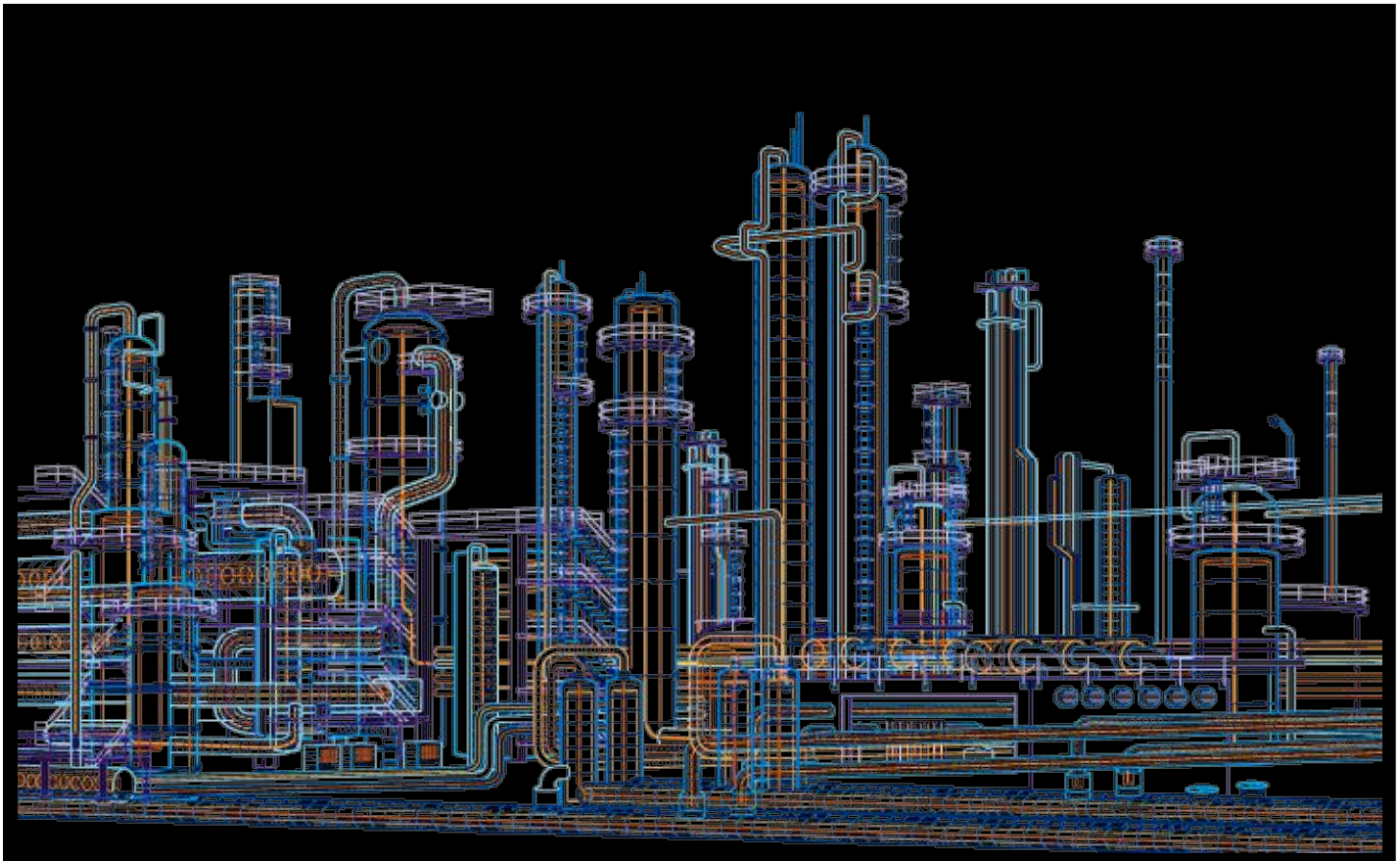

System 800xA
PC Toolkit Library for Melody
Human System Interface - PID Controller
User Manual

SV5.1RevA

Power and productivity
for a better world™

Purpose

The purpose of this document is to describe the Human System Interface with Faceplates and Graphic Elements of the System 800xA with connectivity to Melody/AC870P. All elements are part of an 800xA System Extension, which will be used mainly in the Petrochemical Industry but also in other Process industries. This document defines the ABB Control System standards for the Human Machine Interface (HMI).

Conditions

The System Extension supports 800xA System Version SV5.1RevA.

Notice

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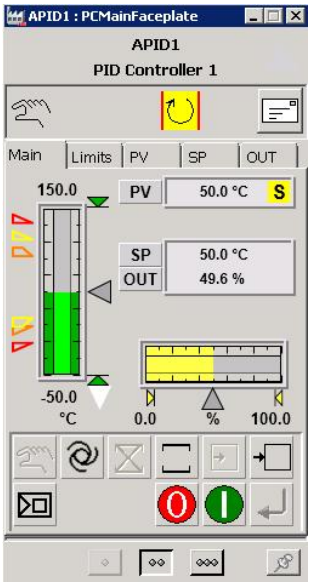
Human System Interface (Classic Style)

1. APID- PID Controller



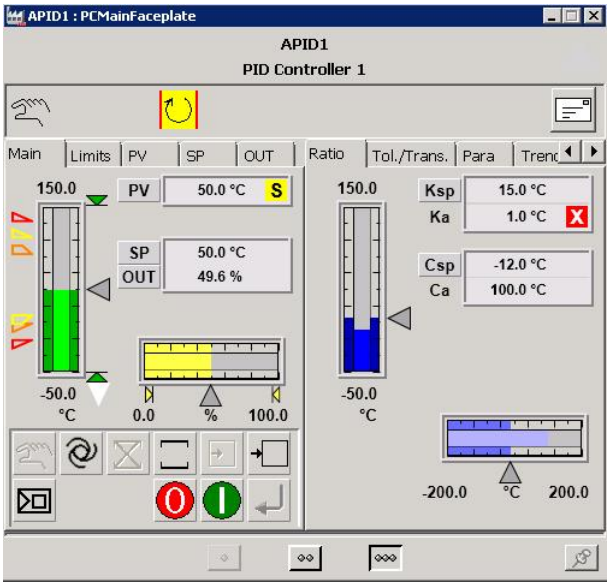


Figure: 1-1 Main View *Figure: 1-2 Extended View*

Basic information

Name:	**PCMainFaceplate**
Description:	PCMainFaceplate
Connect type:	Melody AC870P
Object type:	PID Closed Loop Controller
Library:	-
Min. required 800xA version:	SV5.1RevA
Graphics Builder version:	PG2

Table: 1-1 Basic Information

Layout

Parameter	**Value**
Update rate (ms)	1000
Default view	Faceplate
Faceplate orientation	Horizontal

Table: 1-2 Layout information

Sizing information

Parameter in pixels	Main View	Ext. View
Width	250 px	500 px
Height	424 px	424 px
MaxNoOfIndicatorRows	1	1
MaxNoOfIndicatorsRerRow	6	12
MaxNoOfButtonRows	0	0
MaxNoOfButtonPerRow	6	12

Table: 1-3 Sizing Information

Indicator and button icons are displayed on dedicated positions. Position 1 is the upper left corner. Position 12 is the lower right corner. Position 0 is not shown.

Elements

View	Aspect	Tab	NLS-ID	User role
Main	apid_FE_Main PG2	1	NLSID_PC_Main	EveryOne
Main	apid_FE_Limits PG2	1	NLSID_PC_Limits	EveryOne
Main	apid_FE_PV PG2	1	NLSID_PC_PV	EveryOne
Main	apid_FE_SP PG2	1	NLSID_PC_SP	EveryOne
Main	apid_FE_Out PG2	1	NLSID_PC_OUT	EveryOne
Ext	apid_FE_Main PG2	1	NLSID_PC_Main	EveryOne
Ext	apid_FE_Limits PG2	1	NLSID_PC_Limits	EveryOne
Ext	apid_FE_PV PG2	1	NLSID_PC_PV	EveryOne
Ext	apid_FE_SP PG2	1	NLSID_PC_SP	EveryOne
Ext	apid_FE_Out PG2	1	NLSID_PC_OUT	EveryOne
Ext	apid_FE_RatioBias PG2	2	NLSID_PC_Ratio	EveryOne
Ext	apid_FE_TolTrans PG2	2	NLSID_PC_TolTrans Short	EveryOne
Ext	apid_FE_Params PG2	2	NLSID_PC_Para	EveryOne
Ext	apid_FE_Trend PG2	2	NLSID_PC_Trend	EveryOne
Ext	apid_FE_Config PG2	2	NLSID_PC_Config	EveryOne

Table: 1-4 Faceplate Aspect names

1.1 Faceplate elements

1.1.1 apid_FE_Main PG2

This is the main view for PID Closed Loop Controller object type faceplate. It presents all main controller values in numeric and bar graph form. Operator input is possible based on access rights. Some of the controls may become invisible depending on configuration.

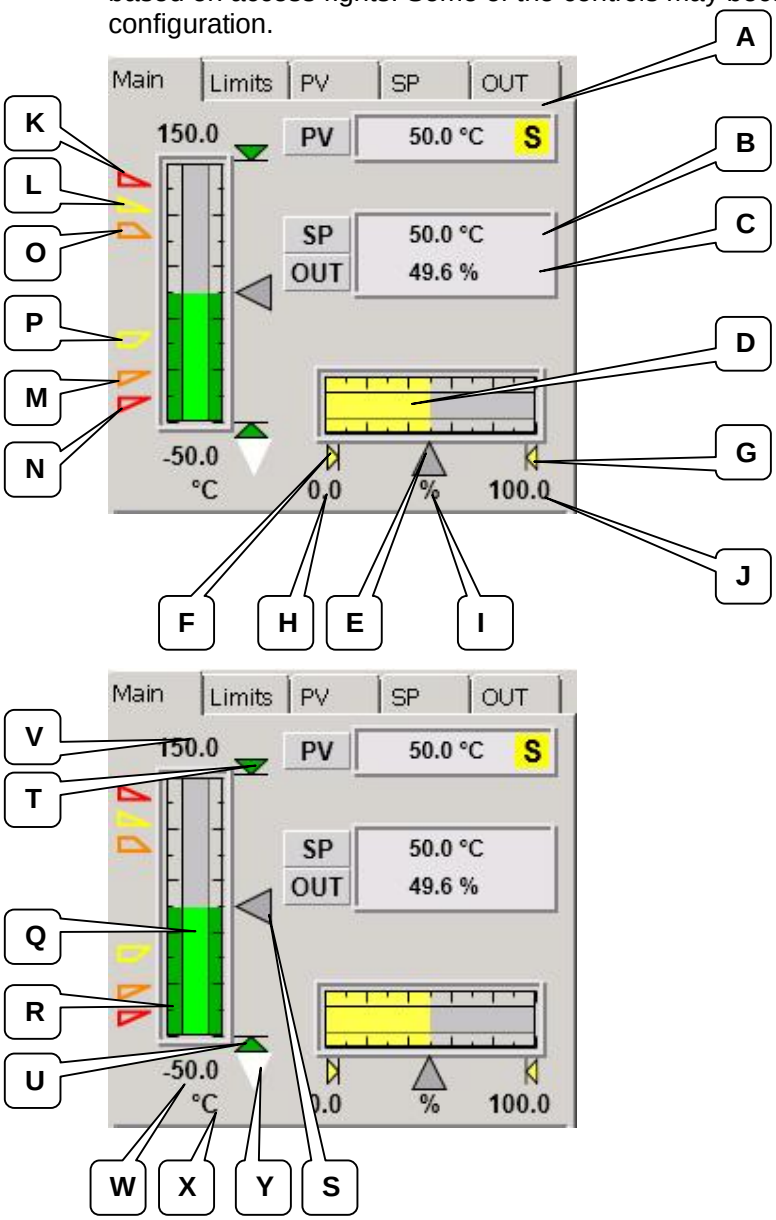


Figure: 1-3 Main Tab

ID	Comment	Property
A	Process value	XAY/SIG
B	Actual setpoint value	WAY/SIG

ID	Comment	Property
C	Actual output value	YAY/SIG
D	Bargraph presentation of output value	YAY/SIG
E	Operator input of output value	YAY/SIG
F	Limitation of output value – low limit	YLY/SIG
G	Limitation of output value – high limit	YHY/SIG
H	Low range of output value	YAY/LOW
I	Unit string of output value	YAY/UNITS
J	High range of output value	YAY/HIGH
K	HH limit	AHHX/SIG
L	H limit	AHX/SIG
M	L limit	ALX/SIG
N	LL limit	ALLX/SIG
O	Deviation high limit	AHDX/SIG + WY/SIG
P	Deviation low limit	ALDX/SIG + WY/SIG
Q	Process value	XAY/SIG
R	Actual setpoint value	WAY/SIG
S	Operator input of setpoint value	WOY/SIG
T	Limitation of setpoint value – high limit	WHY/SIG
U	Limitation of setpoint value – low limit	WLY/SIG
V	High range of process value	XAY/HIGH
W	Low range of process value	XAY/LOW
X	Unit string of process value	XAY/UNITS
Y	Arrow (up or down direction) shows that transient limit is reached	Transient high: AHTY/SIG Transient low: ALTY/SIG

Table: 1-5 Classic Faceplate Main tab Description

1.1.2 apid_FE_Limits PG2

This is the process value limits view for PID Closed Loop Controller object type faceplate. Process value together with alarm limits is presented. Operator input is possible based on access rights. Some of the controls may become invisible depending on configuration.

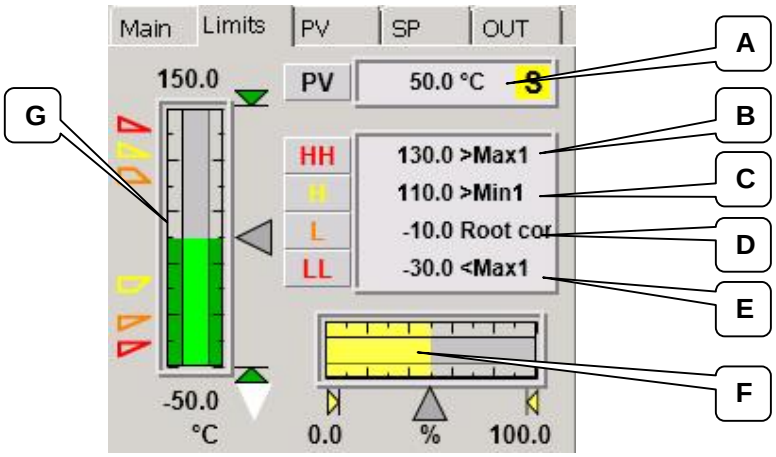


Figure: 1-4 Limits Tab

ID	Comment	Property
A	Process value	XAY/SIG
B	HH limit	AHHX/SIG
C	H limit	AHX/SIG
D	L limit	ALX/SIG
E	LL limit	ALLX/SIG
F	Output bargraph	Refer to description of Main tab
G	Process value/setpoint bargraph	Refer to description of Main tab

Table: 1-6 Classic Faceplate Limits tab Description

1.1.3 apid_FE_PV PG2

This is the process value view for PID Closed Loop Controller object type faceplate. Process value together with raw and substitute value are presented. Operator input is possible based on access rights. Some of the controls may become invisible depending on configuration.

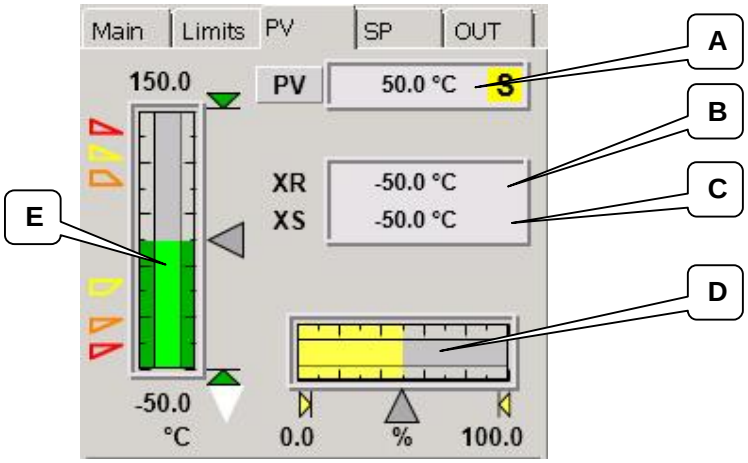


Figure: 1-5 PV Tab

ID	Comment	Property
A	Process value	XAY/SIG
B	IO value (visible only if PV value is simulated)	XRY/SIG
C	Value after substitution	XSUY/SIG
D	Output bargraph	Refer to description of Main tab
E	Process value/setpoint bargraph	Refer to description of Main tab

Table: 1-7 Classic Faceplate PV tab Description

1.1.4 apid_FE_SP PG2

This is the setpoint values view for PID Closed Loop Controller object type faceplate. It shows all setpoint related values. Operator input is possible based on access rights. Some of the controls may become invisible depending on configuration.

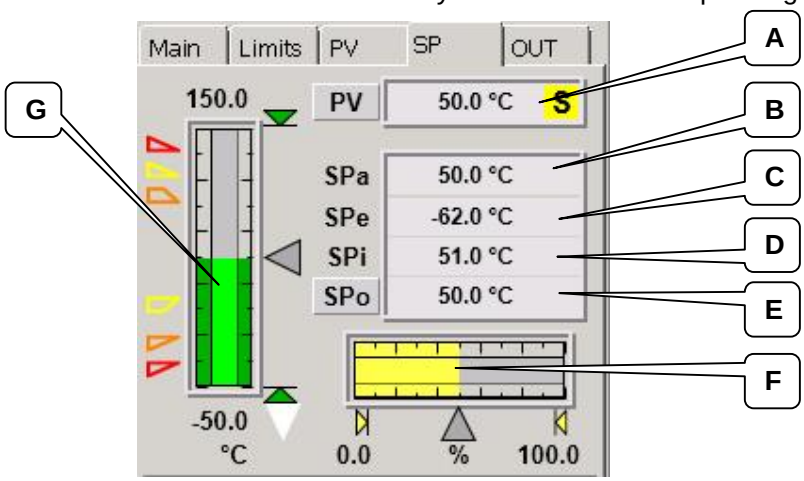


Figure: 1-6 SP Tab

ID	Comment	Property
A	Process value	XAY/SIG
B	Actual setpoint value (“SPa”)	WAY/SIG
C	External setpoint value (“SPe”)	WEY/SIG
D	Internal setpoint value (“SPi”) – visible if WRO/SIG = true	WIY/SIG
E	Operator setpoint (“SPo”)	WOY/SIG
F	Output bargraph	Refer to description of Main tab
G	Process value/setpoint bargraph	Refer to description of Main tab

Table: 1-8 Classic Faceplate SP tab Description

1.1.5 apid_FE_Out PG2

This is the output values view for PID Closed Loop Controller object type faceplate. It presents all output related values. Operator input is possible based on access rights. Some of the controls may become invisible depending on configuration.

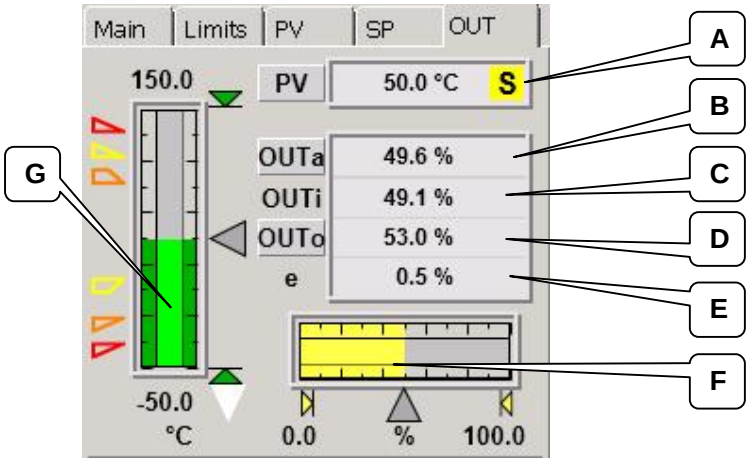


Figure: 1-7 Output Tab

ID	Comment	Property
A	Process value	XAY/SIG
B	Actual output value (“OUTa”)	YAY/SIG
C	Internal output value (“OUTi”) – visible if YRO/SIG = true	YIY/SIG
D	Operator output value (“OUTo”)	TYOY/SIG
E	Control deviation	DEVY/SIG
F	Output bargraph	Refer to description of Main tab
G	Process value/setpoint bargraph	Refer to description of Main tab

Table: 1-9 Classic Faceplate Output tab Description

1.1.6 apid_FE_RatioBias PG2

This is the Ratio controller parameters view for the PID Closed Loop Controller object type faceplate. Ratio and bias (actual and set point) values are presented in numerical and bar graph form. Operator input is possible based on access rights. Visibility of controls is dependent on configuration.

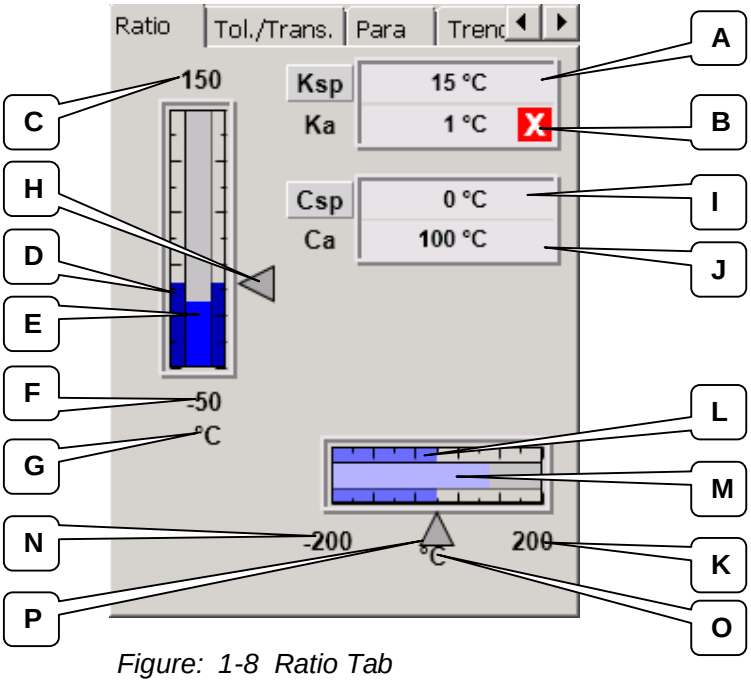


Figure: 1-8 Ratio Tab

ID	Comment	Property
A	Ratio setpoint (“Ksp”)	WKY/SIG
B	Actual ratio value (“Ka”)	WKAY/SIG
C	Maximum range for ratio	WKAY/HIGH
D	Setpoint value for ratio	WKY/SIG
E	Actual ratio value (“Ka”)	WKAY/SIG
F	Minimum range for ratio	WKAY/LOW
G	Unit string for ratio	WKAY/UNITS
H	Input of setpoint value for ratio	WKY/SIG
I	Bias setpoint (“Csp”)	WCY/SIG
J	Actual bias value (“Ca”)	WCAY/SIG
K	Maximum range for bias	WCAY/HIGH
L	Setpoint value for bias (“Ksp”)	WCY/SIG
M	Actual bias value (“Ka”)	WCAY/SIG
N	Minimum range for bias	WCAY/LOW

ID	Comment	Property
O	Unit string for bias	WCAY/UNITS
P	Input of Setpoint value for bias	WCY/SIG

Table: 1-10 Classic Faceplate Ratio tab Description

1.1.7 apid_FE_TolTrans PG2

This is the transient and deviation limits view for the PID Closed Loop Controller object type faceplate. Operator input is possible based on access rights. Visibility of controls is dependent on configuration.

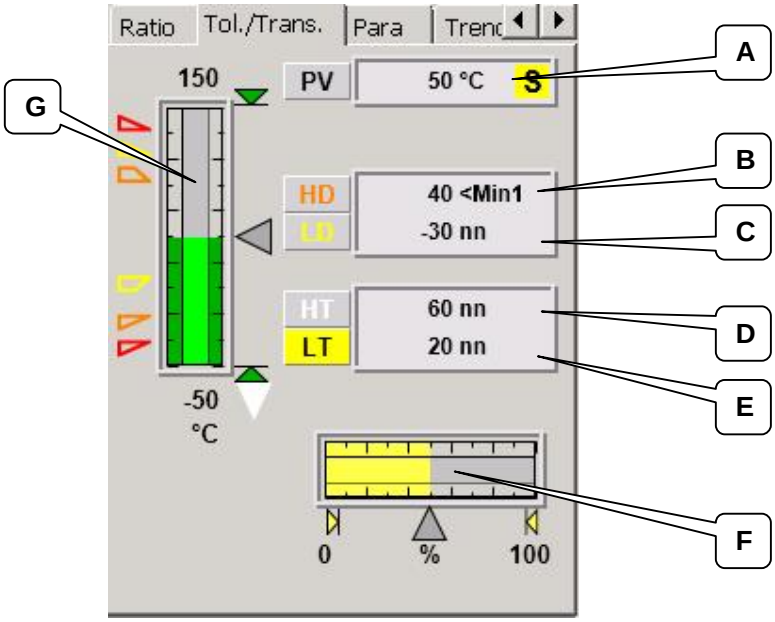


Figure: 1-9 Tol./Trans Tab

ID	Comment	Property
A	Process value	XAY/SIG
B	High deviation limit	AHDX/SIG
C	Low deviation limit	ALDX/SIG
D	High transient limit	AHTX/SIG
E	Low transient limit	ALTX/SIG
F	Output bargraph	Refer to description of Main tab
G	Process value/setpoint bargraph	Refer to description of Main tab

Table: 1-11 Classic Faceplate TolTrans tab Description

1.1.8 apid_FE_Parameters PG2

This is the controller parameters view for the PID Closed Loop Controller object type faceplate. Operator input is possible based on access rights. Visibility of controls is dependent on configuration.

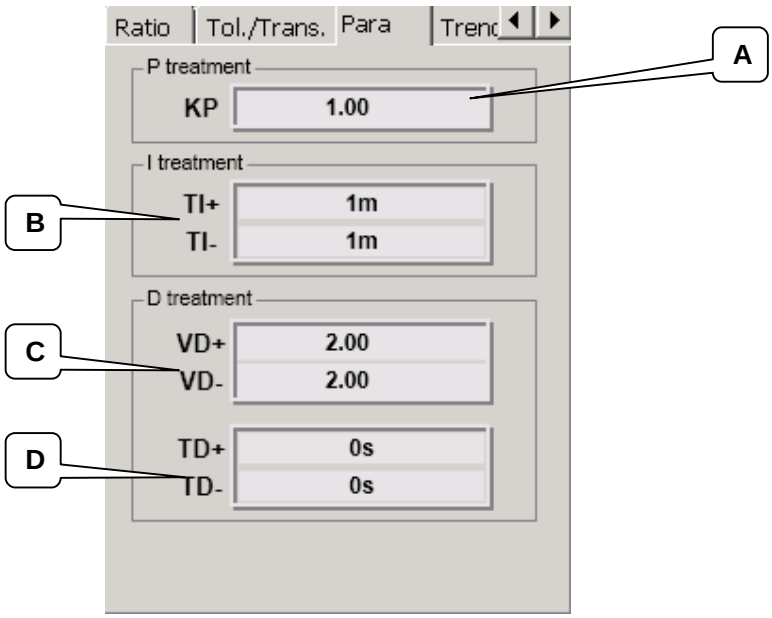


Figure: 1-10 Parameters Tab

ID	Comment	Property
A	Proportional gain	KPY/SIG
B	Integration time. Presented either as common parameter (“TI”) or 2 separate parameters for each direction (“TI+” and “TI-“)	General: TIY/SIG “+” direction: TI+Y/SIG “-” direction: TI-Y/SIG
C	Derivative gain. Presented either as common parameter (“VD”) or 2 separate parameters for each direction (“VD+” and “VD-“)	General: VDY/SIG “+” direction: VD+Y/SIG “-” direction: VD-Y/SIG
D	Derivation time. Presented either as common parameter (“TD”) or 2 separate parameters for each direction (“TD+” and “TD-“)	General: TDY/SIG “+” direction: TD+Y/SIG “-” direction: TD-Y/SIG

Table: 1-12 Classic Faceplate Parameters tab Description

1.1.9 apid_FE_Trend PG2

This is the trend view for the PID Closed Loop Controller object type faceplate. It presents 3 main controller values.

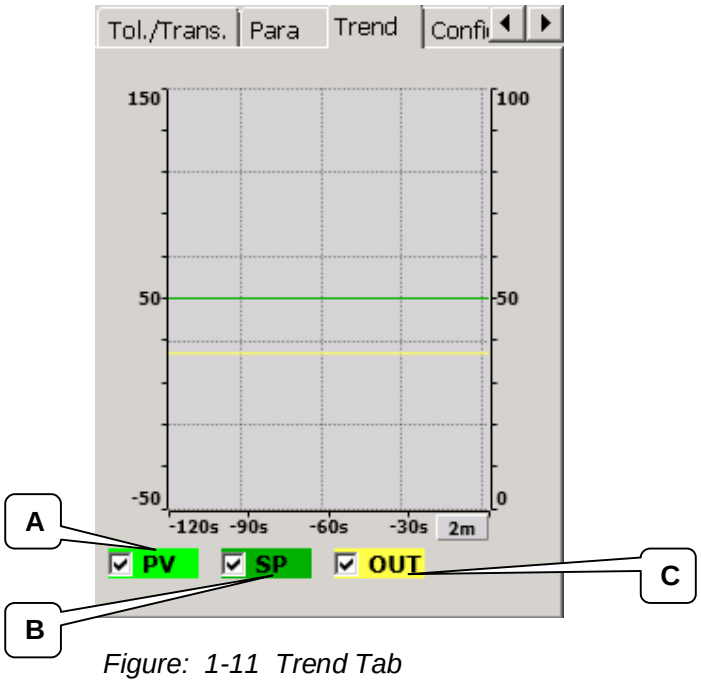


Figure: 1-11 Trend Tab

ID	Comment	Property
A	Process value (“PV”)	XAY/SIG
B	Actual output value (“SP”)	WAY/SIG
C	Actual output value (“OUT”)	YAY/SIG

Table: 1-13 Classic Faceplate Trend tab Description

1.1.10 apid_FE_Config PG2

Operation Lock and Manual Inhibit Write Permissions

The Melody faceplates' configuration tab allows checking **Operation Lock** in order to inhibit operator inputs. All buttons will be grayed out. Refer to document 3BDA033456R51xx Installation and Configuration in order to change the default write permission.

Manual Inhibit can be selected to manually inhibit all alarms of this Melody tag.

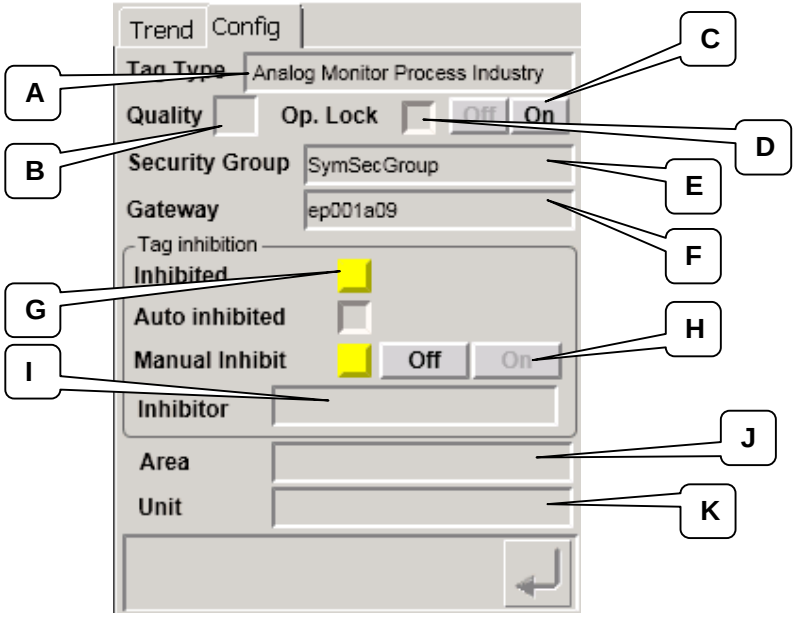


Figure: 1-12 Config Tab

ID	Comment	Property
A	Text describing the type of the tag	TYPE
B	Character which is providing Melody quality information	QUALITY
C	Buttons allow to switch Operating Lock on and off	On: AKO/SIG Off: AKOR/SIG
D	Binary indicator Yellow color: Op. Lock is On Gray color: Op. Lock is Off	AKO/SIG
E	Text describing the Melody security group to which this tag belongs	SECNAME
F	Text describing the Melody gateway to which this tag belongs	GATEWAY
G	Binary indicators are showing inhibition status (Yellow color = On)	INHB

ID	Comment	Property
		INHBAUTO INHBMAN
H	Buttons allow to manually inhibit the tag	INHBMAN
I	Information about inhibitor	INHBTAG
J	Text describing Melody area to which tag belongs	AREA
K	Text describing Melody unit to which tag belongs	UNIT

Table: 1-14 Classic Faceplate Config tab Description

1.2 Indicators

Icon	Description	Property (Value)	Position		
			Red	FP	Ext
	Automatic mode set	OAUT/SIG	1	1	1
	Manual mode set	OMAN/SIG	1	1	1
	Automatic mode locked	OAUT/SIG and LKO/SIG	1	1	1
	Manual mode locked	OMAN/SIG and LKO/SIG	1	1	1
	Cascade mode	CAS/SIG	1	1	1
	Cascade mode locked	CAS/SIG and LKO/SIG	1	1	1
	DDC operating mode	DDC/SIG	1	1	1
	DDC operating mode locked	DDC/SIG and LKO/SIG	1	1	1
	SPC operating mode	SPC/SIG	1	1	1
	SPC operating mode locked	SPC/SIG and LKO/SIG	1	1	1
	Forced manual	YFSO/SIG	2	2	2
	Local interlock	LOCO/SIG	2	2	2
	Override control	OVO/SIG	2	2	2
	Control action Y	YNO/SIG	2	2	2

Icon	Description	Property (Value)	Position		
			Red	FP	Ext
	Control action T	TFNO/SIG	2	2	2
	Control action W	WNO/SIG	2	2	2
	Computer ready	COMP/SIG	2	2	2
	Synchronisation	EPO/SIG	2	2	2
	Internal setpoint mode	INT/SIG and MAN/SIG	3	3	3
	External setpoint mode	EXT/SIG and MAN/SIG	3	3	3
	Alternative value for PV (simulated)	ATO/SIG	4	4	4
	Forced	XAY/SIG:Q=216 or YAY/SIG:Q	4	4	4
	Disabled AE	(AHHY/ALI<>"" and AHHN/SIG and AHHY/EN) or (AHY/ALI<>"" and AHN/SIG and AHY/EN) or (ALY/ALI<>"" and ALN/SIG and ALY/EN) or (ALLY/ALI<>"" and ALLN/SIG and ALLY/EN) or (AHDY/ALI<>"" and AHDN/SIG and AHDY/EN) or (ALDY/ALI<>"" and ALDN/SIG and ALDY/EN) or (AHTY/ALI<>"" and AHTN/SIG and AHTY/EN) or (ALTY/ALI<>"" and ALTN/SIG and ALTY/EN)	4	4	4
	Operator lock	AKO/SIG	5	5	10
	Operator note available		-	-	11

Table: 1-15 Indicators

1.3 Aspect Links

Icon	Description	Aspect	Position		
			Red	FP	Ext
	Operator note	Operator note	6	6	12

Table: 1-16 Aspect Links

1.4 Faceplate Buttons

Icon	Description	Property (Value)	Position		
			Red	FP	Ext
	Set manual mode	MAN/SIG	1	1	1
	Set automatic mode	AUT/SIG	2	2	2
	Reset operating mode lock	LKOR/SIG	3	3	3
	Set operating mode lock	LKOS/SIG	4	4	4
	Set set-point mode to internal setpoint	INT/SIG	5	5	5
	Set set-point mode to external setpoint	EXT/SIG	6	6	6
	Set operating mode cascade	CAS/SIG	7	7	7
	Set operating mode computer	COMP/SIG	8	8	8
	Reset the substitution value (available only on PV tab)	SUO/SIG	9	9	9
	Switch to alternative value (available only on PV tab)	ATO/SIG	10	10	10
	Switch from alternative value to normal value (available only on PV tab)	ATOR/SIG	11	11	11
	Set output to 0%	CMD0/SIG	10	10	10
	Set output to 100%	CMD1/SIG	11	11	11
	Apply the selected action	-	12	12	12

Table: 1-17 Faceplate Buttons

1.5 Graphic Elements

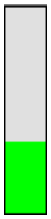
The following Graphic Elements have the following standard properties and enumeration.

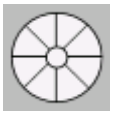
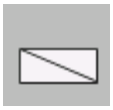
Standard properties

Property	Data type	Default value	Description
EnableInput	Boolean	True	Enables input handling of the element, if false the element it self can't selected.
Name	String	-	Name of the element instance in a graphic display. Is set automatically by the Graphics Builder (Name of the element + index).
Rotation	Rotation	0	Rotation angle
SubscriptionRate	Integer	0	Update rate for all properties subscribed for
Transform	Transform	Empty	Enables animation like scaling, moving and rotation. It is intended only for dynamic values.
Visible	Boolean	True	Visibility of the element in the graphic display.
XPos	Float	-	X position of the upper left corner of the element
YPos	Float	-	Y position of the upper left corner of the element

Table: 1-18 Standard Properties for all Graphic Elements

Graphic Elements based on Melody object type PID Closed Loop Contoller

Example	Graphic Element Name	Description
	apid_way_bargraph_PG2	Bar graph displaying the current set point.
	apid_wkay_bargraph_PG2	Bar graph displaying the current Wext ratio.
	apid_wky_bargraph_PG2	Bar graph displaying the ratio factor for Wext.
	apid_xay_bargraph_PG2	Bar graph displaying the current process value.
	apid_yay_bargraph_PG2	Bar graph displaying the current controller output.
	apid_way_numeric_PG2	Indicator text box with numeric formatting displaying the current set point.
	apid_way_numeric_op_PG2	Indicator text box, that allows user input, with numeric formatting displaying the

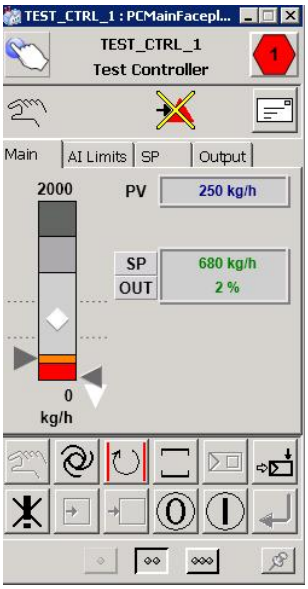
Example	Graphic Element Name	Description
		current set point.
35.0 kg	apid_xay_numeric_PG2	Indicator text box with numeric formatting displaying the current process value.
0 %	apid_yay_numeric_PG2	Indicator text box with numeric formatting displaying the current controller output.
2.05 %	apid_wky_numeric_PG2	Indicator text box with numeric formatting displaying the ratio factor for Wext
Infinity %	apid_wkay_numeric_PG2	Indicator text box with numeric formatting displaying the current Wext ratio
	apid_3way_valve_PG2	Mode icon Three-way-valve. Relevant to controller output.
	apid_bucket_wheel_PG2	Mode icon Bucket Wheel. Relevant to controller output.
	apid_com_PG2	Mode icon Compressor. Relevant to controller output.
	apid_engine_PG2	Mode icon Engine/Motor. Relevant to controller output.
	apid_fan_PG2	Mode icon Fan. Relevant to controller output.
	apid_flap_PG2	Mode icon Flap. Relevant to controller output.
	apid_pump_PG2	Mode icon Pump. Relevant to controller output.

Example	Graphic Element Name	Description
	apid_valve_PG2	Mode icon Valve. Relevant to controller output.
	apid_mode_PG2	Mode icon showing the current control loop operating mode.
	apid_mode_simple_pg2	Mode icon showing the current control loop simple operating mode
	apid_limit_text_ahy_PG2	Limit indicator text box “High” displaying either the status text 0 or 1 as defined in the graphic element’s property.
	apid_limit_text_ahhy_PG2	Limit indicator text box “High-High” displaying either the status text 0 or 1 as defined in the graphic element’s property.
	apid_limit_text_aly_PG2	Limit indicator text box “Low” displaying either the status text 0 or as defined in the graphic element’s property.
	apid_limit_text_ally_PG2	Limit indicator text box “Low-Low” displaying either the status text 0 or as defined in the graphic element’s property.

Table 1-1: Melody APID GE

Human System Interface (High Performance Style)

2. APID- PID Controller



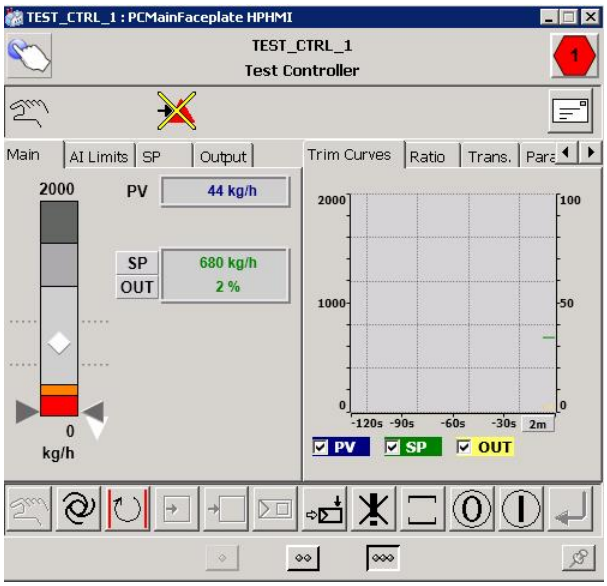


Figure: 2-1 Main View *Figure: 2-2 Extended View*

Basic information

Name:	**PCMainFaceplate HPHMI**
Description:	PC HPHMI Main Faceplate
Connect type:	Melody AC870P
Object type:	PID Closed Loop Controller
Library:	PCHighPerformanceHMILib 1.0-0
Min. required 800xA version:	SV5.1RevA
Graphics Builder version:	PG2

Table: 2-1 Basic Information

Layout

Parameter	**Value**
Update rate (ms)	1000
Default view	Faceplate
Faceplate orientation	Horizontal
Reduced View	Not available

Table: 2-2 Layout information

Sizing information

Parameter in pixels	Main View	Ext. View
Width	250 px	500 px
Height	424 px	424 px
MaxNoOfIndicatorRows	1	1
MaxNoOfIndicatorsRerRow	6	12
MaxNoOfButtonRows	2	1
MaxNoOfButtonPerRow	6	12

Table: 2-3 Sizing Information

Indicator and button icons are displayed on dedicated positions. Position 1 is the upper left corner. Position 12 is the lower right corner. Position 0 is not shown.

Elements

View	Aspect	Tab	NLS-ID	User role
Main	apid_FE_HPHMI_Main	1	NLSID_PC_Main	EveryOne
Main	apid_FE_HPHMI_Limits	1	NLSID_PC_Mel_AILimits	EveryOne
Main	apid_FE_HPHMI_SP	1	NLSID_PC_SP	EveryOne
Main	apid_FE_HPHMI_Out	1	NLSID_PC_Output	EveryOne
Ext	apid_FE_HPHMI_Main_ext	1	NLSID_PC_Main	EveryOne
Ext	apid_FE_HPHMI_Limits_ext	1	NLSID_PC_Mel_AILimits	EveryOne
Ext	apid_FE_HPHMI_SP_ext	1	NLSID_PC_SP	EveryOne
Ext	apid_FE_HPHMI_Out_ext	1	NLSID_PC_Output	EveryOne
Ext	apid_FE_HPHMI_Trend	2	NLSID_PC_Mel_Trend	EveryOne
Ext	apid_FE_HPHMI_RatioBias	2	NLSID_PC_Ratio	EveryOne
Ext	apid_FE_HPHMI_TolTrans	2	NLSID_PC_Mel_Trans	EveryOne
Ext	apid_FE_HPHMI_Parameters	2	NLSID_PC_Mel_Parameters	EveryOne
Ext	apid_FE_HPHMI_Config	2	NLSID_PC_Config	EveryOne

Table: 2-4 Faceplate Aspect names

2.1 Faceplate elements

2.1.1 apid_FE_HPHMI_Main, apid_FE_HPHMI_Main_ext

This is the main view for PID Closed Loop Controller object type faceplate. Operator input is possible based on access rights. Some of the controls may become invisible depending on configuration.

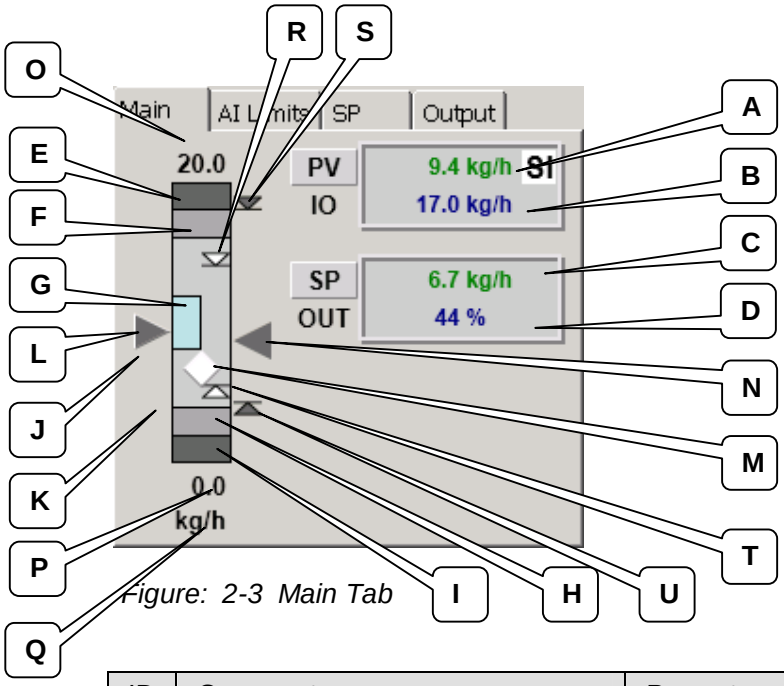


Figure: 2-3 Main Tab

ID	Comment	Property
A	Process value	XAY/SIG
B	IO value (visible only if PV value is simulated)	XRY/SIG
C	Actual setpoint value	WAY/SIG
D	Actual output value	YAY/SIG
E	HH limit	AHHX/SIG
F	H limit	AHX/SIG
G	Normal range	Normal Max: PC Additional Limits:GH.Value Normal Min: PC Additional Limits:GL.Value
H	L limit	ALX/SIG
I	LL limit	ALLX/SIG
J	Deviation high limit	AHDX/SIG
K	Deviation low limit	ALDX/SIG
L	Process value	XAY/SIG
M	Actual setpoint value	WAY/SIG
N	Actual output value	YAY/SIG

ID	Comment	Property
O	High range of process value	XAY/HIGH
P	Low range of process value	XAY/LOW
Q	Unit string of process value	XAY/UNITS
R	High limit setpoint value	WHY/SIG
S	High limit output value	YHY/SIG
T	Low limit setpoint value	WLY/SIG
U	Low limit output value	YLY/SIG

Table: 2-5 HPHMI Faceplate Main tab Description

2.1.2 apid_FE_HPHMI_Limits, apid_FE_HPHMI_Limits_ext

This is the process value limits view for PID Closed Loop Controller object type faceplate. Operator input is possible based on access rights. Some of the controls may become invisible depending on configuration.

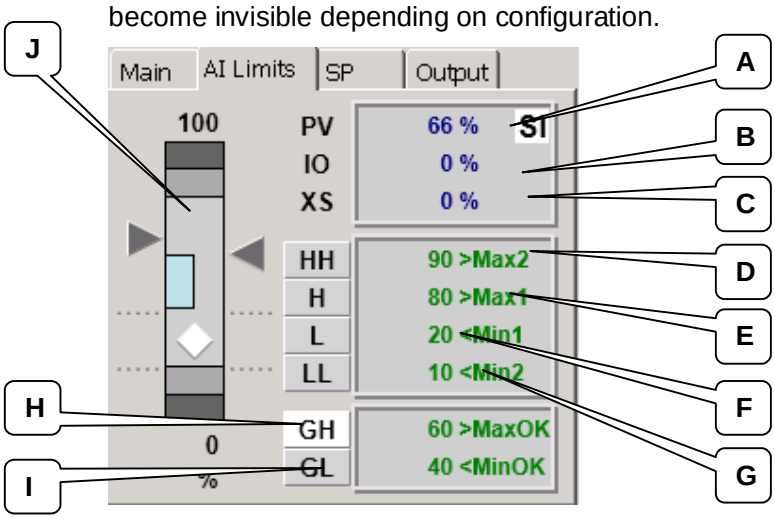


Figure: 2-4 Limits Tab

ID	Comment	Property
A	Process value	XAY/SIG
B	IO value (visible only if PV value is simulated)	XRY/SIG
C	Value after substitution	XSUY/SIG
D	HH limit	AHHX/SIG
E	H limit	AHX/SIG
F	L limit	ALX/SIG
G	LL limit	ALLX/SIG
H	Normal range max	PC Additional Limits:GH.Value

ID	Comment	Property
I	Normal range min	PC Additional Limits:GL.Value
J	Bar graph – for details refer to description of Main tab	-

Table: 2-6 HPHMI Faceplate Limits tab Description

2.1.3 apid_FE_HPHMI_SP, apid_FE_HPHMI_SP_ext

This is the setpoint values view for PID Closed Loop Controller object type faceplate. Operator input is possible based on access rights. Some of the controls may become invisible depending on configuration.

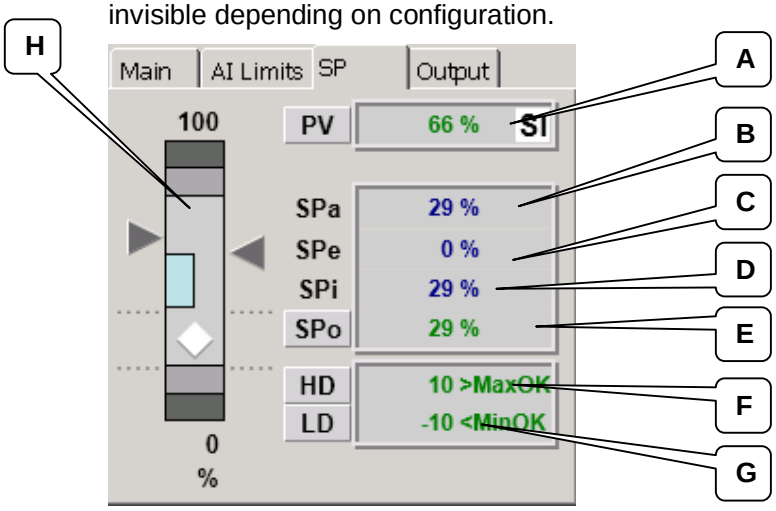


Figure: 2-5 SP Tab

ID	Comment	Property
A	Process value	XAY/SIG
B	Actual setpoint value	WAY/SIG
C	External setpoint value	WEY/SIG
D	Internal setpoint value	WIY/SIG
E	Operator setpoint	WOY/SIG
F	High deviation limit	AHDX/SIG
G	Low deviation limit	ALDX/SIG
H	Bar graph – for details refer to description of Main tab	-

Table: 2-7 HPHMI Faceplate SP tab Description

2.1.4 apid_FE_HPHMI_Out, apid_FE_HPHMI_Out_ext

This is the output values view for PID Closed Loop Controller object type faceplate. Operator input is possible based on access rights. Some of the controls may become invisible depending on configuration.

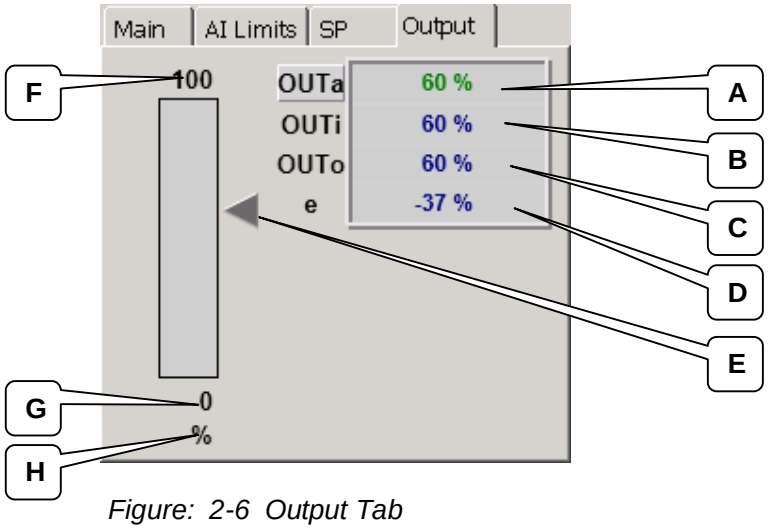


Figure: 2-6 Output Tab

ID	Comment	Property
A	Actual output value	YAY/SIG
B	Internal output value	YIY/SIG
C	Operator output value	TYOY/SIG
D	Control deviation	DEVY/SIG
E	Actual output value	YAY/SIG
F	Max range of output signal	YAY/HIGH
G	Min range of output signal	YAY/LOW
H	Unit string of output signal	YAY/UNITS

Table: 2-8 HPHMI Faceplate Output tab Description

2.1.5 apid_FE_HPHMI_Trend

This is the trend view for the PID Closed Loop Controller object type faceplate.

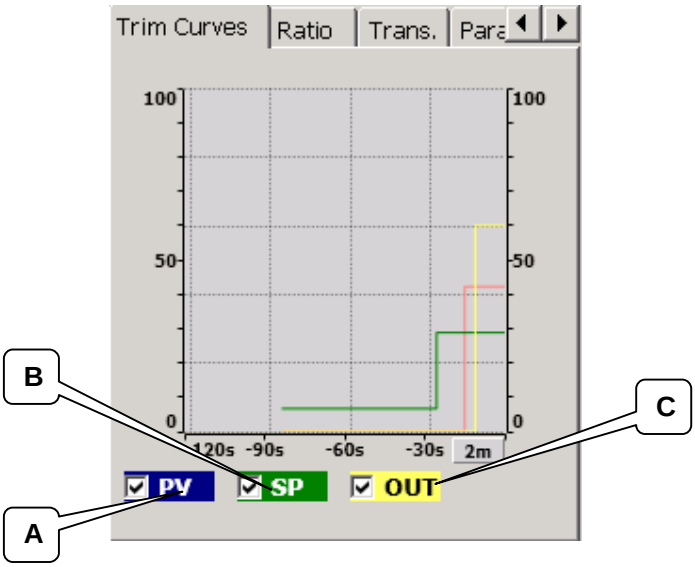


Figure: 2-7 Trend Tab

ID	Comment	Property
A	Process value (“PV”)	XAY/SIG
B	Actual output value (“SP”)	WAY/SIG
C	Actual output value (“OUT”)	YAY/SIG

Table: 2-9 HPHMI Faceplate Trend tab Description

2.1.6 apid_FE_HPHMI_RatioBias

This is the Ratio controller parameters view for the PID Closed Loop Controller object type faceplate. Operator input is possible based on access rights. Visibility of controls is dependent on configuration.

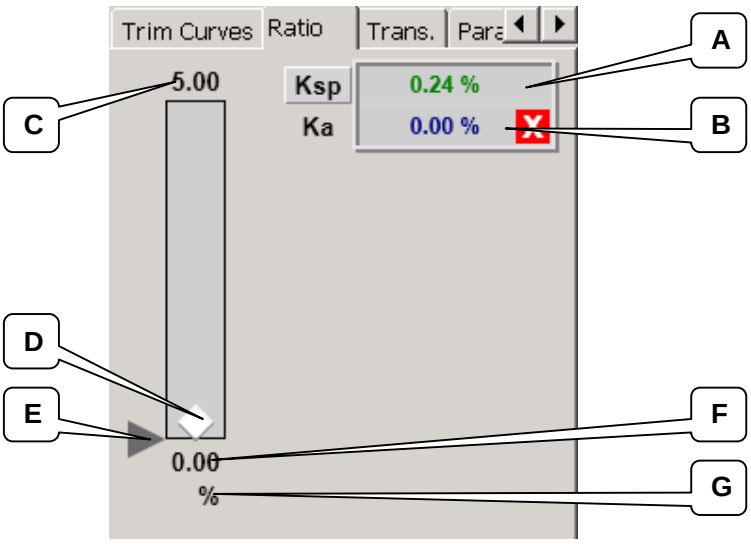


Figure: 2-8 Ratio Tab

ID	Comment	Property
A	Ratio setpoint (“Ksp”)	WKY/SIG
B	Actual ratio value (“Ka”)	WKAY/SIG
C	Maximum range for ratio	WKAY/HIGH
D	Setpoint value for ratio	WKY/SIG
E	Actual ratio value (“Ka”)	WKAY/SIG
F	Minimum range for ratio	WKAY/LOW
G	Unit string for ratio	WKAY/UNITS
H	Bias setpoint (“Csp”)	WCY/SIG
I	Actual bias value (“Ca”)	WCAY/SIG
J	Maximum range for bias	WCAY/HIGH
K	Setpoint value for bias	WCY/SIG
L	Actual bias value (“Ka”)	WCAY/SIG
M	Minimum range for bias	WCAY/LOW
N	Unit string for bias	WCAY/UNITS

Table: 2-10 HPHMI Faceplate Ratio tab Description

2.1.7 apid_FE_HPHMI_TolTrans

This is the transient and deviation limits view for the PID Closed Loop Controller object type faceplate. Operator input is possible based on access rights. Visibility of controls is dependent on configuration.

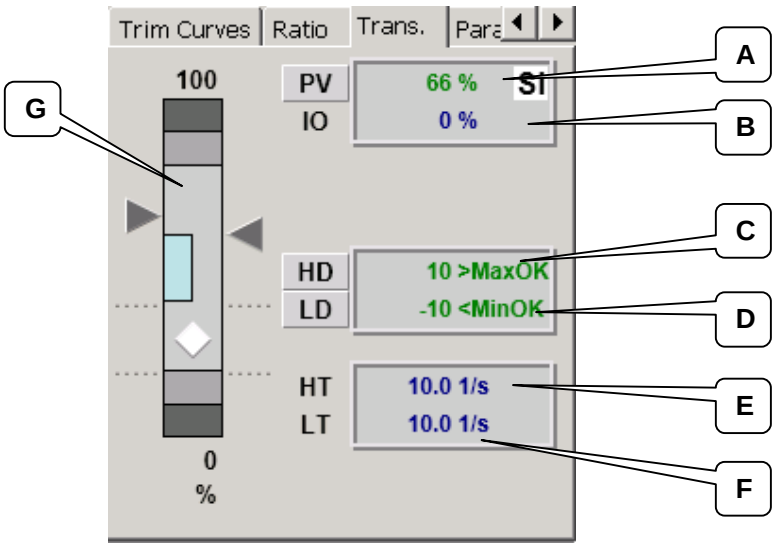


Figure: 2-9 Trans Tab

ID	Comment	Property
A	Process value	XAY/SIG
B	IO value (visible only if PV value is simulated)	XRY/SIG
C	High transient limit	AHTX/SIG
D	Low transient limit	ALTX/SIG
E	High deviation limit	AHDX/SIG
F	Low deviation limit	ALDX/SIG
G	Bar graph – for details refer to description of Main tab	-

Table: 2-11 HPHMI Faceplate Trans. tab Description

2.1.8 apid_FE_HPHMI_Parameters

This is the controller parameters view for the PID Closed Loop Controller object type faceplate. Operator input is possible based on access rights. Visibility of controls is dependent on configuration.

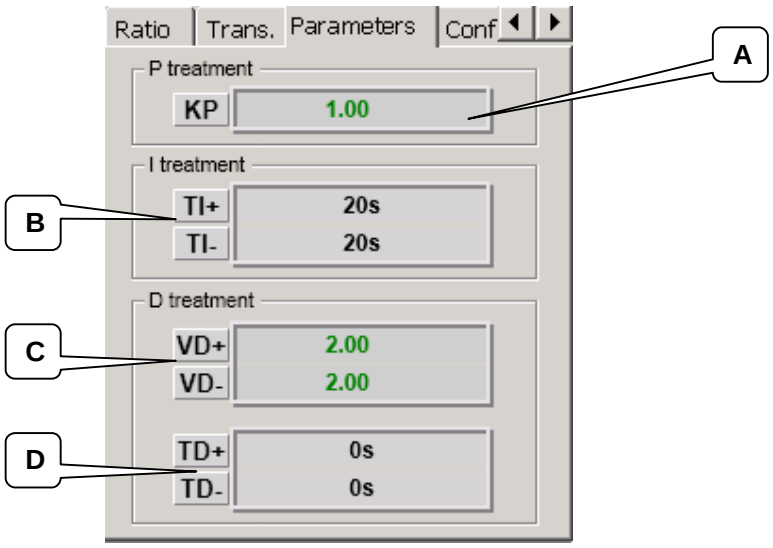


Figure: 2-10 Parameters Tab

ID	Comment	Property
A	Proportional gain	KPY/SIG
B	Integration time. Presented either as common parameter (“TI”) or 2 separate parameters for each direction (“TI+” and “TI-“)	General: TIY/SIG “+” direction: TI+Y/SIG “-” direction: TI-Y/SIG
C	Derivative gain. Presented either as common parameter (“VD”) or 2 separate parameters for each direction (“VD+” and “VD-“)	General: VDY/SIG “+” direction: VD+Y/SIG “-” direction: VD-Y/SIG
D	Derivation time. Presented either as common parameter (“TD”) or 2 separate parameters for each direction (“TD+” and “TD-“)	General: TDY/SIG “+” direction: TD+Y/SIG “-” direction: TD-Y/SIG

Table: 2-12 HPHMI Faceplate Parameters tab Description

2.1.9 apid_FE_HPHMI_Config

Operation Lock and Manual Inhibit Write Permissions

The Melody faceplates' configuration tab allows checking **Operation Lock** in order to inhibit operator inputs. All buttons will be grayed out. Refer to document 3BDA033456R51xx Installation and Configuration in order to change the default write permission.

Manual Inhibit can be selected to manually inhibit all alarms of this Melody tag.

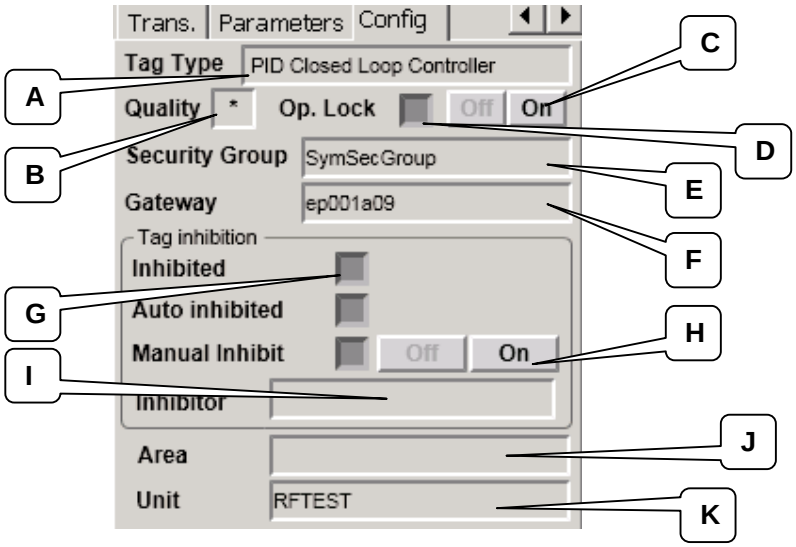


Figure: 2-11 HPHMI Faceplate Config Tab

ID	Comment	Property
A	Text describing the type of the tag	TYPE
B	Character which is providing Melody quality information	QUALITY
C	Buttons allow to switch Operating Lock on and off	On: AKO/SIG Off: AKOR/SIG
D	Binary indicator White color: Op. Lock is On Gray color: Op. Lock is Off	AKO/SIG
E	Text describing the Melody security group to which this tag belongs	SECNAME
F	Text describing the Melody gateway to which this tag belongs	GATEWAY
G	Binary indicators are showing inhibition status (white color = On)	INHB INHBAUTO INHBMAN

ID	Comment	Property
H	Buttons allow to manually inhibit the tag	INHBMAN
I	Information about inhibitor	INHBTAG
J	Text describing Melody area to which tag belongs	AREA
K	Text describing Melody unit to which tag belongs	UNIT

Table: 2-13 HPHMI Faceplate Config tab Description

2.2 Indicators

Icon	Description	Property (Value)	Position		
			Red	FP	Ext
	Automatic mode set	OAUT/SIG	-	1	1
	Manual mode set	OMAN/SIG	-	1	1
	Automatic mode locked	OAUT/SIG and LKO/SIG	-	1	1
	Manual mode locked	OMAN/SIG and LKO/SIG	-	1	1
	Cascade mode	CAS/SIG	-	1	1
	Cascade mode locked	CAS/SIG and LKO/SIG	-	1	1
	DDC operating mode	DDC/SIG	-	1	1
	DDC operating mode locked	DDC/SIG and LKO/SIG	-	1	1
	SPC operating mode	SPC/SIG	-	1	1
	SPC operating mode locked	SPC/SIG and LKO/SIG	-	1	1
	Forced manual	YFSO/SIG	-	2	2
	Local interlock	LOCO/SIG	-	2	2
	Override control	OVO/SIG	-	2	2
	Control action Y	YNO/SIG	-	2	2
	Control action T	TFNO/SIG	-	2	2

Icon	Description	Property (Value)	Position		
			Red	FP	Ext
	Control action W	WNO/SIG	-	2	2
	Computer ready	COMP/SIG	-	2	2
	Synchronisation	EPO/SIG	-	2	2
	Internal setpoint mode	INT/SIG and MAN/SIG	-	3	3
	External setpoint mode	EXT/SIG and MAN/SIG	-	3	3
	Alternative value for PV (simulated)	ATO/SIG	-	4	4
	Forced	XAY/SIG:Q=216 or YAY/SIG:Q	-	4	4
	Disabled AE	(AHHY/ALI<>"" and AHHN/SIG and AHHY/EN) or (AHY/ALI<>"" and AHN/SIG and AHY/EN) or (ALY/ALI<>"" and ALN/SIG and ALY/EN) or (ALLY/ALI<>"" and ALLN/SIG and ALLY/EN) or (AHDY/ALI<>"" and AHDN/SIG and AHDY/EN) or (ALDY/ALI<>"" and ALDN/SIG and ALDY/EN) or (AHTY/ALI<>"" and AHTN/SIG and AHTY/EN) or (ALTY/ALI<>"" and ALTN/SIG and ALTY/EN)	-	4	4
	Operator lock	AKO/SIG	-	5	10
	Operator note available		-	-	11

Table: 2-14 Indicators

2.3 Aspect Links

Icon	Description	Aspect	Position		
			Red	FP	Ext
	Operator note	Operator note	-	6	12

Table: 2-15 Aspect Links

2.4 Faceplate Buttons

Icon	Description	Property (Value)	Position		
			Red	FP	Ext
	Set manual mode	MAN/SIG	-	1	1
	Set automatic mode	AUT/SIG	-	2	2
	Switch to alternative value	ATO/SIG	-	3	3
	Switch from alternative value to normal value	ATOR/SIG	-	3	3
	Set set-point mode to internal setpoint	INT/SIG	-	8	4
	Set set-point mode to external setpoint	EXT/SIG	-	6	5
	Set operating mode cascade	CAS/SIG	-	5	6
	Set operating mode computer	COMP/SIG	-	6	7
	Set operating mode lock	LKOS/SIG	-	4	9
	Reset operating mode lock	LKOR/SIG	-	4	9
	Reset the substitution value	SUO/SIG	-	7	8
	Set output to 0%	CMD0/SIG	-	10	10
	Set output to 100%	CMD1/SIG	-	11	11
	Apply the selected action	-	-	6	12

Table: 2-16 Faceplate Buttons

2.5 Graphic Elements

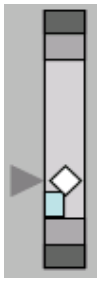
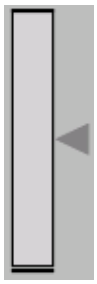
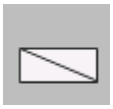
The following Graphic Elements have the following standard properties and enumeration.

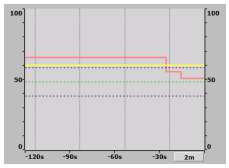
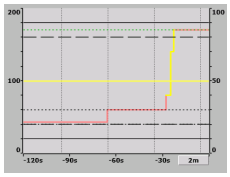
Standard properties

Property	Data type	Default value	Description
EnableInput	Boolean	True	Enables input handling of the element, if false the element it self can't selected.
Name	String	-	Name of the element instance in a graphic display. Is set automatically by the Graphics Builder (Name of the element + index).
Rotation	Rotation	0	Rotation angle
SubscriptionRate	Integer	0	Update rate for all properties subscribed for
Transform	Transform	Empty	Enables animation like scaling, moving and rotation. It is intended only for dynamic values.
Visible	Boolean	True	Visibility of the element in the graphic display.
XPos	Float	-	X position of the upper left corner of the element
YPos	Float	-	Y position of the upper left corner of the element

Table: 2-17 Standard Properties for all Graphic Elements

Graphic Elements based on Melody object type PID Closed Loop Contoller

Example	Graphic Element Name	Description
	apid_HPHMI_AlarmInd	Alarm indication
	apid_HPHMI_bargraph_pvsp	Bargraph indication (PV and input limits)
	apid_HPHMI_bargraph_out	Bargraph indication (OUT)
	apid_HPHMI_3way_valve	Three-way valve symbol based on controller output value
	apid_HPHMI_bucketwheel	Bucket wheel symbol based on controller output value
	apid_HPHMI_com	Compressor symbol based on controller output value
	apid_HPHMI_engine	Engine symbol based on controller output value
	apid_HPHMI_flap	Flap symbol based on controller output value

Example	Graphic Element Name	Description
	apid_HPHMI_pump	Pump symbol based on controller output value
	apid_HPHMI_valve	Valve symbol based on controller output value
	apid_HPHMI_limit_text_ahhy	Text indication based on active HH limit
	apid_HPHMI_limit_text_ahy	Text indication based on active H limit
	apid_HPHMI_limit_text_aly	Text indication based on active L limit
	apid_HPHMI_limit_text_ally	Text indication based on active LL limit
	apid_HPHMI_mode	Operating mode indication (2 icons vertical)
	apid_HPHMI_mode_simple	Operating mode indication (one icon)
	apid_HPHMI_interlock	Interlock indication (based on AKO signal)
	apid_HPHMI_SuppressInd	Alarm suppression indication
	apid_HPHMI_trend_dev	Trend indication (PV, SP, OUT and deviation limits)
	apid_HPHMI_trend_pvlimits	Trend indication (PV, SP, OUT and process value signal limits)

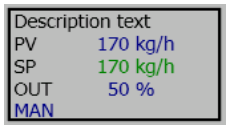
Example	Graphic Element Name	Description
	apid_HPHMI_status	PID status indication (PV, SP, OUT and operating mode)
	apid_HPHMI_way_numeric	Numeric indication of actual setpoint (signal WAY)
	apid_HPHMI_wkay_numeric	Numeric indication of actual ratio (signal WKAY)
	apid_HPHMI_xay_numeric	Numeric indication of actual process value (signal XAY)
	apid_HPHMI_yay_numeric	Numeric indication of actual output value (signal YAY)

Table 2-1: Melody APID GE

3BDA033442R5103EN_HMI_PID Controller Germany 2012-09-25

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