output	aVoltSag	ARRAY [1..3] OF BOOL		VoltSag
Output	a4Quadrant	ARRAY [1..3] OF INT		4-quadrant display
Output	aFeedback	ARRAY [1..8] OF WagoSysErrorBase.FbResult		**0: -> no Error** 1..240: -> bit coded errors, details see below

Function

This function block reads the most common AC values of the 3-Phase Power Measurement module 750-495/040-010

Graphical Illustration



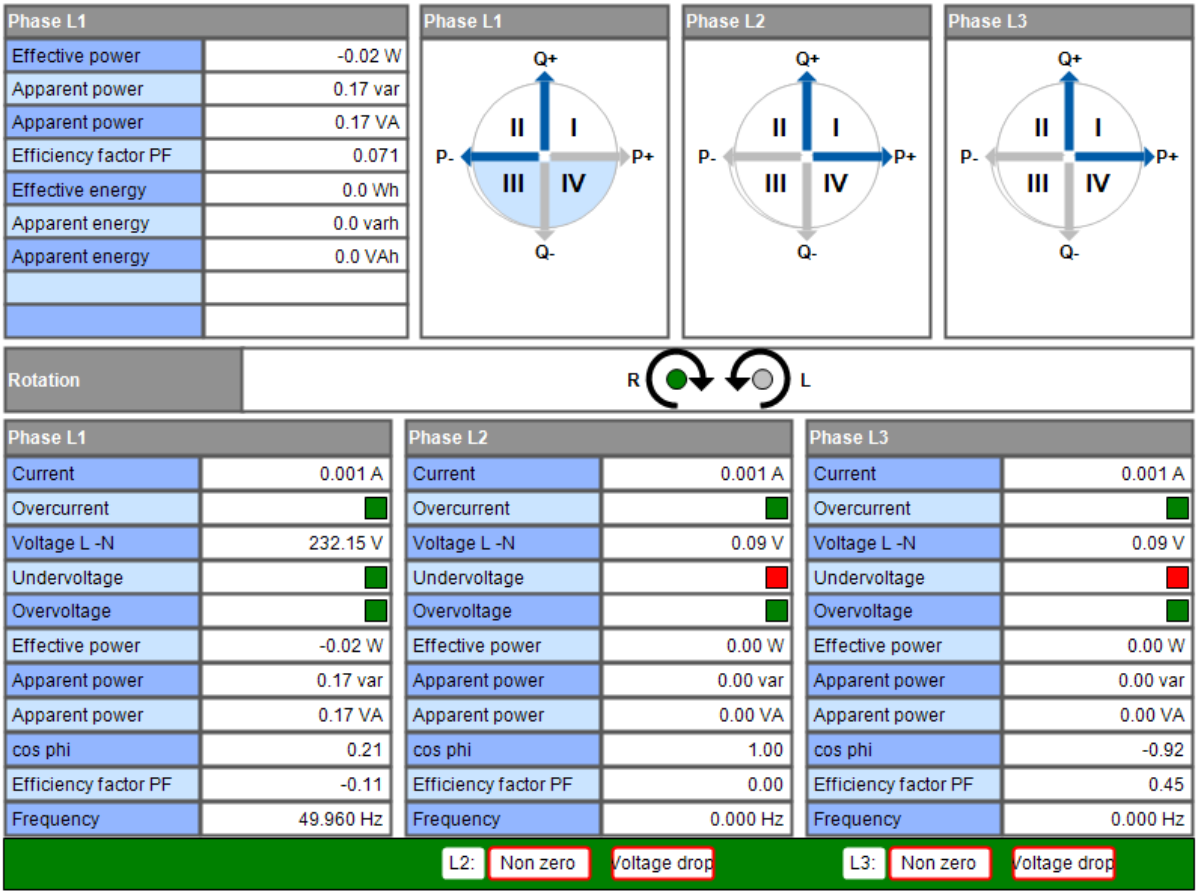
Function description

The function block can be used for cyclic reading of the most important measured values using collection 10. It can be used multiple times in one project.

Note: For the correct unit of energy values, the setting for scaling factor `rSelectedScalingFactor` must be taken into account.

If this function block is used without the function block FbConfigurationAndStatus_495_040_010, then it is necessary to set the parameter `USE_FBAC_COMPACT_495_STANDALONE` to TRUE.

Visualization



Note: The input `m_Input_Fb_750_495_AC_Compact_01` is of type `FbAC_Compact_495_040_010`

Using this template needs an instance of function block FbAC_Compact_495_040_010 as input.

FbConfigurationAndStatus_495_040_010 (FB)

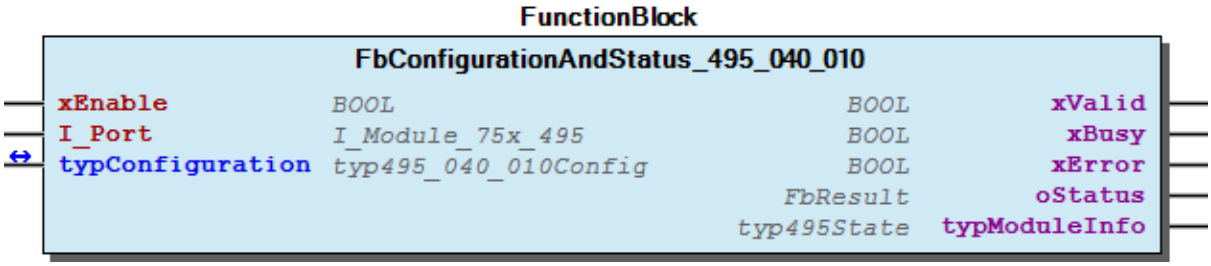
Interface variables

Scope	Name	Type	Initial	Comment
Input	xEnable	BOOL	TRUE	Enable function block
	I_Port	WagoTypesModule_75x_49x.I_Module_75x_495		Basic interface
Inout	typConfiguration	*typ495_040_010Config*		Configuration data and command bits
Output	xValid	BOOL		Values in typModuleInfo are valid
Output	xBusy	BOOL		Function block in work
Output	xError	BOOL		Error occured during status update or while reading or writing the configuration
Output	oStatus	WagoSysErrorBase.FbResult		**Status:** Reading configuration Writing configuration Reading-ModuleStatus Executing command **Error:** Error reading configuration Error writing configuration Error executing command Preset value exceeds valid

Function

This function block reads continously the general modul information shown at output `typModuleInfo`

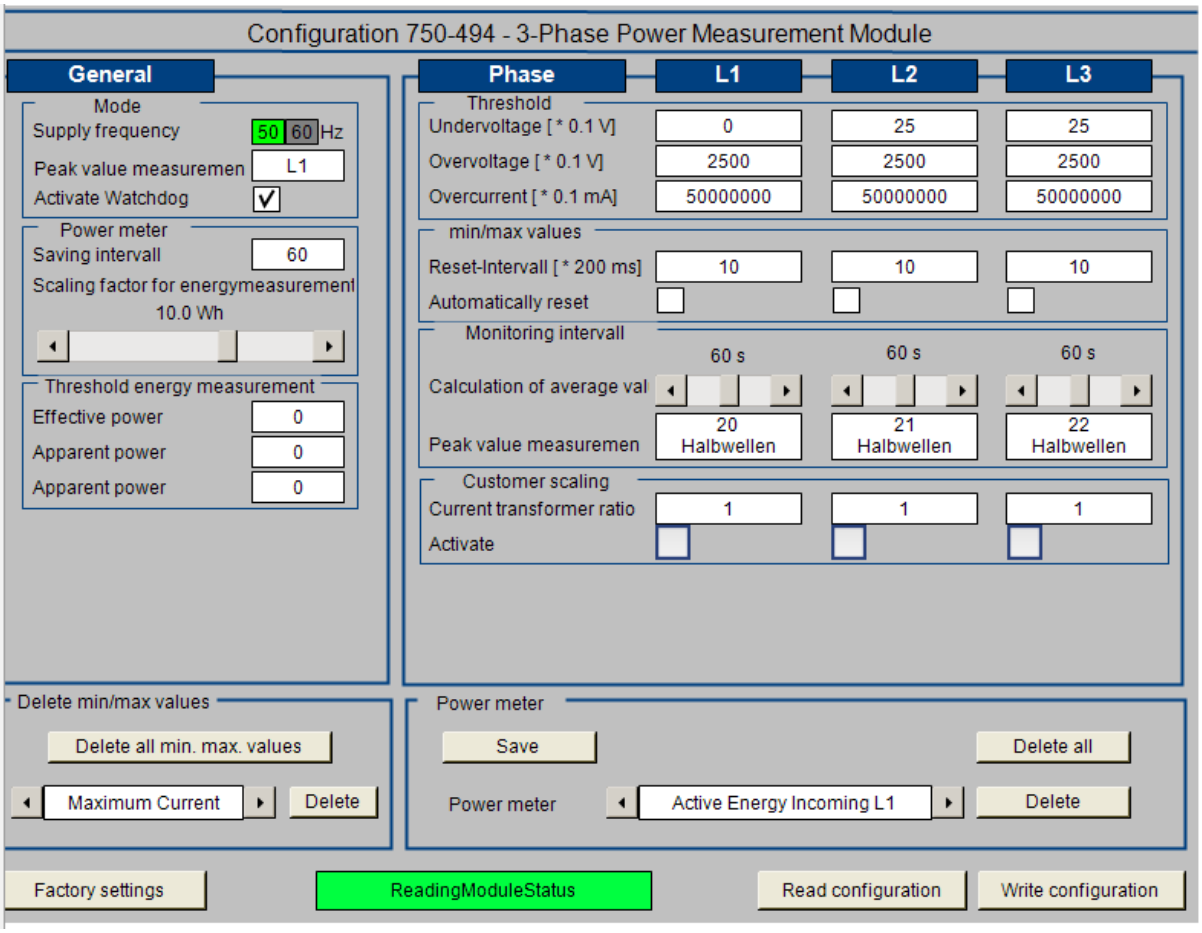
Graphical Illustration



Function description

Additional commands like read or write configuration are possible.

Visualization



Note: The input `m_Input_typConfig_750_495_040_010` is of type `typ495_040_010Config`

The template needs the variable at the input `typConfiguration` from function block `FbConfigurationAndStatus_495_040_010` as input.

3.5.4 FbAC_Values_495 (FB)

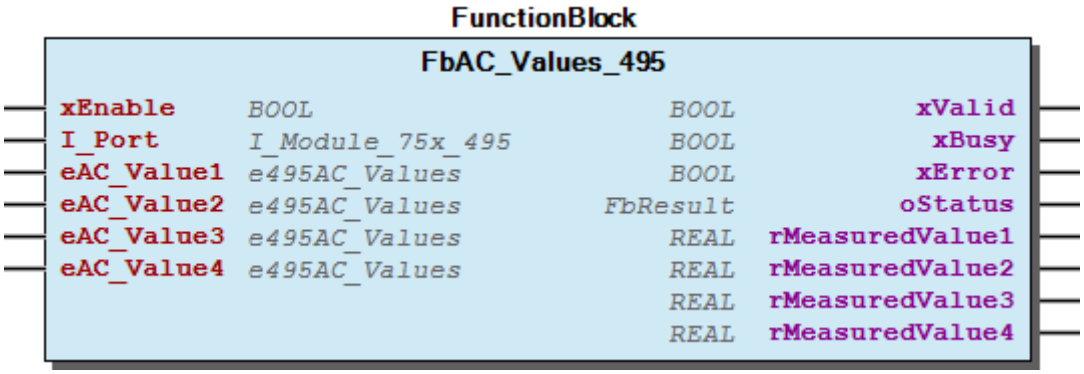
Interface variables

Scope	Name	Type	Comment
Input	xEnable	BOOL	Activates the function block
	I_Port	WagoTypesModule_75x_49x.I_Module_75x_495	Basic interface
	eAC_Value1	*e495AC_Values*	ID of first value to be read
	eAC_Value2	*e495AC_Values*	ID of second value to be read
	eAC_Value3	*e495AC_Values*	ID of third value to be read
	eAC_Value4	*e495AC_Values*	ID of fourth value to be read
Output	xValid	BOOL	High, if data is valid
Output	xBusy	BOOL	Function block busy
Output	xError	BOOL	Error occured, details in oStatus
Output	oStatus	WagoSysErrorBase.FbResult	*Status* information
Output	rMeasuredValue1	REAL	Measured value for ID 1
Output	rMeasuredValue2	REAL	Measured value for ID 2
Output	rMeasuredValue3	REAL	Measured value for ID 3
Output	rMeasuredValue4	REAL	Measured value for ID 4

Function

This function block reads up to 4 AC values from the 3-Phase Power Measurement Module (750-495).

Graphical Illustration



Function description

This function block can be used for cyclic reading of up to 4 process values from collection 10. It can be used multiple times in one project.

3.5.5 FbHarmonicValues_495 (FB)

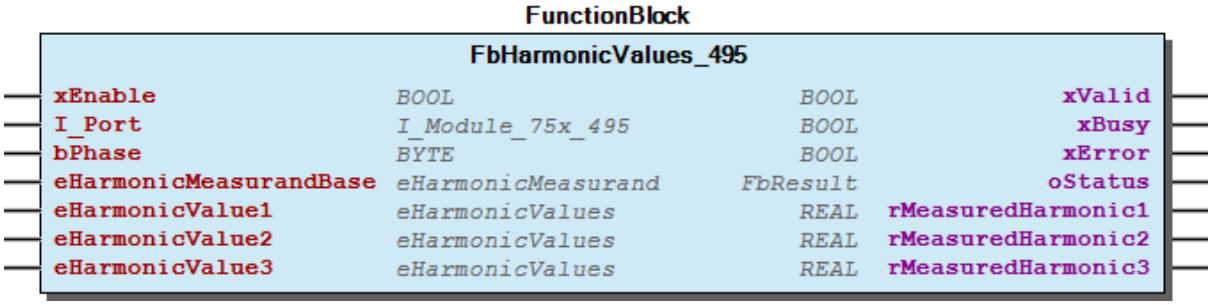
Interface variables

Scope	Name	Type	Initial	Comment
Input	xEnable	BOOL		Activates the function block
	I_Port	WagoTypesModule_75x_49x.I_Module_75x_495		Basic interface
	bPhase	BYTE	1	[1..3] ->Reading data from this phase
	eHarmonicMeasurandBase	*eHarmonicMeasurand*		Measurand for reading
	eHarmonicValue1	*eHarmonicValues*		ID of first value to be read
	eHarmonicValue2	*eHarmonicValues*		ID of second value to be read
	eHarmonicValue3	*eHarmonicValues*		ID of third value to be read
Output	xValid	BOOL		High, if data is valid
Output	xBusy	BOOL		Function block busy
Output	xError	BOOL		Error occured, details in oStatus
Output	oStatus	WagoSysErrorBase.FbResult		*Status* information
Output	rMeasuredHarmonic1	REAL		Measured value for ID 1
Output	rMeasuredHarmonic2	REAL		Measured value for ID 2
Output	rMeasuredHarmonic3	REAL		Measured value for ID 3

Function

This function block reads the selected harmonic values of the 3-Phase Power Measurement Module (750-495).

Graphical Illustration



Function description

This function block can be used for cyclic reading of up to 3 harmonics from collections 20 to 22. It can be used multiple times in one project.

3.6 879_3000_MID

3.6.1 20 Functional Blocks

Classic

FbAC_Compact_MID (FB)

Interface variables

Scope	Name	Type	Initial	Com
Input	xEnable	BOOL		Acti
	I_Port	WagoTypesCom.I_WagoSysComBase		Com
	bModbusAddress	BYTE		Mod
Inout	bToken	BYTE		This
Output	xValid	BOOL		High
Output	xBusy	BOOL		Func
Output	xError	BOOL		Erro
Output	oStatus	WagoSysErrorBase.FbResult		*Statu*
	eBaudrate	*eMID_Baudrate*	eMID_Baudrate.BAUD_9600	Defa
	eParity	*eMID_Parity*	eMID_Parity.PARITY_EVEN	Defa
	tCycleTime	TIME	TIME#1s0ms	Inter
Output	rVoltage	REAL		Volt
Output	aVoltage	ARRAY [1..3] OF REAL		Volt
Output	rGridFrenquency	REAL		Freq
Output	rCurrent	REAL		Curr
Output	aCurrent	ARRAY [1..3] OF REAL		Curr
Output	rTotalActivePower	REAL		Tota
Output	aActivePower	ARRAY [1..3] OF REAL		Acti
Output	rTotalReactivePower	REAL		Tota
Output	aReactivePower	ARRAY [1..3] OF REAL		Reac
Output	rTotalApparentPower	REAL		Tota
Output	aApparentPower	ARRAY [1..3] OF REAL		App
Output	rPowerFactorPF	REAL		Pow
Output	aPowerFactorPF	ARRAY [1..3] OF REAL		Pow
Output	rTotalActiveEnergy	REAL		Tota
Output	aTariffActiveEnergy	ARRAY [1..2] OF REAL		Tari
Output	aActiveEnergy	ARRAY [1..3] OF REAL		Acti
Output	rTotalForwardActiveEnergy	REAL		Tota
Output	aTariffForwardActiveEnergy	ARRAY [1..2] OF REAL		Tari
Output	aForwardActiveEnergy	ARRAY [1..3] OF REAL		Forv
Output	rTotalReverseActiveEnergy	REAL		Tota
Output	aTariffReverseActiveEnergy	ARRAY [1..2] OF REAL		Tari
Output	aReverseActiveEnergy	ARRAY [1..3] OF REAL		Reve
Output	rTotalReactiveEnergy	REAL		Tota
Output	aTariffReactiveEnergy	ARRAY [1..2] OF REAL		Tari
Output	aReactiveEnergy	ARRAY [1..3] OF REAL		Reac
Output	rTotalForwardReactiveEnergy	REAL		Tota
Output	aTariffForwardReactiveEnergy	ARRAY [1..2] OF REAL		Tari
Output	aForwardReactiveEnergy	ARRAY [1..3] OF REAL		Forv
Output	rTotalReverseReactiveEnergy	REAL		Tota
Output	aTariffReverseReactiveEnergy	ARRAY [1..2] OF REAL		Tari

Table 15 – continued from previous pag

Scope	Name	Type	Initial	Con
Output	aReverseReactiveEnergy	ARRAY [1..3] OF REAL		Reve
Output	rTotalApparentEnergy	REAL		Tota
Output	iTariff	INT		T1/T
Output	rResettableDayCounter	REAL		Rese
Output	a4Quadrant	ARRAY [1..3] OF INT		4-qu
Output	stMID_Itent	*typMID_Ident*		Iden

Function

This function block reads the most common AC values of the MID counter 879-3000

Graphical Illustration

Fig. 9: Graphical Interface of FbAC_Compact_MID

Function description

A visualization template `tplStatusAC_Compact_MID` is available.

Note: The input `m_Input_FbAC_Compact` is of type `FbAC_Compact_MID`

Using this template needs an instance of function block FbAC_Compact_MID as input.

FbConfiguration_MID (FB)

Interface variables

Scop	Name	Type	Initial	Comment	Inherited from
Input	xEnable	BOOL		Activates the function block	*FbAC_Base_MID*
	I_Port	WagoTypesCom.I_WagoSysComBase		Com port, either the onboard port or a serial terminal	*FbAC_Base_MID*
	bModbusAddress	BYTE		Modbus address of MID counter	*FbAC_Base_MID*
Inout	bToken	BYTE		This variable must be the same for all function blocks on the same line	*FbAC_Base_MID*
Output	xValid	BOOL		High, if awData is valid	*FbAC_Base_MID*
Output	xBusy	BOOL		Function block busy	*FbAC_Base_MID*
Output	xError	BOOL		Error occured, details in oStatus	*FbAC_Base_MID*
Output	oStatus	WagoSysErrorBase.FbResult		*Status* information	*FbAC_Base_MID*
	eBaudrate	*eMID_Baudrate*	eMID_Baudrate.BAUD_9600		
	eParity	*eMID_Parity*	eMID_Parity.PARITY_NONE		
	typMid_ModbusConfig	*typMid_ModbusConfig*			
Inout	xReadConfiguration	BOOL		Read configuration	
Inout	xWriteConfiguration	BOOL		Write configuration	
Inout	typMID_Config	*typMID_Config*		Configuration values	
Inout	xWriteModbusConfiguration	BOOL			
Inout	xResetPowerDownCounter	BOOL			
Inout	xResetDayCounter	BOOL			
Output	eFeedback	*e_MID_Feedback*			

Function

This function block reads or writes configuration values. It is differentiated between the counter configuration values and the modbus communication values.

In case of a `879-3040` the value for the current transformer will only be written if the value `SCIP_WRITING_CT` from the `ParameterList` is set to `False`.

Note: It is not really very comfortable to change the modbus parameter by this function block, though it is possible

Changing the modbus communication parameter will interrupt the connection with the counter. The communication must be reset and enabled again, with the new parameter. Since the interruption happens immediately only one value at a time is changed, starting with the modbus id, than the baudrate and at last the parity.

Graphical Illustration

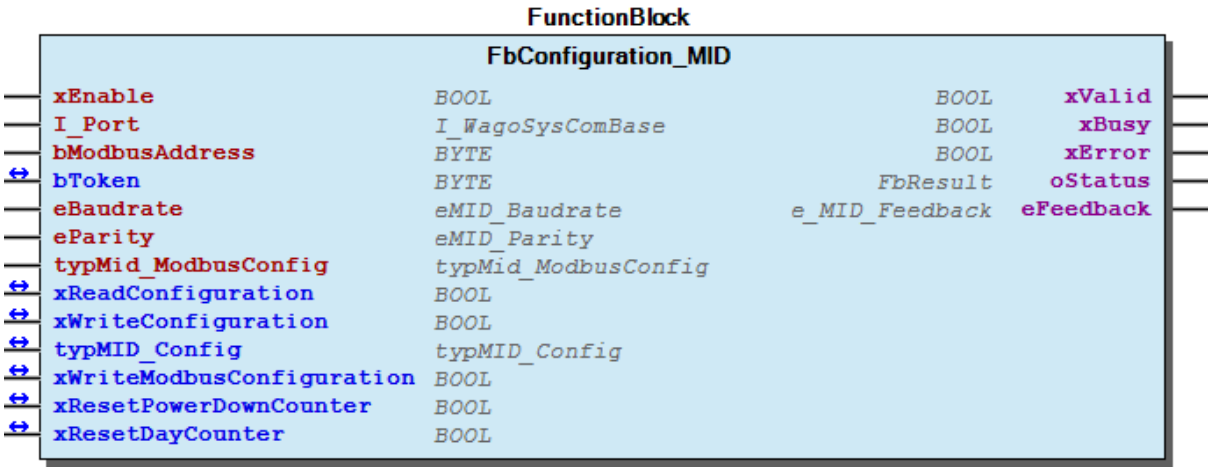


Fig. 10: Graphical Interface of FbConfiguration_MID

Function description

A visualization template is available.

If you need to change even the modbus communication parameter it is necessary to adjust the variable `SHOW_MODBUS_PARAMETER_IN_VISU` from the `ParameterList`.

Note: The input `m_Input_typConfig_MID` is of type `typMID_Config`

Note: The input `m_Input_Fb_Configuration` is of type `FbConfiguration_MID`

Using this template needs an instance of function block FbConfiguration_MID as input.

FbAC_Compact_MID_MultiQuery (FB)

Interface variables

Scope	Name	Type	Initial	Comment
Input	IMbMasterMultiQuery	I_MbMasterMultiQuery		
	xEnable	BOOL		
	bUnitId	BYTE	1	SlaveAddress
	tCycleTime	TIME	TIME#3s0ms	Intervall for reading value
Output	xValid	BOOL		
Output	xBusy	BOOL		
Output	xError	BOOL		

Table 16 – continued from previous page

Scope	Name	Type	Initial	Comment
Output	oStatus	WagoSysErrorBase.FbResult		status information
Output	rVoltage	REAL		Voltage [V]
Output	aVoltage	ARRAY [1..3] OF REAL		Voltage [V]
Output	rGridFrenquency	REAL		Frequency [Hz]
Output	rCurrent	REAL		Current [A]
Output	aCurrent	ARRAY [1..3] OF REAL		Current [A]
Output	rTotalActivePower	REAL		Total Active Power [kW]
Output	aActivePower	ARRAY [1..3] OF REAL		ActivePower [kW]
Output	rTotalReactivePower	REAL		Total Reactive Power [kva
Output	aReactivePower	ARRAY [1..3] OF REAL		Reactive Power [kvar]
Output	rTotalApparentPower	REAL		Total Apparent Power [kV
Output	aApparentPower	ARRAY [1..3] OF REAL		Apparent Power [kVA]
Output	rPowerFactorPF	REAL		Power Factor PF
Output	aPowerFactorPF	ARRAY [1..3] OF REAL		Power Factor PF
Output	rTotalActiveEnergy	REAL		Total Active Energy [kWh
Output	aTariffActiveEnergy	ARRAY [1..2] OF REAL		Tariff T1/T2 Active Energ
Output	aActiveEnergy	ARRAY [1..3] OF REAL		Active Energy [kWh]
Output	rTotalForwardActiveEnergy	REAL		Total Forward Active Ener
Output	aTariffForwardActiveEnergy	ARRAY [1..2] OF REAL		Tariff T1/T2 Forward Acti
Output	aForwardActiveEnergy	ARRAY [1..3] OF REAL		Forward Active Energy [k
Output	rTotalReverseActiveEnergy	REAL		Total Reverse Active Ener
Output	aTariffReverseActiveEnergy	ARRAY [1..2] OF REAL		Tariff T1/T2 Reverse Acti
Output	aReverseActiveEnergy	ARRAY [1..3] OF REAL		Reverse Active Energy [k
Output	rTotalReactiveEnergy	REAL		Total Reactive Energy [kv
Output	aTariffReactiveEnergy	ARRAY [1..2] OF REAL		Tariff T1/T2 Reactive Ene
Output	aReactiveEnergy	ARRAY [1..3] OF REAL		Reactive Energy [kvarh]
Output	rTotalForwardReactiveEnergy	REAL		Total Forward Reactive En
Output	aTariffForwardReactiveEnergy	ARRAY [1..2] OF REAL		Tariff T1/T2 Forward Reac
Output	aForwardReactiveEnergy	ARRAY [1..3] OF REAL		Forward Reactive Energy
Output	rTotalReverseReactiveEnergy	REAL		Total Reverse Reactive En
Output	aTariffReverseReactiveEnergy	ARRAY [1..2] OF REAL		Tariff T1/T2 Reverse Reac
Output	aReverseReactiveEnergy	ARRAY [1..3] OF REAL		Reverse Reactive Energy [
Output	rTotalApparentEnergy	REAL		Total Apparent Energy [kV
Output	iTariff	INT		T1/T2
Output	rResettableDayCounter	REAL		Resettable Day Counter [k
Output	a4Quadrant	ARRAY [1..3] OF INT		4-quadrant display
Output	stMID_Itent	*typMID_Ident*		Identity data

Function

This function block reads the most common AC values of the MID counter 879-3000

Graphical Illustration

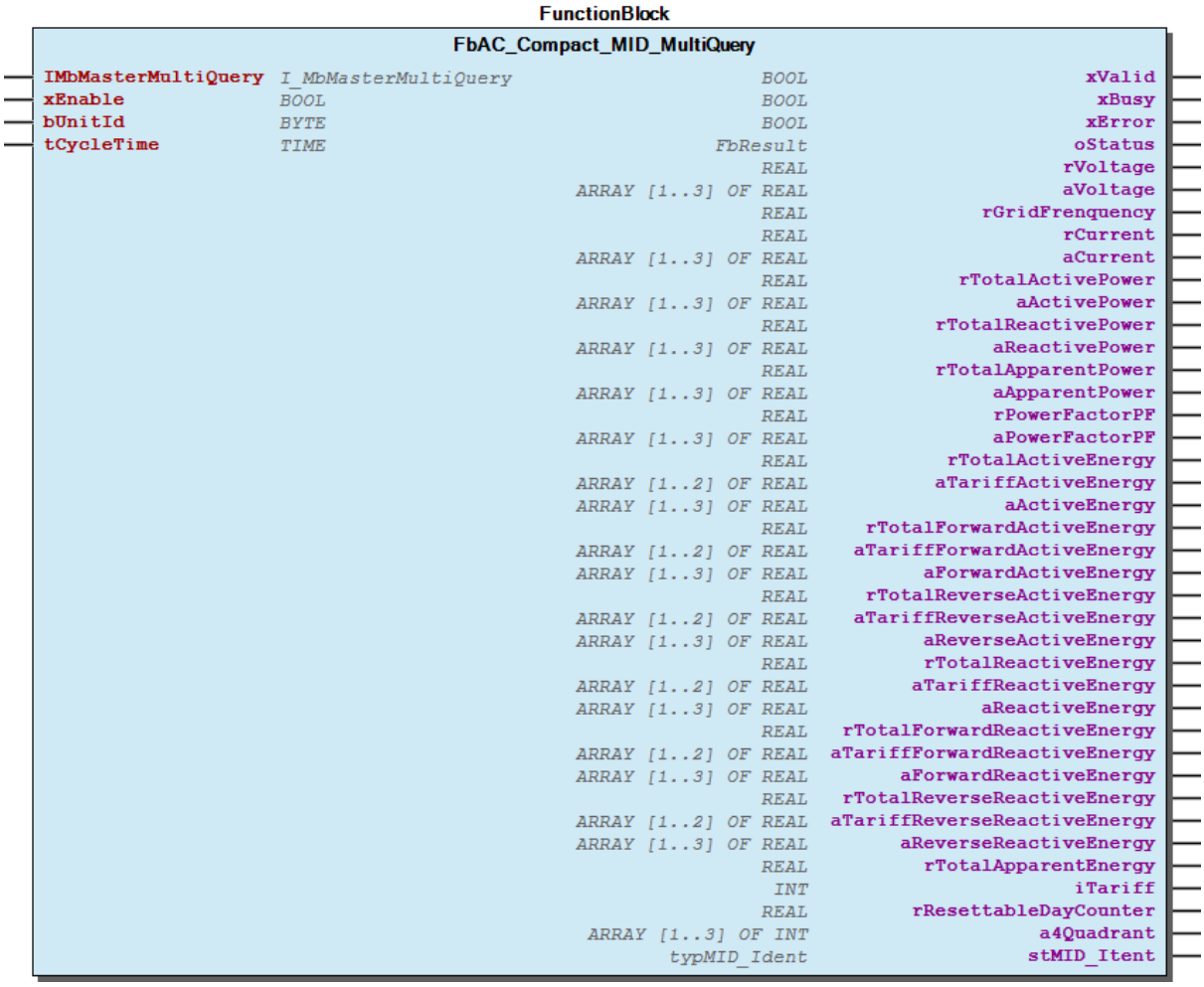


Fig. 11: Graphical Interface of FbAC_Compact_MID_MultiQuery

Function description

A visualization template `tplStatusAC_Compact_MID_MultiQuery` is available.

Note: The input `m_Input_FbAC_Compact` is of type `FbAC_Compact_MID_MultiQuery`

Using this template needs an instance of function block FbAC_Compact_MID_MultiQuery as input.

FbAC_Compact_MID_MultiQuery.onError (METH)

Interface variables

Scope	Name	Type
Return	onError	BOOL
Input	IQuery	WagoAppPlcModbus.I_Query
Input	utResponse	WagoAppPlcModbus.typMbResponse
Input	oStatus	WagoSysErrorBase.FbResult

after each request with errors is method called

FbAC_Compact_MID_MultiQuery.onResponse (METH)

Interface variables

Scope	Name	Type
Return	onResponse	BOOL
Input	IQuery	WagoAppPlcModbus.I_Query
Input	utResponse	WagoAppPlcModbus.typMbResponse

FbConfiguration_MID_MultiQuery (FB)

Interface variables

Scope	Name	Type	Initial	Comment	Inherited from
Input	IMbMasterMultiQuery	IyMbMasterMultiQuery			FbDigitalTwinMbSlaveDevice
	xEnable	BOOL		Enable function block	
	bUnitId	BYTE	1	SlaveAddress	
Inout	xReadConfiguration	BOOL		Read configuration	
Inout	xWriteConfiguration	BOOL		Write configuration	
Inout	typMID_Config	*typMID_Config*		Configuration values	
Inout	xResetPowerDownCounter	BOOL		Reset power down counter	
Inout	xResetDayCounter	BOOL		Reset day counter	
Output	xValid	BOOL		Job done	
Output	xBusy	BOOL		A job is active	
Output	xError	BOOL		Error occured	
Output	oStatus	WagoSysErrorBase.FbResult		status information	
Output	eFeedback	*e_MID_Feedback*			

Function

This function block reads or writes configuration values.

In case of a `879-3040` the value for the current transformer will only be written if the value `SCIP_WRITING_CT` from the `ParameterList` is set to `False`.

Graphical Illustration

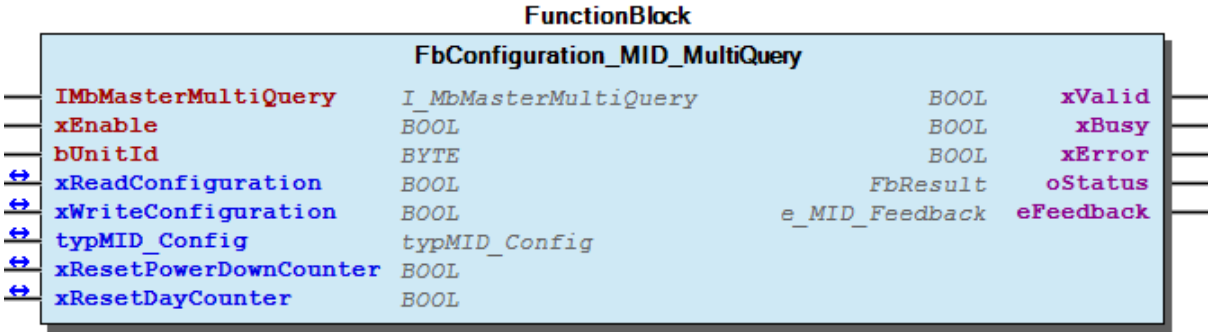


Fig. 12: Graphical Interface of FbConfiguration_MID_MultiQuery

Function description

A visualization template is available.

Note: The input `m_Input_typConfig_MID` is of type `typMID_Config`

Note: The input `m_Input_Fb_Configuration` is of type `FbConfiguration_MID_MultiQuery`

FbConfiguration_MID_MultiQuery.onError (METH)

Interface variables

Scope	Name	Type
Return	onError	BOOL
Input	IQuery	WagoAppPlcModbus.I_Query
Input	utResponse	WagoAppPlcModbus.typMbResponse
Input	oStatus	WagoSysErrorBase.FbResult

after each request with errors is method called

FbConfiguration_MID_MultiQuery.onResponse (METH)

Interface variables

Scope	Name	Type
Return	onResponse	BOOL
Input	IQuery	WagoAppPlcModbus.I_Query
Input	utResponse	WagoAppPlcModbus.typMbResponse

3.6.2 29 DataTypes

eMID_Baudrate (ENUM)

InOut:

Name	Initial
BAUD_300	300
BAUD_600	600
BAUD_1200	1200
BAUD_2400	2400
BAUD_4800	4800
BAUD_9600	9600
BAUD_19200	19200
BAUD_38400	38400
BAUD_56700	56700
BAUD_115200	115200

eMID_Parity (ENUM)

Attributes:

`qualified_only`

InOut:

Name	Initial
PARITY_NONE	0
PARITY_EVEN	1
PARITY_ODD	2

e_MID_Feedback (ENUM)

InOut:

Name	Initial
MID_Ready	0
MID_ReadingSettings	1
MID_WritingSettings	2
MID_ErrorReadingSettings	3
MID_ErrorWritingingSettings	4
MID_ExecutingCommand	5
MID_ErrorExecutingCommand	6
MID_ErrorCommandValue	7
MID_ErrorTimeout	8
MID_ErrorCommunicationBase	9
MID_SetUpCommunication	10

{attribute 'qualified_only'} {attribute 'strict'}

typMID_Config (STRUCT)

InOut:

Name	Type	Initial	Comment
rS0_PulseRate	REAL	1.0	10000,2000,1000,100,10,1,0.1,0.01 [imp/kWh] FLOAT ABCD
bS0_PulseWidth	BYTE	10	2..99ms
bS0_PulseType	BYTE		
wCT_Prim	WORD	9995	
wCT_Sec	WORD	5	
eTariff	BYTE	1	1..4

typMID_Ident (STRUCT)

InOut:

Name	Type	Comment
dwSerialNumber	DWORD	register 16#4000, HEX
sSerialNumber	STRING	register 16#4000, HEX
uiMeterCode	UINT	register 16#4002, HEX
sMeterCode	STRING	register 16#4002, HEX
uiMobusID	UINT	register 16#4003, SIGNED
uiBaudRate	UINT	register 16#4004, SIGNED
rProtocolVersion	REAL	register 16#4005, FLOAT ABCD
rSoftwareVersion	REAL	register 16#4007, FLOAT ABCD
rHardwareVersion	REAL	register 16#4009, FLOAT ABCD

continues on next page

Table 17 – continued from previous page

Name	Type	Comment
iMeterAmps	INT	register 16#400B, SIGNED [A]
uiCTratio	UINT	register 16#400C, HEX [A]
rS0outputRate	REAL	register 16#400D, FLOAT ABCD [imp/kwh]
iCombinationCode	INT	register 16#400F, SIGNED
uiLCDcycleTime	UINT	register 16#4010, HEX [s]
iParitySetting	INT	register 16#4011, SIGNED
uiL1currentDirection	UINT	register 16#4012, ASCII
sL1currentDirection	STRING(2)	
uiL2currentDirection	UINT	register 16#4013, ASCII
sL2currentDirection	STRING(2)	
uiL3currentDirection	UINT	register 16#4014, ASCII
sL3currentDirection	STRING(2)	
iErrorCode	INT	register 16#4015, SIGNED
iPowerDownCounter	INT	register 16#4016, SIGNED
iPresetQuadrant	INT	register 16#4017, SIGNED
iL1quadrant	INT	register 16#4018, SIGNED
iL2quadrant	INT	register 16#4019, SIGNED
iL3quadrant	INT	register 16#401A, SIGNED
udiChecksum	UDINT	register 16#401B, HEX
sChecksum	STRING	register 16#401B, HEX
udiActiveStatusWord	UDINT	register 16#401D, HEX
sActiveStatusWord	STRING	register 16#401D, HEX
iCTmode	INT	register 16#401F, SIGNED [A]

typMID_ModbusConfig (STRUCT)

InOut:

Name	Type	Initial
uiModbusID	UINT	1
eBaudRate	*eMID_Baudrate*	eMID_Baudrate.BAUD_9600
eParity	*eMID_Parity*	eMID_Parity.PARITY_EVEN

3.6.3 90 Internal

FbAC_Base_MID (FB)

Interface variables

Scope	Name	Type	Comment
Input	xEnable	BOOL	Activates the function block
	I_Port	WagoTypesCom.I_WagoSysComBase	Com port, either the onboard port or a serial terminal
	bModbusAddress	BYTE	Modbus address of MID counter
Inout	bToken	BYTE	This variable must be the same for all function blocks on the same line
Output	xValid	BOOL	High, if awData is valid
Output	xBusy	BOOL	Function block busy
Output	xError	BOOL	Error occured, details in oStatus
Output	oStatus	WagoSysErrorBase.FbResult	*Status* information

{attribute 'conditionalshow' := 'wagoapplication'}

Function

Graphical Illustration

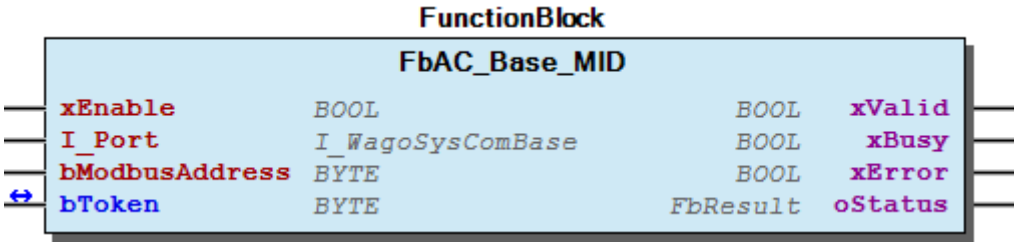


Fig. 13: Graphical Interface of FbAC_Base_MID

Function description

CHAPTER

FOUR

30 VISUALIZATIONS

4.1 3PPT

4.1.1 3PPT_MultiQuery

4.2 493

4.3 494

4.3.1 Shunt (e.g. 494-000/005)

FW01_03

FW04_xx

4.3.2 Standard(e.g. 494, 494-001)

FW01_05, FW04_xx

FW06_xx

4.4 495

4.4.1 495

FW01_04

FW05_xx

4.4.2 495/040_010

4.5 879_3000_MID

4.5.1 Classic

CHAPTER

FIVE

80 STATUS

5.1 Status (GVL)

Scope	Name	Type
Constant	StatusPowerMeasurement	ARRAY [0..52] OF WagoTypesErrorBase.typResultItem

Description: Status information

Value	Level	Description
eStatus.Idle	WagoTypesErrorBase.WagoTypes.eSeverity.info	'OK'
eStatus.InvalidMeasuredID	WagoTypesErrorBase.WagoTypes.eSeverity.error	'InvalidMeasuredID'
eStatus.Timeout	WagoTypesErrorBase.WagoTypes.eSeverity.error	'Timeout'
eStatus.FunctionBlockNotEnabled	WagoTypesErrorBase.WagoTypes.eSeverity.info	'FunctionBlockNotEnable
eStatus.ErrorReadingSettings	WagoTypesErrorBase.WagoTypes.eSeverity.error	'ErrorReadingSettings'
eStatus.ErrorWritingSettings	WagoTypesErrorBase.WagoTypes.eSeverity.error	'ErrorWritingSettings'
eStatus.ErrorExecutingCommand	WagoTypesErrorBase.WagoTypes.eSeverity.error	'ErrorExecutingCommand
eStatus.PresetValueInvalid	WagoTypesErrorBase.WagoTypes.eSeverity.error	'PresetValueInvalid'
eStatus.WrongTerminal	WagoTypesErrorBase.WagoTypes.eSeverity.error	'WrongTerminal'
eStatus.UndervoltageThreshold	WagoTypesErrorBase.WagoTypes.eSeverity.error	'UndervoltageThreshold'
eStatus.SettingsActive	WagoTypesErrorBase.WagoTypes.eSeverity.info	'SettingsActive'
eStatus.ReadingConfiguration	WagoTypesErrorBase.WagoTypes.eSeverity.info	'ReadingConfiguration'
eStatus.WritingConfiguration	WagoTypesErrorBase.WagoTypes.eSeverity.info	'WritingConfiguration'
eStatus.ReadingModuleStatus	WagoTypesErrorBase.WagoTypes.eSeverity.info	'ReadingModuleStatus'
eStatus.ExecutingCommand	WagoTypesErrorBase.WagoTypes.eSeverity.info	'ExecutingCommand'
eStatus.ReadingProcessValues	WagoTypesErrorBase.WagoTypes.eSeverity.info	'ReadingProcessValues'
eStatus.OverflowValue_1	WagoTypesErrorBase.WagoTypes.eSeverity.error	'OverflowValue_1'
eStatus.OverflowValue_2	WagoTypesErrorBase.WagoTypes.eSeverity.error	'OverflowValue_2'
eStatus.OverflowValue_1_2	WagoTypesErrorBase.WagoTypes.eSeverity.error	'OverflowValue_1_2'
eStatus.OverflowValue_3	WagoTypesErrorBase.WagoTypes.eSeverity.error	'OverflowValue_3'
eStatus.OverflowValue_1_3	WagoTypesErrorBase.WagoTypes.eSeverity.error	'OverflowValue_1_3'
eStatus.OverflowValue_2_3	WagoTypesErrorBase.WagoTypes.eSeverity.error	'OverflowValue_2_3'
eStatus.OverflowValue_1_2_3	WagoTypesErrorBase.WagoTypes.eSeverity.error	'OverflowValue_1_2_3'
eStatus.OverflowValue_4	WagoTypesErrorBase.WagoTypes.eSeverity.error	'OverflowValue_4'
eStatus.OverflowValue_1_4	WagoTypesErrorBase.WagoTypes.eSeverity.error	'OverflowValue_1_4'
eStatus.OverflowValue_2_4	WagoTypesErrorBase.WagoTypes.eSeverity.error	'OverflowValue_2_4'
eStatus.OverflowValue_1_2_4	WagoTypesErrorBase.WagoTypes.eSeverity.error	'OverflowValue_1_2_4'
eStatus.OverflowValue_3_4	WagoTypesErrorBase.WagoTypes.eSeverity.error	'OverflowValue_3_4'
eStatus.OverflowValue_1_3_4	WagoTypesErrorBase.WagoTypes.eSeverity.error	'OverflowValue_1_3_4'

continues on

Table 1 – continued from previous page

Value	Level	Description
eStatus.OverflowValue_2_3_4	WagoTypesErrorBase.WagoTypes.eSeverity.error	'OverflowValue_2_3_4'
eStatus.OverflowValue_1_2_3_4	WagoTypesErrorBase.WagoTypes.eSeverity.error	'OverflowValue_1_2_3_4'
eStatus.UndefinedInterface	WagoTypesErrorBase.WagoTypes.eSeverity.error	'UndefinedInterface'
eStatus.InvalidScalingFactor	WagoTypesErrorBase.WagoTypes.eSeverity.error	'InvalidScalingFactor'
eStatus.InvalidCycleTime	WagoTypesErrorBase.WagoTypes.eSeverity.error	'InvalidCycleTime'
eStatus.InvalidPhasePeakSelect	WagoTypesErrorBase.WagoTypes.eSeverity.error	'InvalidPhasePeakSelect'
eStatus.InvalidIntervalEnergyStorage	WagoTypesErrorBase.WagoTypes.eSeverity.error	'InvalidIntervalEnergySto
eStatus.InvalidScalingFactor	WagoTypesErrorBase.WagoTypes.eSeverity.error	'InvalidScalingFactor'
eStatus.InvalidNoLoadApparentPower	WagoTypesErrorBase.WagoTypes.eSeverity.error	'InvalidNoLoadApparentP
eStatus.InvalidNoLoadEffectivePower	WagoTypesErrorBase.WagoTypes.eSeverity.error	'InvalidNoLoadEffectiveP
eStatus.InvalidNoLoadReactivePower	WagoTypesErrorBase.WagoTypes.eSeverity.error	'InvalidNoLoadReactiveP
eStatus.InvalidRogowskiType	WagoTypesErrorBase.WagoTypes.eSeverity.error	'InvalidRogowskiType'
eStatus.InvalidTamperDetectionThreshold	WagoTypesErrorBase.WagoTypes.eSeverity.error	'InvalidTamperDetectionT
eStatus.InvalidMinMaxValueIndex	WagoTypesErrorBase.WagoTypes.eSeverity.error	'InvalidMinMaxValueInde
eStatus.InvalidIntervalMinMaxReset	WagoTypesErrorBase.WagoTypes.eSeverity.error	'InvalidIntervalMinMaxRe
eStatus.InvalidIntervalForAverageCalcIndex	WagoTypesErrorBase.WagoTypes.eSeverity.error	'InvalidIntervalForAverage
eStatus.InvalidIntervalForPeakValue	WagoTypesErrorBase.WagoTypes.eSeverity.error	'InvalidIntervalForPeakVa
eStatus.InvalidCurrentTransformerRatio	WagoTypesErrorBase.WagoTypes.eSeverity.error	'InvalidCurrentTransforme
eStatus.InvalidCurrentTransformerRatioN	WagoTypesErrorBase.WagoTypes.eSeverity.error	'InvalidCurrentTransforme
eStatus.FaultyCurrentTransformerRatio	WagoTypesErrorBase.WagoTypes.eSeverity.warning	'CurrentTransformerRatio'
eStatus.GeneralFeedback	WagoTypesErrorBase.WagoTypes.eSeverity.error	'Details output aFeedback'
eStatus.NoVoltageForPhasePeakL2	WagoTypesErrorBase.WagoTypes.eSeverity.warning	'Voltage not available with
eStatus.InvalidDeviceID	WagoTypesErrorBase.WagoTypes.eSeverity.error	'Invalid device ID'
eStatus.ComPortNotOpen	WagoTypesErrorBase.WagoTypes.eSeverity.error	'Com port not open'

5.2 eStatus (ENUM)

InOut:

Name	Initial	Comment
Idle	0	Idle
InvalidMeasuredID	1	Invalid measured ID
Timeout	2	Timeout
FunctionBlockNotEnabled	3	Function Block not enabled
ErrorReadingSettings	4	Error Reading Settings
ErrorWritingSettings	5	Error Writing Settings
ErrorExecutingCommand	6	Error executing command
PresetValueInvalid	7	Preset value invalid
SettingsActive	8	Settings active
WrongTerminal	9	Wrong terminal
UndervoltageThreshold	10	Undervoltage threshold
ReadingConfiguration	11	Reading configuration
WritingConfiguration	12	Writing configuration
ReadingModuleStatus	13	Reading module status
ExecutingCommand	14	Execute a special command
ReadingProcessValues	15	Reading process values
OverflowValue_1	16	Overflow Value 1

continues on next page

Table 2 – continued from previous page

Name	Initial	Comment
OverflowValue_2	32	Overflow Value 2
OverflowValue_1_2	48	Overflow Value 1 and Overflow Value 2
OverflowValue_3	64	Overflow Value 3
OverflowValue_1_3	80	Overflow Value 1 + Overflow Value 3
OverflowValue_2_3	96	Overflow Value 2 + Overflow Value 3
OverflowValue_1_2_3	112	Overflow Value 1 + Overflow Value 2 + Overflow Value 3
OverflowValue_4	128	Overflow Value 4
OverflowValue_1_4	144	Overflow Value 1 + Overflow Value 4
OverflowValue_2_4	160	Overflow Value 2 + Overflow Value 4
OverflowValue_1_2_4	176	Overflow Value 1 + Overflow Value 2 + Overflow Value 4
OverflowValue_3_4	192	Overflow Value 3 + Overflow Value 4
OverflowValue_1_3_4	208	Overflow Value 1 + Overflow Value 3 + Overflow Value 4
OverflowValue_2_3_4	224	Overflow Value 2 + Overflow Value 3 + Overflow Value 4
OverflowValue_1_2_3_4	240	Overflow Value 1 + Overflow Value 2 + Overflow Value 3 + Overflow Value 4
UndefinedInterface	241	Undefined Interface
InvalidScalingFactor	242	Invalid Scaling Factor
InvalidCycleTime	243	Invalid Cycle Time
InvalidPhasePeakSelect	244	Invalid Phase Peak Select
InvalidIntervalEnergyStorage	245	Invalid Interval Energy Storage
InvalidScalingFactorIndex	246	Invalid Scaling Factor Index
InvalidNoLoadApparentPower	247	Invalid No Load Apparent Power
InvalidNoLoadEffectivePower	248	Invalid No Load Effective Power
InvalidNoLoadReactivePower	249	Invalid No Load Reactive Power
InvalidRogowskiType	250	Invalid Rogowski Type
InvalidTamperDetectionThreshold	251	Invalid Tamper Detection Threshold
InvalidMinMaxValueIndex	252	Invalid Min Max Value Index
InvalidIntervalMinMaxReset	253	Invalid Interval Min Max Reset
InvalidIntervalForAverageCalcIndex	254	Invalid Interval for Average Calc Index
InvalidIntervalForPeakValue	255	Invalid Interval for Peak Value
InvalidCurrentTransformerRatio	256	Invalid Current Transformer Ratio
InvalidCurrentTransformerRatioN	257	Invalid Current Transformer Ratio N
InvalidEnergyMeterIndex	258	Invalid Energy Meter Index
FaultyCurrentTransformerRatio	259	Faulty Current Transformer Ratio
GeneralFeedback	260	Function block FbAC_Compact error details in output aFeedback available
NoVoltageForPhasePeakL2	261	Voltage not available for L2 as peak phase
InvalidDeviceID	262	Invalid device ID
ComPortNotOpen	263	COM port not open

Description: Status information

CHAPTER

SIX

90 INTERNAL

6.1 879_3000_MID

6.1.1 TextList_MID_Baudrate (Text List)

ID	Default	en
1	BAUD_300	BAUD_300
2	BAUD_600	BAUD_600
3	BAUD_1200	BAUD_1200
5	BAUD_4800	BAUD_4800
6	BAUD_9600	BAUD_9600
7	BAUD_19200	BAUD_19200
4	BAUD_2400	BAUD_2400
8	BAUD_38400	BAUD_38400
9	BAUD_57600	BAUD_57600
10	BAUD_115200	BAUD_115200

6.1.2 TextList_MID_Parity (Text List)

ID	Default	en	de	fr
1	Even	Even	Gerade	Paire
0	None	None	Keine	Aucune
2	Odd	Odd	Ungerade	Impaire

6.1.3 tl_MID_Feedback (Text List)

ID	Default	fr
0	Ready	Prêt
1	Reading settings	Lecture des paramètres
2	Writing settings	Ecriture des paramètres
3	Error while reading settings	Erreur lors de la lecture des paramètres
4	Error while writing settings	Erreur lors de l'écriture des paramètres
5	Executing command	Commande en cours d'exécution
6	Error while executing command	Erreur lors de l'exécution de la commande
7	Error command value	Code erreur de la commande
8	Error timeout	Erreur timeout
9	Error communication base	Erreur de communication de base
10	Setup communication	Configuration de la communication

6.1.4 tl_MID_S0outputRate (Text List)

6.2 GlobalTextList (Text List)

ID	Default	de	en	pl	fr	br
483	%.1f kVAh					
839	%.1f kvarh					
2863	``%.1f kvarh ``					
94	%.1f kWh					
3069	``%.1f kWh ``					
7160	%.2f Hz					
1556	%.3f kVA					
240	``%.3f kVA ``					
341	%.3f kvar					
445	``%.3f kvar ``					
1579	%.3f kvarh					
789	%.3f kW					
286	``%.3f kW ``					
834	%.3f kWh					
2862	%3.3f					
1636	1: active & reactive 2: forward & reverse					
1679	Address				Adresse	
1806	Average value	Mittelwert			Valeur moyenne	
3068	Baudrate				Vitesse de transmission	
227	Configuration				Configuration	
307	Configuration 0879-3xxx 3-Phase MID Energy Counter				Configuration du compteur d'énergie MID 3 phases 0879-3xxx	
1770	Counter				Compteur	
2082	CT primary				TI primaire	
1602	CT secondary				TI secondaire	

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Table 1 – continued from previous page

ID	Default	de	en	pl	fr	br
1511	Day counter [kWh]				Compteur journalier [kWh]	
1323	Forward effective energy	Lieferung Wirkenergie			Energie efficace en aval	
992	Forward reactive energy	Lieferung Blindenergie			Energie réactive en aval	
276	Grid frequency	Netzfrequenz			Fréquence du réseau	
2140	Maximum					
686	Minimum					
772	Modbus					
2701	No, cancel				Annuler	
469	Parity				Parité	
1184	Power down counter	Netzausfall Zähler			Compteur de mise hors tension	
2904	Reset					
1604	Resolution 0.1 V (0.1 V bis 6553.5 V)	Auflösung 0.1 V (0.1 V .. 6553.5 V)	Resolution 0.1 V (0.1 V bis 6553.5 V)		Résolution 0.1 V (0.1 V ..6553.5 V)	Resolucao 0.1 V (0.1 V at, 6553.5 V)
1612	Resolution 1 V (1 V bis 65535 V)	Auflösung 1 V (1 V .. 65535 V)	Resolution 1 V (1 V bis 65535 V)		Résolution 1 V (1 V ..65535 V)	Resolucao 1 V (1 V at, 65535 V)
1407	Reverse effective energy	Bezug Wirkenergie			Energie efficace inversée	
1411	Reverse reactive energy	Bezug Blindenergie			Energie réactive inversée	
17	Rotation	Drehfeld	Rotation		Rotation	Rotacao
1	`` Phase L1``	Phase L1	Phase L1		Phase L1	Fase L1
0	`` Phase L1-L3``	Phase L1-L3	Phase L1-L3		Phase L1-L3	Fase L1-L3
12	`` Phase L2``	Phase L2	Phase L2		Phase L2	Fase L2
16	`` Phase L3``	Phase L3	Phase L3		Phase L3	Fase L3
2651	`` Average value``	Mittelwert			Valeur moyenne	
1638	`` Rotating Field``	Drehfeld	Rotating Field		Champ tournant	Rotacao Fases
2632	`` Maximum``					
2612	`` Minimum``					
1646	`` Current L1``	Strom L1	Current L1		Courant L1	Corrente L1
2661	`` Current L2``	Strom L2	Current L2		Courant L2	Corrente L2

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Table 1 – continued from previous page

ID	Default	de	en	pl	fr	br
914	`` Current L3``	Strom L3	Current L3		Courant L3	Corrente L3
1957	`` Frequency``	Frequenz	Frequency		Fréquence	Frequencia
132	`` Mode of operation``	Modus	Mode		Mode	Modo
2622	`` Overcurrent``	Ueberstrom	Overcurrent		Surintensité	Sobrecorrente
1614	`` Peak values Lx``	Spitzenwerte Lx	Peak values Lx		Valeurs maximales Lx	Valores de Pico Lx
133	`` Register values L1``	Register Werte L1	Register values L1		Valeurs du registre L1	Valores de Registro L1
134	`` Register values L2``	Register Werte L2	Register values L2		Valeurs du registre L2	Valores de Registro L2
135	`` Register values L3``	Register Werte L3	Register values L3		Valeurs du registre L3	Valores de Registro L3
2642	`` RMS value``	Mittelwert	RMS value		Valeur efficace	Valores RMS
137	`` Sampling time``	Abtastrate	Sampling time		Temps d'échantillonnage	Amostra de Tempo
138	`` Status Configuration``	Status Konfiguration	Status configuration		Statut de configuration	Status de configuracao
2035	`` Voltage``	Spannung			Tension	
121	!					
139	%					
2708	%.1f					
152	%.1f VAh					
151	%.1f varh					
2079	``%.1f varh ``					
150	%.1f Wh					
2052	``%.1f Wh ``					
146	%.2f					
1620	``%.2f A ``					
142	%.2f V					
1202	``%.2f V ``					
145	%.2f VA					
13	``%.2f VA ``					
144	%.2f var					
6	``%.2f var ``					
143	%.2f W					
4	``%.2f W ``					
148	%.3f					
57	%.3f A					
376	``%.3f A ``					
147	%.3f Hz					
1718	``%.3f HZ ``					
1732	``%.3f Hz ``					
1146	%0.2f nH					
1136	%0.2f Ohm					

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Table 1 – continued from previous page

ID	Default	de	en	pl	fr	br
1765	%0.2f µH					
164	%3.0f					
189	%4.1f A					
158	%4.4f Wh/LSB					
60	%d					
173	%d half waves	%d Halbwellen	%d half waves		%d demi-onde	%d meia-onda
205	``%d``					
49	%d half waves	%d Halbwellen	%d half waves		%d demi-onde	%d meia-onda
114	%d * 0,1V					
116	%d ms					
191	%d mV					
149	%d s					
96	%s					
64	%s Wh					
2413	%s Wh/ varh/VAh					
74	%u					
1637	* %s V					
1645	/					
209	0 bis 24000					
66	0..24000					
153	0:RT500 1:RT2000 2:RC70 3:RC125 4:RC175					
90	50					
211	6 .. 254					
210	6 bis 254					
68	6..254					
91	60					
51	60..255					
105	Cancle	Abbrechen	Cancle		Annuler	Cancela
472	Active Energy	Wirkenergie	Active Energy		Energie active	Energia Ativa
467	Active Power	Wirkleistung	Active Power		Puissance active	Potencia Ativa
104	Activate	Aktivieren	Activate		Activer	Ativar
122	All configuration parameters will be set to factory default	Alles Konfigurationsparameter	All configuration parameter		Tous les paramètres seront remis en configuration usine	Todos os parametros de configuracao
129	All min. max. values	Alle Min/Max. Werte	All min/max values		Toutes les valeurs min/max	Todos valores min/max

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Table 1 – continued from previous page

ID	Default	de	en	pl	fr	br
100	Delete all min/max values	Alle Min/Max. Werte löschen	Delete all min/max values		Supprimer tous les min/max	Deleta todos valores min/max
838	Delete all	Alle löschen	Delete all		Tout supprimer	Deleta tudo
581	S0 output rate [imp/kWh]	S0 Ausgang [imp/kWh]			Ratio sortie impulsion S0 [imp/kWh]	
1877	S0 pulse type				Type de pulsation de S0	
882	S0 pulse width [ms]				Largeur d'impulsion de S0 [ms]	
1205	Save all	Alle speichern	Save all		Tout sauvegarder	Salva tudo
78	Customer scaling	Anwenderskalierung	Customer scaling		Echelle utilisateur	Escala do usuario
177	Apparent Power	Scheinleistung	Apparent power		Puissance apparente	Potencia aparente
113	Automatic deleting of min.- and max. values	Automatische Löschung der Min/Max-Werte	Automatic deleting of min/max values		Suppression Auto min/max	Deleta automatico valores min/max
70	Automatically reset	Automatisches Rücksetzen	Automatically reset		Reset auto	Reset Automatico
208	Average Calculation Interval	Mittelwertberechnung [s]	Calculation of average value [s]		Calcul de la valeur moyenne [s]	Calculo de valores medios [s]
67	Mode	Betriebsart	Mode		Mode	Modo
10	Reactive energy	Blindenergie	Reactive energy		Energie réactive	Energia reativa
5	Reactive power	Blindleistung	Reactive power		Puissance réactive	Potencia reativa
2345	Reactive power [*0.001%]	Blindleistung [*0.001%]			Puissance réactive [*0.001%]	
154	Reactive power [var]	Blindleistung [var]	Reactive power [var]		Puissance réactive [var]	Potencia reativa [var]
199	Cancel	Abbruch	Cancel		Annuler	Cancela
136	Configuration 3-Phase Power Measurement Module 750-493	Konfiguration 3-Phasen Leistungsmessklemme 750-493	Configuration 3-Phase Power Measurement Module 750-494		Configuration du module de mesure de puissance 750-493	Configuracao Modulo 3-Fases Modulo Medicao de

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Table 1 – continued from previous page

ID	Default	de	en	pl	fr	br
118	Configuration 750-493	Konfiguration 750-493	Configuration 750-493		Configuration 750-493	Configuracao 750-493
155	Configuration 750-494/000-005 - 3-Phase Power Measurement Module Shunt	Konfiguration 750-494/000-005 Shunt Modul	Configuration 750-494/000-005 Shunt Module		Configuration 750-494/000-005 (shunt)	Configuracao 750-494/000-005 Modulo Shunt
25	cos phi	cos phi	cos phi		Cos phi	Cos phi
190	Current	Strom	Current		Courant	Corrente
1626	Current L%s	Strom L%s	Current L%s		Courant L%s	Corrente L%s
123	DC filter is bypassed	DC Filter ist gebrückt	DC filter is pybassed		Filtre DC désactivé	Filtro DC inibido
880	Enable DC measurement	DC-Messung aktivieren	Enable DC measurement		Activer la mesure DC	Habilita medicao DC
124	Delete	Löschen	Delete		Supprimer	Deleta
196	Delete All	Alles löschen	Delete all		Tout supprimer	Deleta tudo
187	Delete All Min/Max Values	Alle Min/Max Werte löschen	Delete all Min/Max values		Supprimer toutes les valeurs	Deleta todos valores Min/Max
165	Delete Automatically	Automatisch löschen	Delete automatically		Supprimer auto.	Deleta automatico
131	Delete measured values	Messwerte löschen	Delete measured values		Supprimer les valeurs mesurées	Deleta valores medidos
186	Delete Min/Max Values	Min/Max Werte löschen	Delete Min/Max values		Supprimer les valeurs	Deleta valores Min/Max
175	Effective Power	Wirkleistung	Effective power		Puissance active	Potencia Ativa
160	Enable DC Measurement	DC Messung freigeben	Enable DC measurement		Activer la mesure DC	Habilita medicao DC
182	Enable Watchdog	Watchdog aktivieren	Enable watchdog		Activer surveillance	Habilita watchdog
62	Power meter	Energiezähler	Power meter		Puissance	Medidor potencia
1281	Set energy counter ?	Energiezähler setzen?	Set energy counter ?		Régler le compteur d'énergie ?	Grava contador energia ?
108	Reset energy counter ?	Energiezähler zurücksetzen?	Reset energy counter ?		Reset du compteur d'énergie ?	Reseta contador energia ?

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Table 1 – continued from previous page

ID	Default	de	en	pl	fr	br
130	Energy consumption	Energiezähler	Energy consumption		Consommation d'énergie	Consumo de energia
188	Energy Consumption	Energiezähler	Energy consumption		Consommation d'énergie	Consumo de energia
112	Energy consumption measurement inverted	Energieverbrauchsmessung invertiert	Energy consumption measurement inverted		Mesure de la consommation d'énergie inversée	Medicao do consumo de energia invertido
157	Energy Logging Interval	Intervall Datenerfassung	Energy logging interval		Sauvegarde	Intervalo gravacao energia
156	Energy Meter	Energiezähler	Energy meter		Puissance	Medicao energia
876	Additional settings	Erweiterte Einstellungen	Additional settings		Paramètres additionnels	Configuracoes adicionais
174	Factor No-Load Condition	Schwellwerte Energiemessung	Factor No-Load condition		Facteur sans charge	Fator de sem carga
119	Factory settings	Werkseinstellungen	Factory settings		Paramètres usine	Padrao de fabrica
185	Factory Settings	Werkseinstellung	Factory settings		Paramètres usine	Padrao de fabrica
56	Fault current detection	Fehlerstromerkennung	Fault current detection		Détection erreur courant	Deteccao de erro de corrente
1965	Frequency L1	Frequenz L1			Fréquence L1	
1972	Frequency L1 max	Frequenz L1 max			Fréquence max L1	
1980	Frequency L1 min	Frequenz L1 min			Fréquence min L1	
1988	Frequency L2	Frequenz L2			Fréquence L2	
1996	Frequency L2 max	Frequenz L2 max			Fréquence max L2	
2003	Frequency L2 min	Frequenz L2 min			Fréquence min L2	
2019	Frequency L3	Frequenz L3			Fréquence L3	
2011	Frequency L3 max	Frequenz L3 max			Fréquence max L3	
2027	Frequency L3 min	Frequenz L3 min			Fréquence min L3	
26	Frequency	Frequenz	Frequency		Fréquence	Frequencia
688	Function block not enabled	Baustein nicht freigegeben	Function block not enabled		Bloc fonctionnel non activé	Bloco de funcao nao habilitado

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ID	Default	de	en	pl	fr	br
1141	Mutual inductance	Gegeninduktivität	Mutual inductance		Inductance mutuelle	Indutancia mutua
194	General	Allgemein	General		Général	Geral
46	Green ->OK Red ->Error	Grün->OK	Green ->OK		Vert -> OK Rouge->Erreur	Verde ->OK
92	Hz					
41	I					
38	II					
40	III					
1131	Internal resistance	Innenwiderstand	Internal resistance		Résistance interne	Resistencia interna
1007	Input in [0.001 %] e.g. 4400 ->4.4%	Eingang in [0.001 %]			Entrée en [0.001%] Ex : 4400 -> 4.4%	
39	IV					
32	None zero	Kein Null	None zero		Non nul	Nao zero
140	Configuration 2857-0570 3-Phase Power Transducer	Konfiguration 2857-0570 3-Phasen Power Transducer	Configuration 2857-0570 3-Phase Power Transducer		Configuration 2857-0570 3-Phase Power Transducer	Configuracao 2857-0570 3-Fases Transdutor de Energia
61	Configuration 750-494 - 3-Phase Power Measurement Module	Konfiguration 750-494 - 3 Phasen Leistungsmessklemme	Configuration 750-494 - 3-Phase Power Measurement Module		Configuration 750-494 - Module de mesure de puissance 3 phases	Configuracao 750-494 - 3-Fases Modulo Medicao de Energia
557	Configuration 750-494 - 3-Phase Power Measurement Module Shunt	Konfiguration 750-495 - 3 Phasen Leistungsmessklemme Shunt	Configuration 750-494 - 3-Phase Power Measurement Module Shunt		Configuration 750-494 - Module de mesure de puissance 3 phases shunt	Configuracao 750-494 - 3-Fases Modulo Medicao de Energia Shunt
50	Configuration 750-495 - 3-Phase Power Measurement Module	Konfiguration 750-495 - 3 Phasen Leistungsmessklemme	Configuration 750-495 - 3-Phase Power Measurement Module		Configuration 750-495 - Module de mesure de puissance 3 phases	Configuracao 750-495 - 3-Fases Modulo Medicao de Energia
2316	Configuration 750-495/040-010 - 3-Phase Power Measurement Module	Konfiguration 750-495/040-010 - 3-Phasen Leistungsmessklemme			Configuration 750-495/040-010 - Module de mesure de puissance 3 phases	
19	L					
79	L%d					
86	L1					

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ID	Default	de	en	pl	fr	br
1207	L1-L2					
34	L1:					
87	L2					
1213	L2-L3					
35	L2:					
88	L3					
2284	L3-L1					
36	L3:					
8	Efficiency factor PF	Leistungsfaktor PF	Efficiency factor PF		Facteur d'efficacité	Fator de eficiencia PF
125	Maximum current	Maximaler Strom	Maximum current		Courant max	Corrente Maxima
127	Maximum voltage	Maximale Spannung	Maximum voltage		Tension max	Tensao Maxima
117	Measuring cycle period:	Messintervall:	Measuring cycle period:		Période de mesure de cycle	Periodo do ciclo de medicao:
531	Nettopology	Messtopologie	Nettopology		Topologie réseau	Topologia de rede
198	Min/Max Value	Min/Max Wert	Min/Max value		Valeur min/max	Valor Min/Max
179	Min/Max Values	Min/Max Werte	Min/Max values		Valeurs min/max	Valores Min/Max
82	Min/Max values	Min/Max Werte	Min/Max values		Valeurs min/max	Valores Min/Max
98	Delete min/max values	MIn/Max Werte löschen	Delete min/max values		Supprimer min/max	Deleta valores min/max
126	Minimum current	Minimaler Strom	Minimum current		Courant min	Corrente minima
128	Minimum voltage	Minimale Spannung	Minimum voltage		Tension min	Tensao minima
75	Calculation of average value [s]	Mittelwertberechnung [s]	Calculation of average value [s]		Calcul de la valeur moyenne [s]	**Calculo do valor medio** [s]
59	Mode of operation	Betriebsart	Mode of operation		Mode	Modo de operacao
178	Monitoring Intervals	Überwachungsintervall	Monitoring interval		Intervalle de suivi	Intervalo de monitoracao
53	N					
1661	Nominal voltage	Nennspannung	Nominal voltage		Tension nominal	Tensao nominal
1653	Nominal current	Nennstrom	Nominal current		Courant nominal	Corrente nominal
120	Status				Etat	
1344	Status code				Code d'état	
89	Supply frequency	Netzfrequenz	Supply frequency		Fréquence réseau	Frequencia de rede
1941	NoZero				NonZéro	
106	OK					

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Table 1 – continued from previous page

ID	Default	de	en	pl	fr	br
161	Operation Mode	Betriebsart	Operation mode		Mode	Modo de operacao
202	Overcurrent [0.1 mA]	Überstrom [0.1 mA]	Overcurrent [0.1 mA]		Surintensité [0.1 mA]	Sobrecorrente [0.1 mA]
203	Overvoltage [0.1 V]	Überspannung [0.1 V]	Overvoltage [0.1 V]		Surtension [0.1 V]	Sobretensao [0.1 V]
44	P+					
43	P-					
172	Peak Value Interval	Spitzenwertmessung	Peak value interval		Période de valeur de crête	Valor de intervalo de pico
85	Phase	Phase	Phase		Phase	Fase
162	Phase for Peak Value	Phase für Spitzenwertmessung	Phase for peak value		Phase pour la valeur de crête	Fase para valor de pico
45	Please enable function block	Funktionsblock freigeben	Please enable function block		Merci d'activer le bloc fonctionnel	Por favor habilite o bloco de funcao
195	Power Meter	Energiezähler	Power meter		Puissance	Medidor Potencia
181	Power Supply Frequency	Netzfrequenz	Power supply frequency		Fréquence réseau	Frequencia de rede
1621	primary	primär	primary		primaire	primario
37	Q+					
42	Q-					
18	R					
474	Reactive Energy	Blindenergie	Reactive energy		Energie réactive	Energia reativa
176	Reactive Power	Blindleistung	Reactive power		Puissance réactive	Potencia reativa
110	Read configuration	Konfiguration lesen	Read configuration		Lire la configuration	Le Configuracao
183	Read Configuration	Konfiguration lesen	Read configuration		Lire la configuration	Le Configuracao
109	Register values	Registerwerte	Register values		Valeurs registre	Grava valores
200	Reset all module parameters to factory defaults?	Alle Werte auf Werkseinstellung ?	Reset all module parameters to factory defaults?		Reset des paramètres ?	Reseta todos os parametros do modulo para padrao?
206	Reset Interval [200 ms]	Rücksetzintervall [200ms]	Reset interval [200 ms]		Période de reset [200 ms]	Intervalo de reset [200 ms]

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ID	Default	de	en	pl	fr	br
201	Reset the energy meter?	Energiemessung zurücksetzen?	Reset the energy meter?		Reset du compteur d'énergie ?	Reseta medidor de energia?
602	Reset-Intervall [* 200 ms]	Rücksetzintervall [200ms]	Reset interval [200 ms]		Période de reset [*200 ms]	Intervalo de reset [200 ms]
1871	Reset-Intervall [s]				Période de reset [s]	
1120	Rogowski coil type	Rogowski Spule Typ	Rogowski coil type		Type de boucle Rogowski	Tipo bobina de Rogowski
197	Save	Sichern	Save		Sauvegarder	Salva
159	Scaling Factor	Skalierungsfaktor	Scaling factor		Facteur de mise à l'échelle	Fator de escala
11	Apparent energy	Scheinenergie	Apparent energy		Energie apparente	Energia Aparente
7	Apparent power	Scheinleistung	Apparent power		Puissance apparente	Potencia aparente
705	Apparent power [*0.001%]	Scheinleistung [*0.001%]			Puissance apparente [*0.001%]	
163	Apparent power [VA]	Scheinleistung [VA]	Apparent power [VA]		Puissance apparente [VA]	Potencia aparente [VA]
1339	Close	Schließen	Close		Fermer	Fecha
2624	Tarife				Tarif	
2760	The connection will be lost afterwards. Write?				La connexion sera perdue par la suite. Ecrire ?	
83	Threshold	Schwellenwerte	Threshold		Seuil	Limite
654	``Threshold fault current detection ``	Schwellwert Fehlerstromerkennung	Threshold fault current detection		Seuil du courant de défaut	Deteccao de limite de falha de corrente
1152	Threshold fault current detection [0.1 mA]	Schwellwert Fehlerstromerkennung [* 0.1 mA]	Threshold fault current detection [0.1 mA]		Seuil du courant de défaut [0.1 mA]	Deteccao de limite de falha de corrente [0.1 mA]
80	Threshold energy measurement	Schwellwert Energiemessung	Threshold energy measurement		Seuil mesure d'énergie	Limite de medicao de energia
1629	secondary	sekundär	secondary		secondaire	Secundario
683	Set	Setzen	Set		Régler	Grava
193	Shunt Resistor(s)	Shunt	Shunt resistor		Résistance de shunt	Resistencia Shunt
1332	Shunt resistor	Shunt Widerstand	Shunt resistor		Résistance de shunt	Resistencia Shunt

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ID	Default	de	en	pl	fr	br
65	Scaling factor for energy measurement	Skalierungsfaktor für Energiemessung	Scaling factor for energy measurement		Ratio pour mesure d'énergie	Fator de escala para medidor de energia
54	Other	Sonstiges	Other		Autre	Outro
722	Total effective energy	Gesamt Wirkenergie			Energie efficace total	
1368	Total reactive energy	Gesamt Blindenergie			Energie réactive total	
22	Voltage L -N	Spannung L - N	Voltage L -N		Tension L-N	Tensao L -N
1596	Voltage transformer	Spannungswandler	Voltage transformer		Transformateur de tension	Transformador de Tensao
63	Saving interval [s]	Speicherintervall [s]	Saving interval [s]		Période de sauvegarde [s]	Intervalo de gravacao [s]
33	Voltage drop	SpgEinbr	Voltage drop		Chute de tension	Queda de tensao
76	Peak value measurement	Spitzenwertmessung	Peak value measurement		Valeur de crête	Medicao de valor de pico
212	Peak value measurement phase	Spitzenwertmessung	Peak value measurement phase		Valeur de crête phase	Medicao de valor de pico da fase
1125	Coil type	Spule Typ	Coil type		Type	Tipo bobina
55	Neutral conducter current	Strom Neutralleiter	Neutral conducter current		Courant dans le neutre	Condutor de corrente de neutro
103	Current transformer ratio	Stromwandlerverhältnis	Current transformer ratio		Ratio TI	Razao de transformacao
180	Thresholds	Schwellwerte	Thresholds		Seuils	Limites
115	``Time for deleting min / max values: ``	Zeit bis zum Löschen der min / max Werte	Time for deleting min/max values		Temps pour suppr. les valeurs min/max :	Tempo para deletar valores min/max
58	Undervoltage threshold:	Unterspannungsschwellwert:	Undervoltage threshold		Seuil tension basse	Limite de Subtensao
204	Undervoltage [0.1 V]	Unterspannung [0.1 V]	Undervoltage [0.1 V]		Sous-tension [0.1V]	Subtensao [0.1 V]
23	Undervoltage	Unterspannung	Undervoltage		Sous-tension	Subtensao
71	Undervoltage [* 0.1 V]	Unterspannung [0.1 V]	Undervoltage [* 0.1 V]		Sous-tension [* 0,1 V]	Subtensao [* 0.1 V]

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Table 1 – continued from previous page

ID	Default	de	en	pl	fr	br
1446	Undervoltage [V]	Unterspannung [V]			Sous-tension[V]	
192	Voltage	Spannung	Voltage		Tension	Tensao
1632	Voltage %s	Spannung	Voltage		Tension %s	Tensao
1949	VoltSag				Tension	
93	Activate watchdog	Watchdog aktivieren	Activate watchdog		Activer Surveillance	Ativar watchdog
107	Restore factory settings?	Werkseinstellung wiederherstellen?	Restore factory settings?		Restaurer les paramètres usine?	Restaurar padrao de fabrica?
9	Effective energy	Wirkenergie	Effective energy		Energie efficace	Energia Efetiva
3	``Effective power ``	Wirkleistung	Effective power		Puissance efficace	Potencia Efetiva
468	Effective power [*0.001%]	Wirkleistung [*0.001%]			Puissance efficace [*0.001%]	
141	Effective power [W]	Wirkleistung [W]	Effective power [W]		Puissance efficace [W]	Potencia Efetiva [W]
111	Write configuration	Konfiguration schreiben	Write configuration		Ecrire la configuration	Grava Configuracao
184	Write Configuration	Konfiguration schreiben	Write configuration		Ecrire la configuration	Grava Configuracao
1982	Write modbus configuration				Ecrire la configuration Modbus	
1560	Yes				Oui	
1868	[*0.1 mA]					
2853	``[1..254] ``					
778	[1..4]					
1448	[2..99] ms					
1784	[A]					
24	Overvoltage	Überspannung	Overvoltage		Surtension	Sobretensao
72	Overvoltage [* 0.1 V]	Überspannung [* 0.1 V]	Overvoltage [* 0.1 V]		Surtension [* 0,1 V]	Sobretensao [* 0.1 V]
377	Overvoltage [V]	Überspannung [V]			Surtension [V]	
21	Overcurrent	Überstrom	Overcurrent		Surintensité	Sobrecorrente
73	Overcurrent [* 0.1 mA]	Überstrom [* 0.1 mA]	Overcurrent [* 0.1 mA]		Surintensité [* 0,1 mA]	Sobrecorrente [* 0.1 mA]
2064	Overcurrent [A]	Überstrom [A]			Surintensité [A]	
81	Monitoring interval	Überwachungsintervall	Monitoring interval		Intervalle de suivi	Intervalo de monitoracao

6.3 TextListMinMax (Text List)

ID	Default	de	en	fr	br
0	Maximum Current	Maximaler Strom	Maximum Current	Courant max	M xima Corrente
1	Maximum Voltage	Maximale Spannung	Maximum Voltage	Tension max	M xima TensÆo
2	Maximum Power	Maximale Leistung	Maximum Power	Puissance max	M xima Potencia
3	Maximum Frequency	Maximale Frequenz	Maximum Frequency	Fréquence max	M xima Frequencia
4	Minimum Current	Minimaler Strom	Minimum Current	Courant min	M¡nima Corrente
5	Minimum Voltage	Minimale Spannung	Minimum Voltage	Tension min	M¡nima TensÆo
6	Minimum Power	Minimale Leistung	Minimum Power	Puissance min	M¡nima Potencia
7	Minimum Frequency	Minimale Frequenz	Minimum Frequency	Fréquence min	M¡nima Frequencia

6.4 TextList_EnergyCounter_1 (Text List)

ID	Default	de	en	fr	br
0	Active Energy Incoming L1	Wirkenergie Bezug L1	Active Energy Incoming L1	Energie active importée L1	Energia Ativa consumida L1
1	Active Energy Delivered L1	Wirkenergie Lieferung L1	Active Energy Delivered L1	Energie active exportée L1	Energia Ativa gerada L1
2	Active Energy Incoming L2	Wirkenergie Bezug L2	Active Energy Incoming L2	Energie active importée L2	Energia Ativa consumida L2
3	Active Energy Delivered L2	Wirkenergie Lieferung L2	Active Energy Delivered L2	Energie active exportée L2	Energia Ativa gerada L2
4	Active Energy Incoming L3	Wirkenergie Bezug L3	Active Energy Incoming L3	Energie active importée L3	Energia Ativa consumida L3
5	Active Energy Delivered L3	Wirkenergie Lieferung L3	Active Energy Delivered L3	Energie active exportée L3	Energia Ativa gerada L3
6	Reactive Energy Inductive L1	Blindenergie Induktiv L1	Reactive Energy Inductive L1	Energie réactive inductive L1	Energia Reativa Indutiva L1
7	Reactive Energy Capacitive L1	Blindenergie Kapazitiv L1	Reactive Energy Capacitive L1	Energie réactive capacitive L1	Energia Reativa Capacitiva L1
8	Reactive Energy Inductive L2	Blindenergie Induktiv L2	Reactive Energy Inductive L2	Energie réactive inductive L2	Energia Reativa Indutiva L2
9	Reactive Energy Capacitive L2	Blindenergie Kapazitiv L2	Reactive Energy Capacitive L2	Energie réactive capacitive L2	Energia Reativa Capacitiva L2
10	Reactive Energy Inductive L3	Blindenergie Induktiv L3	Reactive Energy Inductive L3	Energie réactive inductive L3	Energia Reativa Indutiva L3
11	Reactive Energy Capacitive L3	Blindenergie Kapazitiv L3	Reactive Energy Capacitive L3	Energie réactive capacitive L3	Energia Reativa Capacitiva L3
12	Apparent Energy L1	Scheinenergie L1	Apparent Energy L1	Energie apparente L1	Energia Aparente L1
13	Apparent Energy L2	Scheinenergie L2	Apparent Energy L2	Energie apparente L2	Energia Aparente L2
14	Apparent Energy L3	Scheinenergie L3	Apparent Energy L3	Energie apparente L3	Energia Aparente L3

6.5 TextList_EnergyCounter_2 (Text List)

ID	Default	de	en	fr	br
0	Active Energy Total	Wirkenergie Gesamt	Active Energy Total	Energie active totale	Energia Ativa Total
1	Reactive Energy Total	Blindenergie Gesamt	Reactive Energy Total	Energie réactive totale	Energia Reativa Total
2	Apparent Energy Total	Scheinenergie Gesamt	Apparent Energy Total	Energie apparente totale	Energia Aparente Total
13	None	Reserve	None	None	None
12	None	Reserve	None	None	None
11	None	Reserve	None	None	None
10	None	Reserve	None	None	None
9	None	Reserve	None	None	None
8	None	Reserve	None	None	None
7	None	Reserve	None	None	None
6	None	Reserve	None	None	None
5	None	Reserve	None	None	None
4	None	Reserve	None	None	None
3	None	Reserve	None	None	None
14	None	Reserve	None	None	None

6.6 TextList_Messtopology (Text List)

ID	Default	de	en	fr	br
0	4-wire wye	4-Leiter Stern	4-wire wye	4 fils en étoile	4-fios estrela
1	3-wire wye/ delta	3-Leiter Stern/Dreieck	3-wire wye/delta	3 fils étoile/triangle	3-fios estrela/triangulo
2	4-wire wye, 2-phase	4-Leiter Stern, 2-Phasen	4-wire wye, 2-phase	4 fils en étoile, 2 phases	4-fios estrela , 2-fase
3	Artificial star point	Künstlicher Sternpunkt	Artificial star point	Point de neutre artificiel	Ponto neutro da estrela artificial

6.7 TextList_RogowskiType (Text List)

ID	Default	de	en	fr	br
0	RT 500	RT 500	RT 500	RT 500	RT 500
1	RT 2000	RT 2000	RT 2000	RT 2000	RT 2000
2	RC 70	RC 70	RC 70	RC 70	RC 70
3	RC 125	RC 125	RC 125	RC 125	RC125
4	RC 175	RC 175	RC 175	RC 175	RC 175
5	user defined	Anwenderdefiniert	user defined	Défini par l'utilisateur	Definido pelo usuario

CHAPTER

SEVEN

PARAMETERLIST (PARAMS)

InOut:

Scope	Name	Type	Initial	Comment
Constant	TIMEOUT_POWER_MEASUREMENT_493	TIME	TIME#1s200ms	Module 75x_493 ->timeout reading or writing configuration values
	CURRENT_THRESHOLD_493	DWORD	0	Module 75x_493 ->Current values below this threshold will be set to zero
	RESPONSE_TIMEOUT	TIME	TIME#3s0ms	Module 75x_494 and 75x_495 ->timeout reading or writing configuration values
	USE_FBAC_COMPACT_494_STANDALONE	BOOL	FALSE	Must be set to True if FbConfigurationAndStatus_494 is not used
	USE_FBAC_COMPACT_495_STANDALONE	BOOL	FALSE	Must be set to True if FbConfigurationAndStatus_495 is not used
	TIMEOUT_3PPT_COM	TIME	TIME#200ms	Used by 3PPT function blocks, timeout for modbus request
	TIMEOUT_MID_COM	TIME	TIME#5s0ms	Used by MID function blocks, timeout for modbus request
	SHOW_MODBUS_PARAMETER_IN_VISU	BOOL	TRUE	Enables/disables modbus configuration by visualization
	SCIP_WRITING_CT	BOOL	TRUE	The CT value will not be written since this value can only be changed up to 7 times

CHAPTER

EIGHT

VERSIONHISTORY (GVL)

Name	Type
Info	ProjectInfo

WagoAppPowerMeasurement.library

date	version	author	change
25.05.2023	1.7.4.9	u010663	Solve installation problems
23.05.2023	1.7.4.8	u010663	Add french language for MID
28.04.2023	1.7.4.7	u010663	Bugfix FbAC_Compact_MID
30.03.2022	1.7.4.5	u010663	Improvement FbAC_Compact_3PPT_MultiQuery
19.11.2021	1.7.4.4	u010663	Bugfix visu FbAC_Compact_MID
25.10.2021	1.7.4.3	u010663	new FW 3 Modules 3PPT
04.10.2021	1.7.4.2	u010663	Bugfix FbAC_Compact_3PPT_MultiQuery
13.09.2021	1.7.4.1	u010663	Add FbConfiguration_MID
19.01.2021	1.7.4.0	u010663	Add FbAC_Compact_MID
02.12.2020	1.7.3.4	u010663	Bugfix FbConfigurationAndStatus_495_040_010
26.08.2020	1.7.3.3	u010663	Bugfix FbAC_General_3PPT, FbAC_General_3PPT_MultiQuery
28.05.2020	1.7.3.2	u010663	Bugfix visu tplConfiguration_3PPT
13.05.2020	1.7.3.1	u010663	Add 3PPT_MultiQuery function blocks, new Parameter TIMEOUT_3PPT_COM
31.10.2019	1.7.2.2	u010663	Bugfix 750-493
29.10.2019	1.7.2.1	u010663	Textlist improved
02.10.2019	1.7.2.0	u010663	New module 750-495/040-010 supported
27.05.2019	1.7.1.3	u010663	Wording improved, improvement tplConfiguration_3PPT
02.04.2019	1.7.1.2	u010663	Brasilian language added
08.01.2019	1.7.1.1	u010663	3-phase power transducer(3PPT) new function block
08.01.2019	1.7.1.0	u015842	Properties: free placeholder added
05.10.2018	1.7.0.1	u010663	New devices series 3-phase power transducer(3PPT) integrated
25.09.2018	1.6.5.6	u010663	Bugfix Reset all power meter in case of fieldbus
05.06.2018	1.6.5.5	u010663	Bugfix FbAC_Compact_49x
30.05.2018	1.6.5.4	u010663	Improvements according to 3-Wire Wye/Delta
28.02.2018	1.6.5.0	u010663	Support new FW 06.xx 750-494 and 750-495 additional nets
04.12.2017	1.6.3.5	u010663	FbAC_Values_49x output xError improved
17.10.2017	1.6.3.4	u010663	tplConfig_495 improved
05.10.2017	1.6.3.3	u010663	Bugfix 750-493, 750-495, 750-494 FbAC_Compact_49x, language fr added
21.09.2017	1.6.3.1	u010663	Bugfix 750-493
10.05.2017	1.6.3.0	u010663	Support for new module 750-494/000-005 shunt version
03.02.2017	1.6.2.1	u010663	Docu issues
14.12.2016	1.6.2.0	u010663	Support for new firmware module 750-495/000-002,new Rogowsky coils
08.12.2016	1.6.1.5	u010663	Bugfix 750-495 configuration

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05.12.2016	1.6.1.4	u010663	Bugfix english visu templates
17.08.2016	1.6.1.1	u014791/u010663	Update according to WagoSysModuleBase, Bugfix 750-495 configuration, 750-493
16.06.2015	1.5.0.0	u010663	Released

Release notes

CHAPTER

NINE

LIBRARY REFERENCE

This is a dictionary of all referenced libraries and their name spaces.

Standard
Library Identification:
Placeholder: Standard
Default Resolution: Standard, * (System)
Namespace: Standard

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: False

Util
Library Identification:
Placeholder: Util
Default Resolution: Util, * (System)
Namespace: Util

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: False

Library Parameter:
Parameter: IBLOCKSIZE = 22800

VisuDialogs
Library Identification:
Placeholder: VisuDialogs
Default Resolution: VisuDialogs, * (System)
Namespace: VisuDialogs

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: False

VisuElem3DPath
Library Identification:
Placeholder: System_VisuElem3DPath
Default Resolution: VisuElem3DPath, 4.1.0.0 (System)
Namespace: VisuElem3DPath

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: True

VisuElemCamDisplayer
Library Identification:
Placeholder: System_VisuElemCamDisplayer
Default Resolution: VisuElemCamDisplayer, 4.2.0.0 (System)
Namespace: VisuElemCamDisplayer

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: True

VisuElemMeter
Library Identification:
Placeholder: System_VisuElemMeter
Default Resolution: VisuElemMeter, 4.3.0.0 (System)
Namespace: VisuElemMeter

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: True

VisuElemTextEditor
Library Identification:
Placeholder: System_VisuElemTextEditor
Default Resolution: VisuElemTextEditor, 4.4.0.0 (System)
Namespace: VisuElemTextEditor

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: True

VisuElemTrace
Library Identification:
Placeholder: System_VisuElemTrace
Default Resolution: VisuElemTrace, 4.4.0.0 (System)
Namespace: VisuElemTrace

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: True

VisuElemXYChart
Library Identification:
Placeholder: System_VisuElemXYChart
Default Resolution: VisuElemXYChart, 4.4.0.0 (System)
Namespace: VisuElemXYChart

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: True

VisuElems
Library Identification:
Placeholder: System_VisuElems
Default Resolution: VisuElems, 4.4.0.0 (System)
Namespace: VisuElems

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: True

VisuElemsAlarm
Library Identification:
Placeholder: System_VisuElemsAlarm
Default Resolution: VisuElemsAlarm, 4.4.0.0 (System)
Namespace: VisuElemsAlarm

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: True

VisuElemsDateTime
Library Identification:
Placeholder: System_VisuElemsDateTime
Default Resolution: VisuElemsDateTime, 4.4.0.0 (System)
Namespace: VisuElemsDateTime

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: True

VisuElemsSpecialControls
Library Identification:
Placeholder: System_VisuElemsSpecialControls
Default Resolution: VisuElemsSpecialControls, 4.4.0.0 (System)
Namespace: VisuElemsSpecialControls

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: True

VisuElemsWinControls
Library Identification:
Placeholder: System_VisuElemsWinControls
Default Resolution: VisuElemsWinControls, 4.4.0.0 (System)
Namespace: VisuElemsWinControls

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: True

VisuInputs
Library Identification:
Placeholder: System_VisuInputs
Default Resolution: VisuInputs, 4.2.0.0 (System)
Namespace: VisuInputs

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: True

VisuNativeControl
Library Identification:
Placeholder: System_VisuNativeControl
Default Resolution: VisuNativeControl, 4.4.0.0 (System)
Namespace: VisuNativeControl

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: True

VisuSymbols
Library Identification:
Name: VisuSymbols
Version: 4.4.0.0
Company: System
Namespace: VisuSymbols

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: True
- SystemLibrary: False

WagoAppCom
Library Identification:
Placeholder: WagoAppCom
Default Resolution: WagoAppCom, * (WAGO)
Namespace: WagoAppCom

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: False

Library Parameter:
Parameter: CUIDEFAULTSYSTEMBUFFERSIZE = 1028

WagoAppPlcModbus
Library Identification:
Placeholder: WagoAppPlcModbus
Default Resolution: WagoAppPlcModbus, * (WAGO)
Namespace: WagoAppPlcModbus

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: False

WagoSysErrorBase
Library Identification:
Placeholder: WagoSysErrorBase
Default Resolution: WagoSysErrorBase, * (WAGO)
Namespace: WagoSysErrorBase

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: True
- SystemLibrary: False

Library Parameter:
Parameter: RES_LOG_MAX_ENTRIES = 200
Parameter: RES_LOG_MAX_FILES = 1
Parameter: RES_LOG_MAX_FILESIZE = 2000
Parameter: RES_LOG_NAME = 'WagoAppResultLogger'

WagoSysVersion
Library Identification:
Name: WagoSysVersion
Version: 1.0.0.0
Company: WAGO
Namespace: WagoSysVersion

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: False

WagoTypesCom
Library Identification:
Placeholder: WagoTypesCom
Default Resolution: WagoTypesCom, * (WAGO)
Namespace: WagoTypesCom

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: False

WagoTypesErrorBase
Library Identification:
Placeholder: WagoTypesErrorBase
Default Resolution: WagoTypesErrorBase, * (WAGO)
Namespace: WagoTypesErrorBase

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: True
- SystemLibrary: False

WagoTypesModuleBase
Library Identification:
Placeholder: WagoTypesModuleBase
Default Resolution: WagoTypesModuleBase, * (WAGO)
Namespace: WagoTypesModuleBase

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: True
- SystemLibrary: False

Library Parameter:
Parameter: MAX_MBX_SIZE = 18

WagoTypesModule_75x_49x
Library Identification:
Placeholder: WagoTypesModule_75x_49x
Default Resolution: WagoTypesModule_75x_49x, * (WAGO)
Namespace: WagoTypesModule_75x_49x

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: True
- SystemLibrary: False

WagoVisuIcons
Library Identification:
Name: WagoVisuIcons
Version: 1.1.0.5
Company: WAGO
Namespace: WagoVisuIcons

Library Properties:

- LinkAllContent: False
- Optional: False
- QualifiedOnly: False
- SystemLibrary: False

Based on WagoAppPowerMeasurement.library, last modified 29.09.2023, 04:33:05. LibDoc 4.1.1.0