



FUNCTIONAL DESIGN SPECIFICATION FOR ADVANCED PROCESS CONTROLLER APC-J154-G2700C

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EXECUTIVE SUMMARY

This document is the Functional Design Specification (FDS) for the Advanced Process Controller (APC) that is being implemented. The document is structured into the following six sections:

Section 1 is a process background and description the process whereby the APC controller will be implemented. Based on the S88 standard, the process descriptions are covered. Also included are the stability and efficiency measures on the each unit which drive APC systems to align with Anglo American strategy.

Section 2 is an explanation of the basic control philosophy of the process unit.

Section 3 is a detailed explanation of the APC controller, including descriptions of the control, manipulated and disturbance variables as well as the controller objectives and key performance indicators (KPIs). This section also describes the logic for the detection of the four types of plant process state alarms which are; critical, high, low and default.

Section 4 (optional) is a description of the control technologies that will be used in the implementation of the APC controller. The control technologies are Fuzzy Control and Model Predictive Control (MPC).

Section 5 (optional) is a list of the heartbeats.

Section 6 (optional) is a list of all the tags that will be used in the implementation of the DMS Feed process unit APC controller.

Addendums (optional) is the final section of the document which is an explanation of the basic principles of operations for Process States, Fuzzy Control, Model Based Control and finally Model Predictive Control.

1) PROCESS BACKGROUND AND DESCRIPTION

1.1) SIS-JIG (Site)

1.1.1) Background

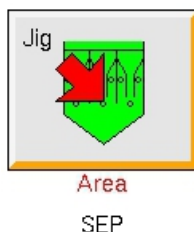


Fig 1: The members of the SIS-JIG Site - Highlighting the Jig-Area - SEP

1.2) SEP (Jig-Area)

1.2.1) Background

The jig plant at Sishen Iron Ore Mine consists of a primary, secondary and tertiary crushing circuit crushing the feed material to a -25 mm top size and longitudinally stacking it on two ROM (run of mine) feed beds. The ROM feed bed material is reclaimed by a bucket reclaimer and conveyed to eight feed bunkers.

After beneficiation the lumpy ore (-25 mm +8 mm) is conveyed and stacked on the blending beds while the fine material (-8 mm +1 mm) is conveyed to the dewatering bunkers and then stacked on the fine blending beds. The jig plant consist of eight modules with three jigs each, the coarse jig (-25 mm +8 mm), medium jig (-8 mm +3 mm) and fine jig (-3 mm +1 mm).

Jigging is a process of particle stratification in which the particle rearrangement results from an alternate expansion and compaction of a bed of particles by a pulsating fluid flow. The rearrangement results in layers of particles that are arranged by increasing density from top to bottom of the jig bed. The particles, in addition to the vertically expanded and compacted bed motion, move continuously and horizontally across the supporting jig screen helped by the feed material that is introduced at one end. The feed rate influences the retention time of the material in the jig and thus the number of pulses the material will receive. Following the particle stratification, the particle bed is physically cut at a desired horizontal particle density plane to separate the desired product from the less dense gangue material.

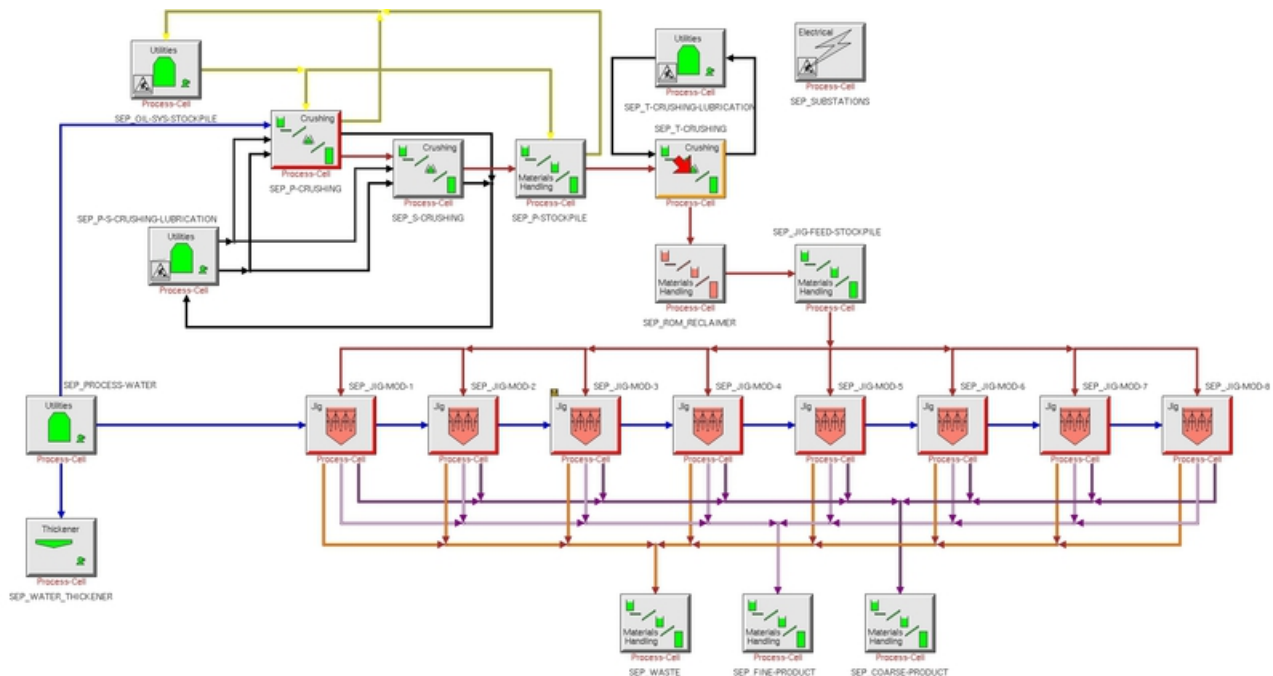


Fig 2: The members of the SEP Jig-Area - Highlighting the Crushing-Process-Cell - T-CRUSHING

1.3) T-CRUSHING (Crushing-Process-Cell)

1.3.1) Background

The tertiary crusher stage is fed from the primary stockpile, which contains the primary and secondary crusher product. The tertiary crushing plant consists of four tertiary cone crushers, each of which are fed at a controlled rate through a feed bin, two feeders per crusher. The tertiary crushing plant is in closed circuit and produces a -25mm which is conveyed to one of two pre-blending beds, these beds are fed to the beneficiation process (jigging).

1.3.2) Purpose

1.3.3) Theory

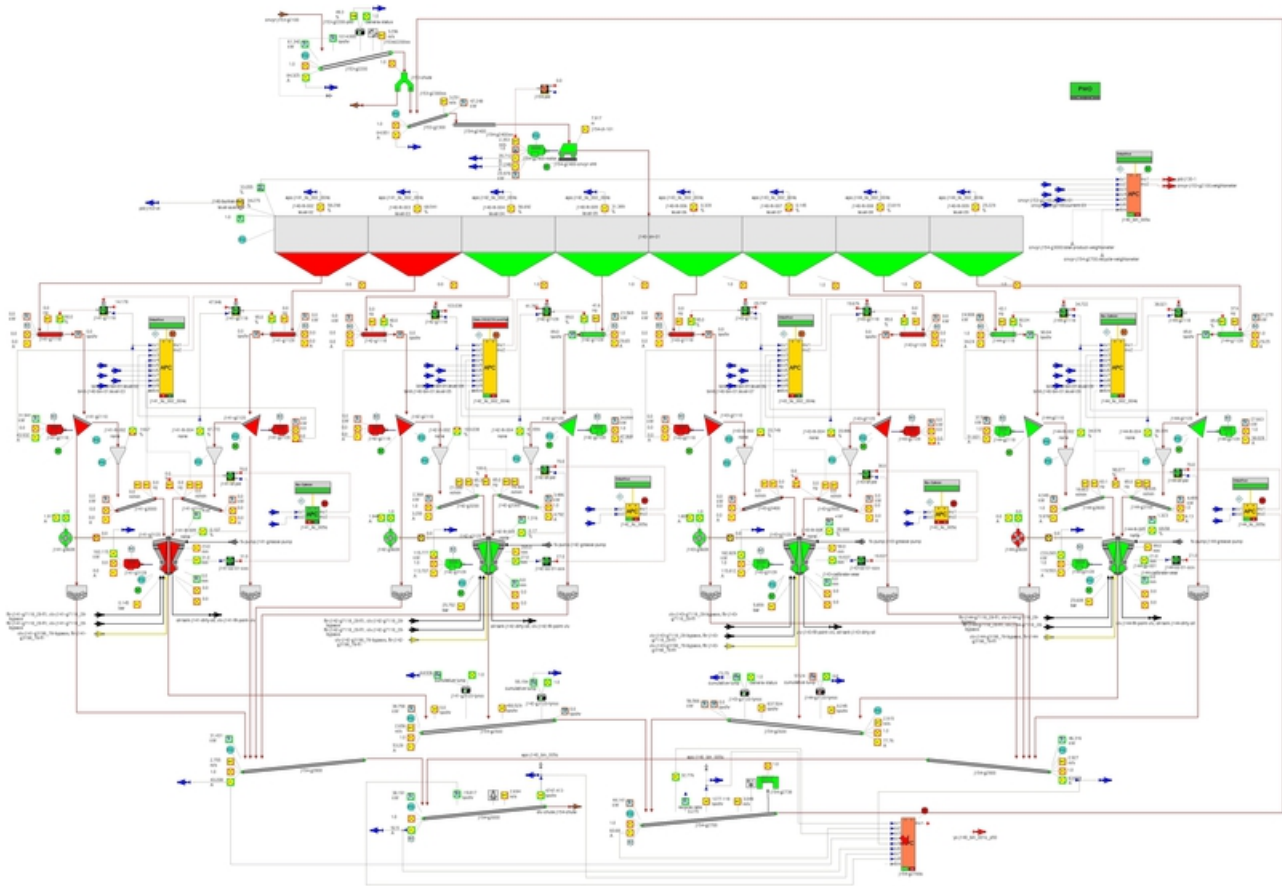


Fig 3: The members of the T-CRUSHER-PRODUCT unit which is a member of T-CRUSHING Crushing-Process-Cell - Highlighting J154-G2700C

1.4) T-CRUSHER-PRODUCT (Unit)

1.4.1) Background

The crusher product will be recycled back to the tertiary crusher feed bin where it will go through the screens and separated into +25mm and -25mm streams.

1.4.2) Measures

2) BASIC CONTROL

2.1) Description

One base layer PID controller for the combined speed manipulation of the two conveyors (and J141-G3100) feeding the crusher (J141-G3120).

One logic controller manipulating the closed side setting (CSS) (J141-GY-001) of the crusher (J141-G3120).

2.2) PID Tuning Parameters

PID Tuning			
Controller ID	P	I	D

3) ADVANCED CONTROL

3.1) Description

3.2) Controlled Variables

The following table lists the relevant controlled variables for this controller along with their engineering units and control limits. Note that these control limits can be adjusted from the SCADA faceplate

APC CVs for APC-J154-G2700C				
Description	ID	EU	Low	High
CV1: Tertiary Crusher Conveyor J154-G2700 Recycle-Weightometer	J154-G2700	ton/hr	0.00	4500.00
CV2: Tertiary Crusher Conveyor J154-G2700 Current	J154-G2768	A	0.00	118.00
CV3: Tertiary Crusher Conveyor J154-G2700 Recirc-Perc	ID	QUANTITY	20.00	55.00
CV4: Tertiary Crusher Conveyor J154-G2800 Current	J154-G2868	A	0.00	88.40
CV5: Tertiary Crusher Conveyor J154-G2900 Current	J154-G2968	A	0.00	88.40
CV6: Tertiary Crusher Conveyor J154-G3000 Current	J154-G3068	A	0.00	78.70
CV7: Tertiary Crusher Conveyor J154-G3000 Total-Product-Weightometer	154-G3000	ton/hr	0.00	5000.00
CV8: Tertiary Crusher Conveyor J154-G3000 Weightometer	ID	ton/hr	N/A	N/A

3.3) Manipulated Variables

The following table lists the relevant manipulated variables for this controller along with their engineering units and control limits. Note that these control limits can be adjusted from the SCADA faceplate

APC MVs for APC-J154-G2700C				
Description	ID	EU	Low	High

3.4) Disturbance Variables

The following table lists the relevant disturbance variables for this controller along with their engineering units.

APC DVs for APC-J154-G2700C		
Description	ID	EU

3.5) Objectives and KPI's

Objectives For Apc-J154-G2700c				
Measure	Goal	Owner	KPI	Weight
CNVYR-J153-G2100.MEAS_ORE-TO-MARKET	MAXIMIZE	APC-CUSTODIAN	false	1

4) CONTROL TECHNOLOGIES

4.1) Expert Rule Based Control

4.2) Fuzzy Control

4.2.1) Fuzzy Sets

4.2.1.1) Fuzzy Sets For ONVYR-J154-G2700.RECYCLE-WEIGHTOMETER

There are no fuzzy sets for the tertiary crushing circuit recycle mass flow (J154-G2700.RECYCLE-WEIGHTOMETER). This reading is used by the model predictive controller as a control variable (CV).

4.2.1.2) Fuzzy Sets For ONVYR-J154-G2700.CURRENT

4.2.1.3) Fuzzy Sets For ONVYR-J154-G2700.RECIRC-PERC

4.2.1.4) Fuzzy Sets For ONVYR-J154-G2800.CURRENT

There are no fuzzy sets for the screens (J141-G2110 and J141-G2120) under size conveyor (J154-G2800) motor current (J154-G2868). This reading is used by the model predictive controller as a control variable (CV).

4.2.1.5) Fuzzy Sets For ONVYR-J154-G2900.CURRENT

The screens (J142-G2110 and J142-G2120) under size (-25mm) conveyor (J154-G2800) motor current (J154-G2868 Current) is used by the model predictive controller as a control variable (CV).

4.2.1.6) Fuzzy Sets For ONVYR-J154-G3000.CURRENT

There are no fuzzy sets for the JIG stockpile feed conveyor (J154-G3000) motor current (Tertiary Crusher Conveyor J154-G3000 Current). This reading is used by the model predictive controller as a control variable (CV).

4.2.1.7) Fuzzy Sets For ONVYR-J154-G3000.TOTAL-PRODUCT-WEIGHTOMETER

4.2.1.8) Fuzzy Sets For ONVYR-J154-G3000.WEIGHTOMETER

4.2.2) Defuzzy Function

4.3) Model Based Control

4.4) Model Predictive Control (MPC)

4.4.1) Model Matrix: PROFIT-CONTROLLER - J154-G2700C

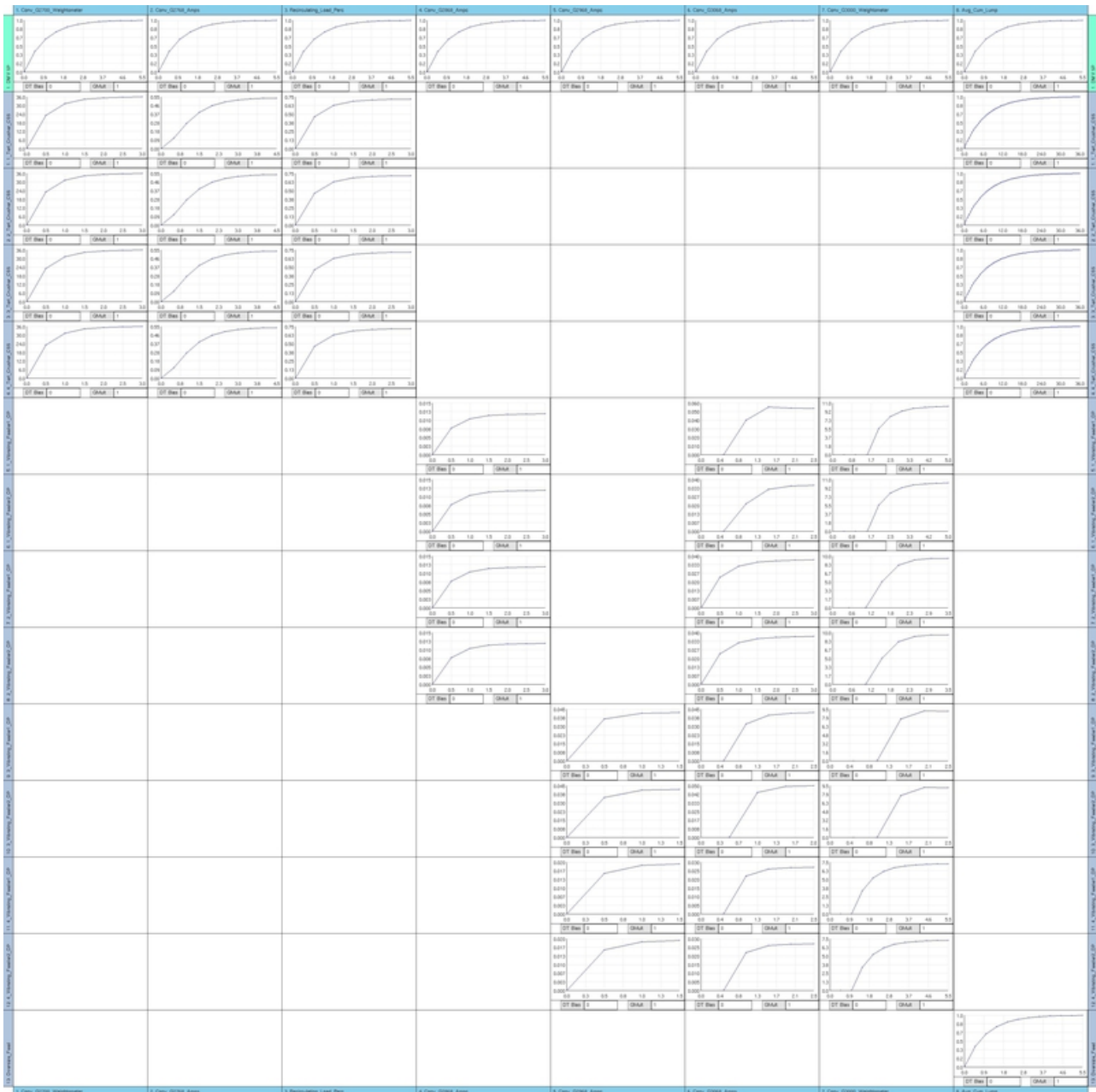
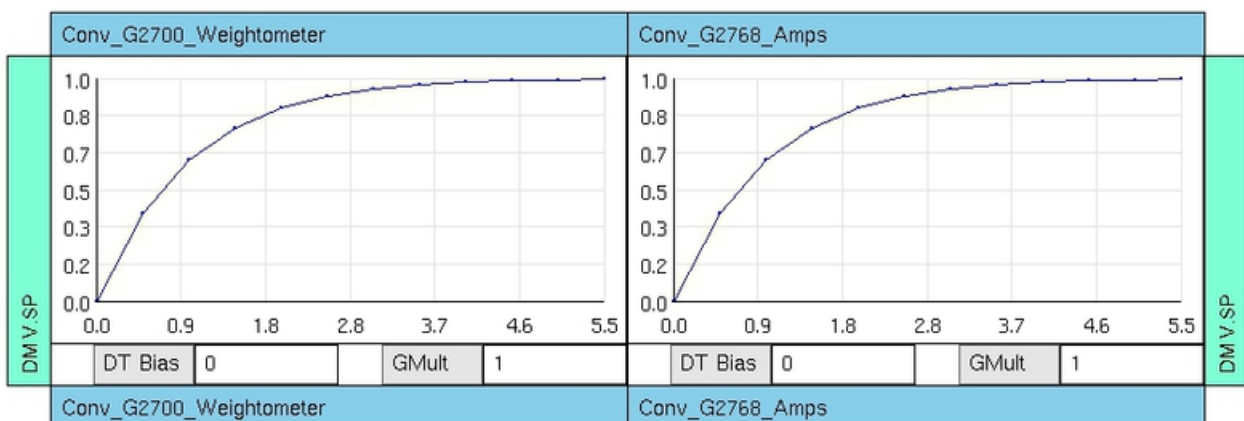
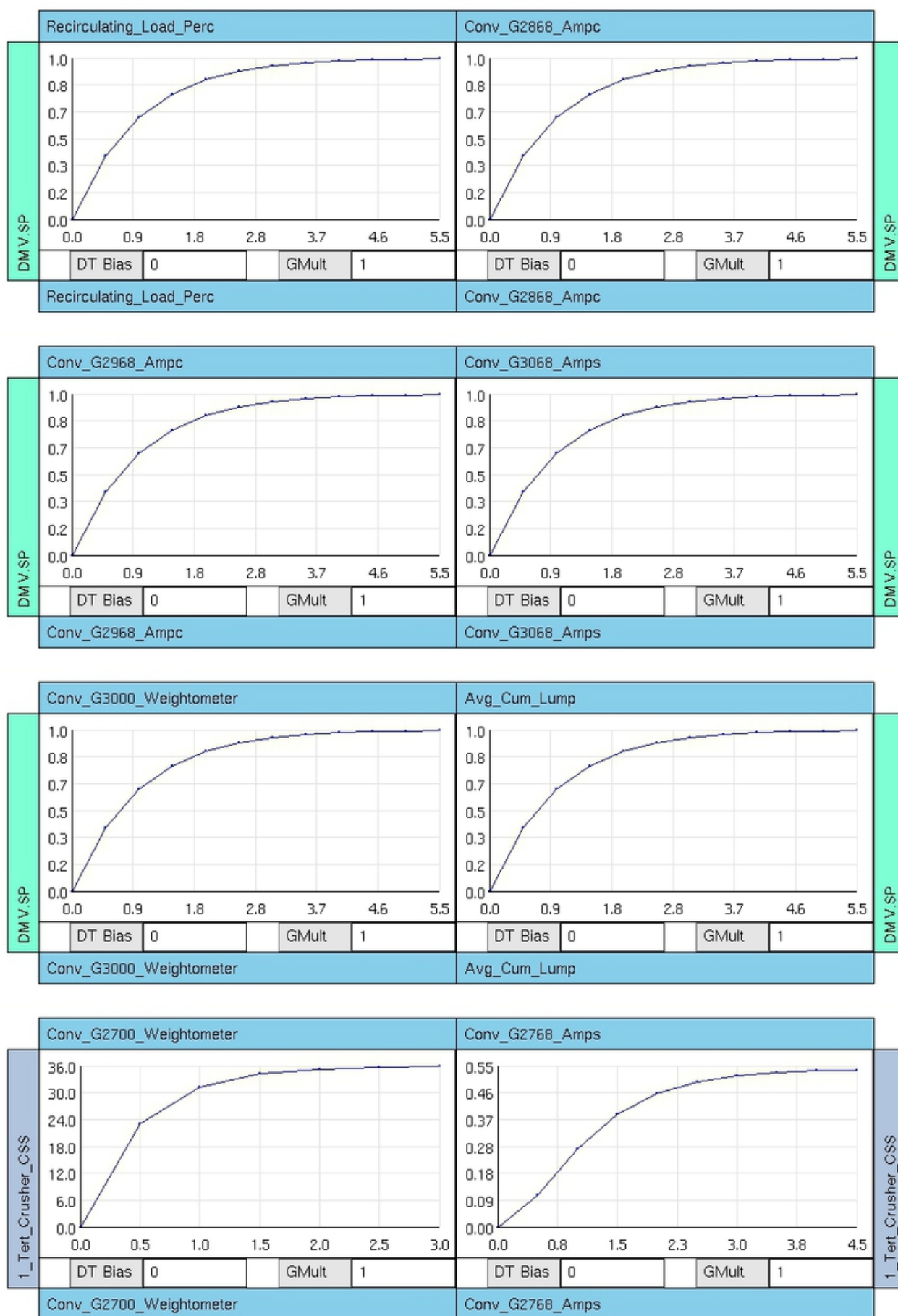
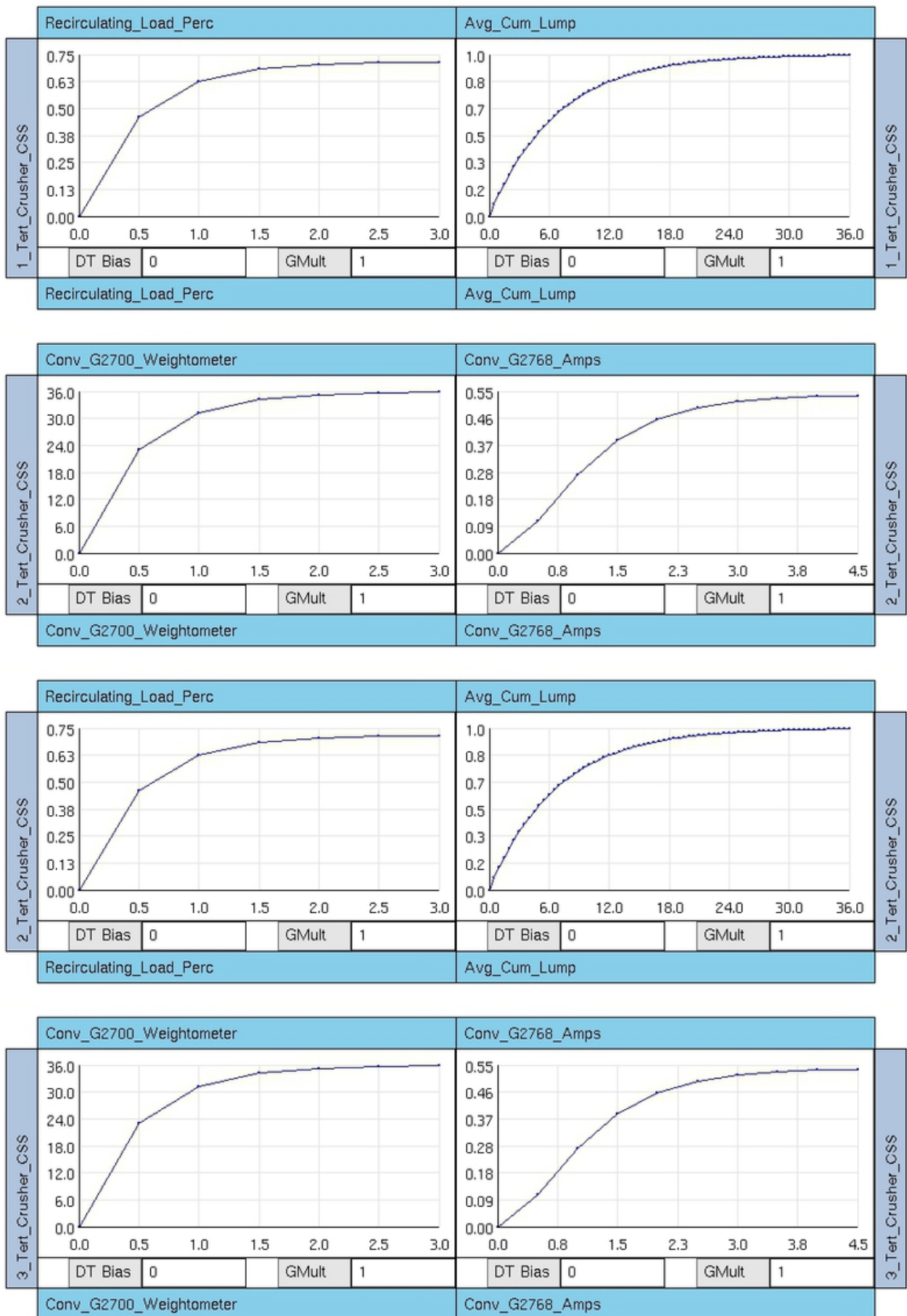
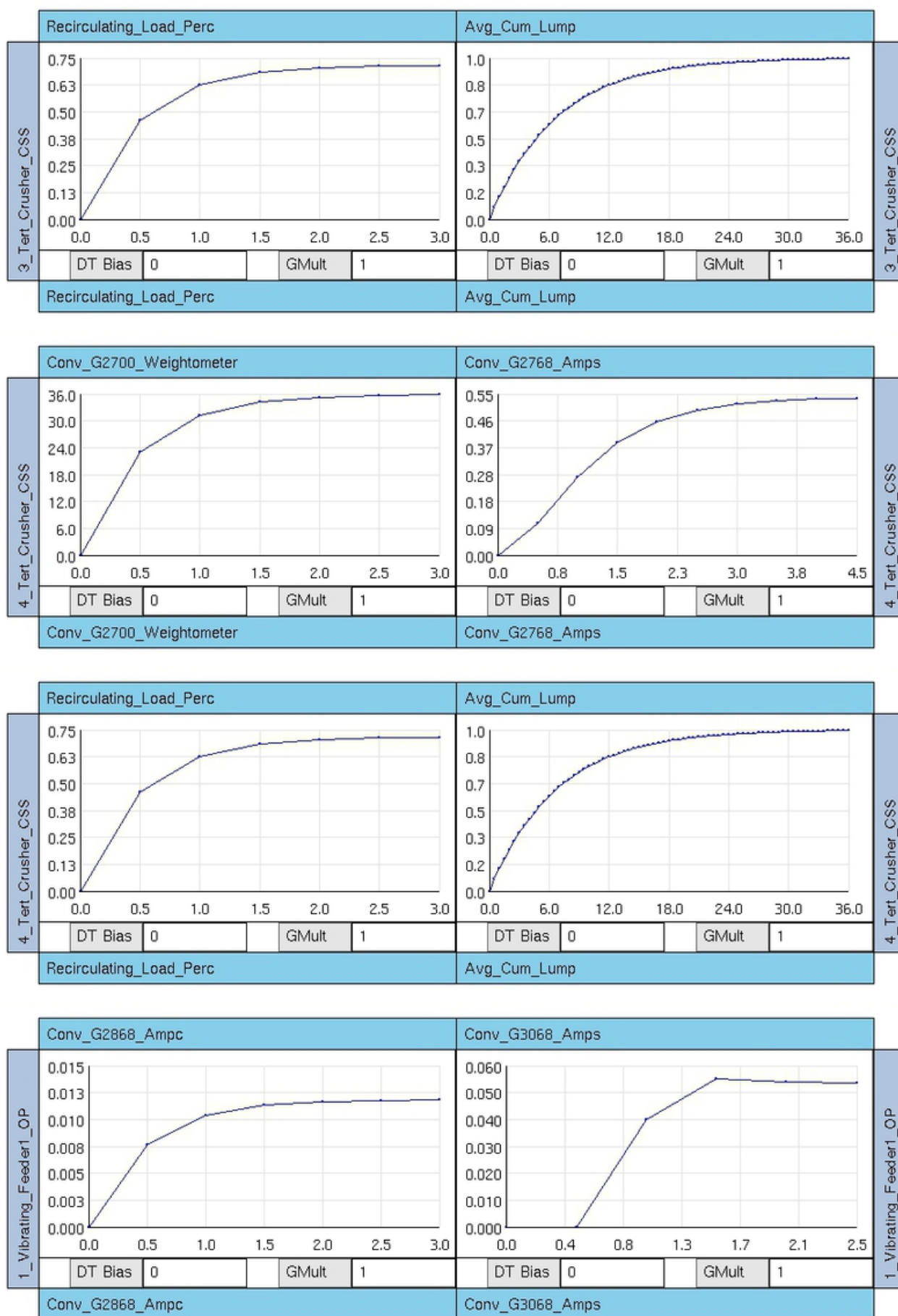


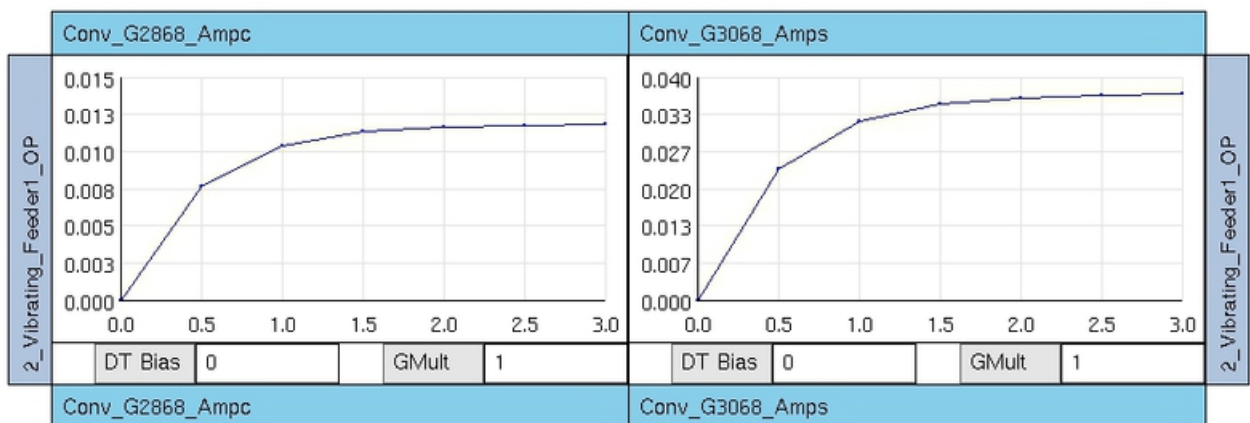
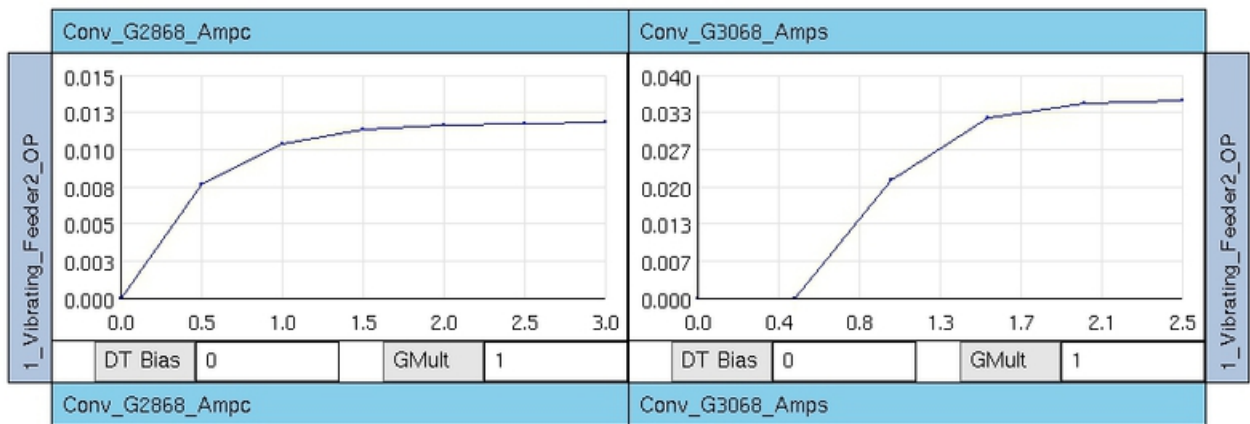
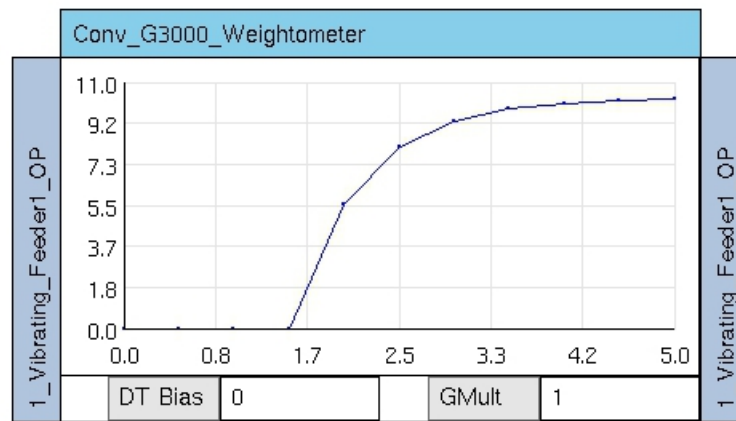
Fig 4: Model Matrix: PROFIT-CONTROLLER - J154-G2700C

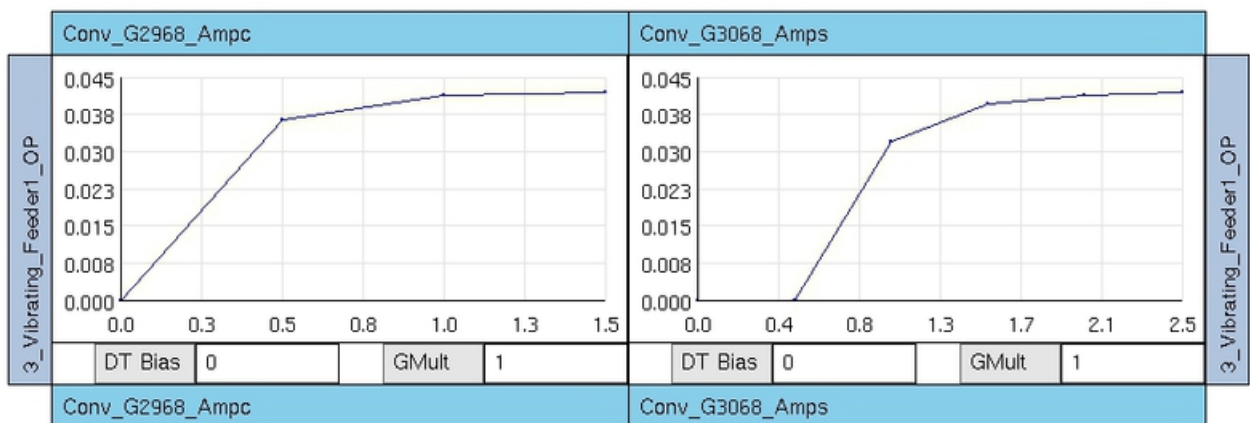
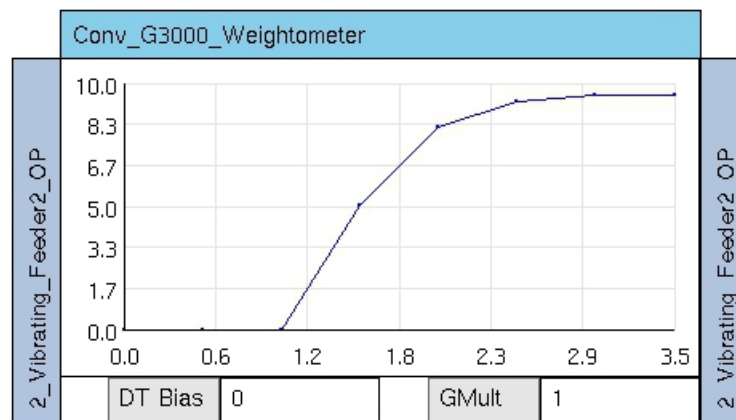
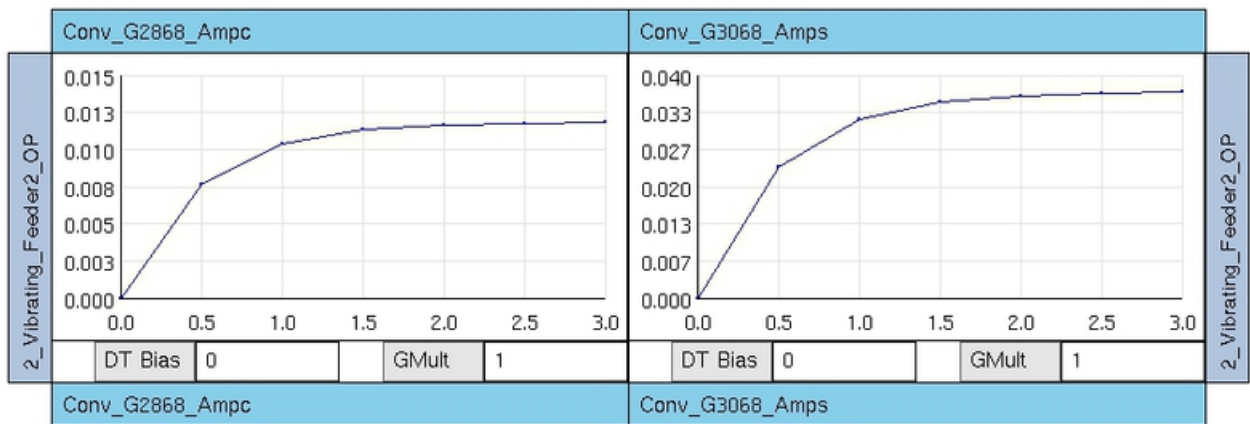


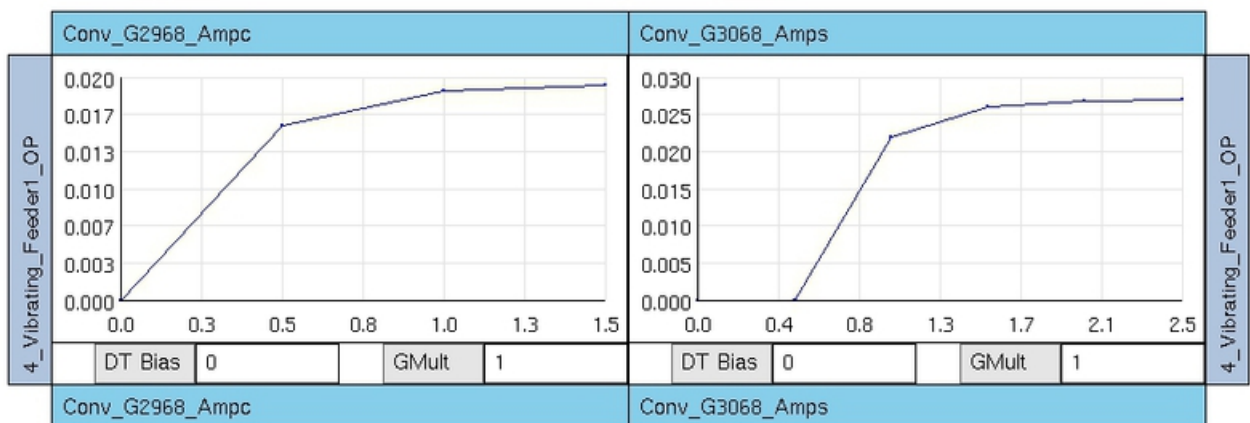
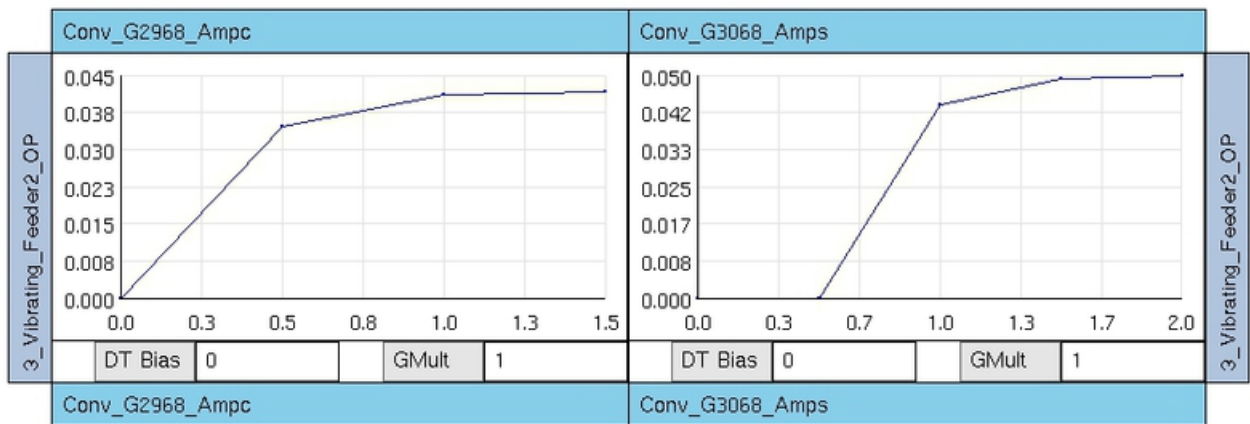


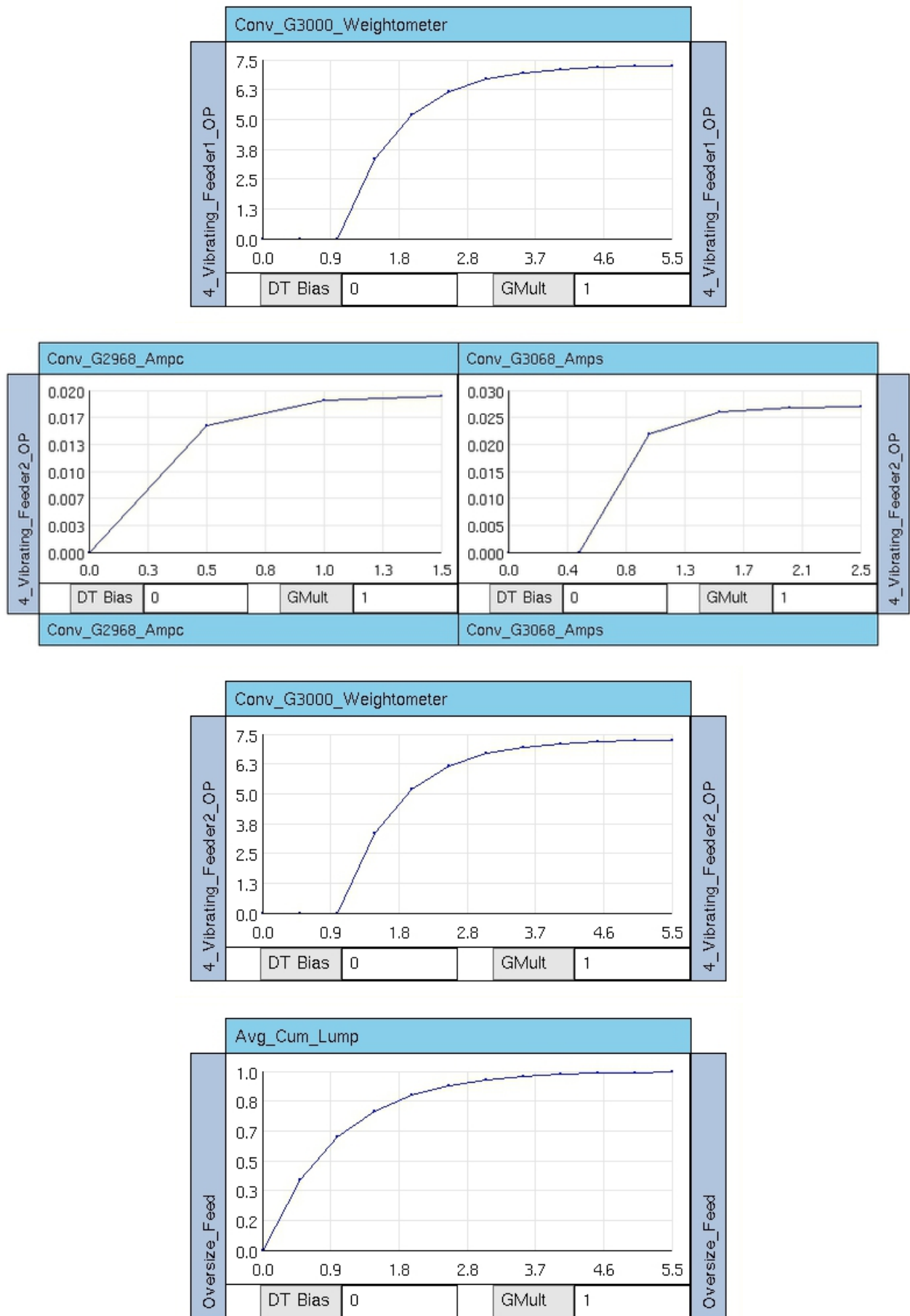












5) HEARTBEATS

Heartbeats

Name	Type	Parameter	Update Interval
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6) TAG LISTING

6.1) APC Tags

6.1.1) GSI Interface: IDX_COMMON

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.OBJECTIVE	
SIS-JIG.SEP.APC-J154-G2700C.OBJECTIVE-BEST-PERF	
SIS-JIG.SEP.APC-J154-G2700C.PROCESS-RUN-SIGNAL	

6.2) CV1 Tags

6.2.1) GSI Interface: IDX_SIS_EXPERT_22583_JIG_T_CRUSHING

Tag	OPC Tag
SIS-JIG.SEP.CNVYR-J154-G2700.RECYCLE-WEIGHTOMETER.HH	G02M100.G02M100.DB940;REAL460
SIS-JIG.SEP.CNVYR-J154-G2700.RECYCLE-WEIGHTOMETER.LL	G02M100.G02M100.DB940;REAL468
SIS-JIG.SEP.CNVYR-J154-G2700.RECYCLE-WEIGHTOMETER.PV	JIG_Galaxy.J140_DIAG01.TC_RECIRC_RATE

6.3) CV2 Tags

6.3.1) GSI Interface: IDX_SIS_EXPERT_22583_JIG_T_CRUSHING

Tag	OPC Tag
SIS-JIG.SEP.CNVYR-J154-G2700.CURRENT.HH	G02M100.G02M100.DB942;REAL436
SIS-JIG.SEP.CNVYR-J154-G2700.CURRENT.LL	G02M100.G02M100.DB942;REAL444
SIS-JIG.SEP.CNVYR-J154-G2700.CURRENT.PV	JIG_Galaxy.J154G2768_T25.S_Current

6.4) CV3 Tags

6.4.1) GSI Interface: IDX_SIS_EXPERT_22583_JIG_T_CRUSHING

Tag	OPC Tag
SIS-JIG.SEP.CNVYR-J154-G2700.RECIRC-PERC.HH	G02M100.G02M100.DB940;REAL714
SIS-JIG.SEP.CNVYR-J154-G2700.RECIRC-PERC.LL	G02M100.G02M100.DB940;REAL722
SIS-JIG.SEP.CNVYR-J154-G2700.RECIRC-PERC.PV	G02M100.G02M100.DB940;REAL96

6.5) CV4 Tags

6.5.1) GSI Interface: IDX_SIS_EXPERT_22583_JIG_T_CRUSHING

Tag	OPC Tag
SIS-JIG.SEP.CNVYR-J154-G2800.CURRENT.HH	G02M100.G02M100.DB932;REAL678
SIS-JIG.SEP.CNVYR-J154-G2800.CURRENT.INT-HI	JIG_Galaxy.J141LIC002_004C_MVC2.PV1_H
SIS-JIG.SEP.CNVYR-J154-G2800.CURRENT.INT-LO	JIG_Galaxy.J141LIC002_004C_MVC2.PV1_L
SIS-JIG.SEP.CNVYR-J154-G2800.CURRENT.LL	G02M100.G02M100.DB932;REAL686
SIS-JIG.SEP.CNVYR-J154-G2800.CURRENT.PV	G02M100.G02M100.DB932;REAL18

6.6) CV5 Tags

6.6.1) GSI Interface: IDX_SIS_EXPERT_22583_JIG_T_CRUSHING

Tag	OPC Tag
SIS-JIG.SEP.CNVYR-J154-G2900.CURRENT.HH	G02M100.G02M100.DB934;REAL678
SIS-JIG.SEP.CNVYR-J154-G2900.CURRENT.INT-HI	JIG_Galaxy.J143LIC002_004C_MVC2.PV1_H
SIS-JIG.SEP.CNVYR-J154-G2900.CURRENT.INT-LO	JIG_Galaxy.J143LIC002_004C_MVC2.PV1_L

SIS-JIG.SEP.CNVYR-J154-G2900.CURRENT.LL	G02M100.G02M100.DB934;REAL686
SIS-JIG.SEP.CNVYR-J154-G2900.CURRENT.PV	G02M100.G02M100.DB934;REAL18

6.7) CV6 Tags

6.7.1) GSI Interface: IDX_SIS_EXPERT_22583_JIG_T_CRUSHING

Tag	OPC Tag
SIS-JIG.SEP.CNVYR-J154-G3000.CURRENT.HH	G02M100.G02M100.DB903;REAL690
SIS-JIG.SEP.CNVYR-J154-G3000.CURRENT.INT-HI	JIG_Galaxy.J141LIC002_004C_MVC2.PV2_H
SIS-JIG.SEP.CNVYR-J154-G3000.CURRENT.INT-LO	JIG_Galaxy.J141LIC002_004C_MVC2.PV2_L
SIS-JIG.SEP.CNVYR-J154-G3000.CURRENT.LL	G02M100.G02M100.DB903;REAL698
SIS-JIG.SEP.CNVYR-J154-G3000.CURRENT.PV	G02M100.G02M100.DB932;REAL44

6.8) CV7 Tags

6.8.1) GSI Interface: IDX_SIS_EXPERT_22583_JIG_T_CRUSHING

Tag	OPC Tag
SIS-JIG.SEP.CNVYR-J154-G3000.TOTAL-PRODUCT-WEIGHTOMETER.HH	G02M100.G02M100.DB903;REAL702
SIS-JIG.SEP.CNVYR-J154-G3000.TOTAL-PRODUCT-WEIGHTOMETER.LL	G02M100.G02M100.DB903;REAL610
SIS-JIG.SEP.CNVYR-J154-G3000.TOTAL-PRODUCT-WEIGHTOMETER.PV	G02M100.G02M100.DB932;REAL70

6.9) PROFIT-CONTROLLER Tags

6.9.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT.CONTROL-RESTART	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Control Restart.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT.DEMAND	(J154-G2700C)/\$J154-G2700C/J154-G2700C/urtDemand.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT.HB	(J154-G2700C)/\$J154-G2700C/J154-G2700C/urtIntervalCount.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT.URT-COUNTDOWN	(J154-G2700C)/\$J154-G2700C/J154-G2700C/urtCountdown.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT.URT-EXEC-STATE	(J154-G2700C)/\$J154-G2700C/J154-G2700C/urtExecState.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CTRL-MODE	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Controller Mode.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DISPLAY-STATUS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Displayed Status.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_MPC-STATE	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MPC_State.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_ON-OFF-TOGGLE	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Turn ON OFF.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_OPT-ACC-TOL	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Opt Acceleration Tol.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_OPT-SPEED-FACTOR	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Optimizer Speed Factor.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_READ-MODEL-FLAG	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Read Model Flag.InternalValue

6.10) PROFIT-CONTROLLER-CV1 Tags

6.10.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.BALANCE-FACTOR	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2700_Weightometer/Balance Factor Value.Value
SIS-JIG.SEP.APC-J154-	(J154-G2700C)/\$J154-G2700C/J154-

G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.CLOSED-LOOP-RESP-TIME	G2700C/ProfCon/CV/Conv_G2700_Weightometer/Closed Loop Resp Time.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.DV1.DTBIAS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias Value[1]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.DV1.GMULT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[1]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.DV2.DTBIAS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias Value[2]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.DV2.GMULT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[2]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.DV3.DTBIAS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias Value[3]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.DV3.GMULT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[3]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.DV4.DTBIAS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias Value[4]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.DV4.GMULT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[4]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.ENABLED	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2700_Weightometer/Control This CV.Internal Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.FF-TO-FB-PERF-RATIO	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2700_Weightometer/FF to FB Perf Ratio.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.FUTURE-VALUE	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2700_Weightometer/Future Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.HIGH-LIMIT-DELTA	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2700_Weightometer/Delta Soft High Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.HIGH-LIMIT-SLOT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2700_Weightometer/High Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.HIGH-LIMIT-WEIGHT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2700_Weightometer/High Limit Error Weight.Value
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SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.LIMIT-VIOLATION	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2700_Weightometer/Read Value.Color
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.LINEAR-COEFF	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2700_Weightometer/Linear Coeff.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.LOVLIMIT-DELTA	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2700_Weightometer/Delta Soft Low Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.LOVLIMIT-SLOT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2700_Weightometer/Low Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.LOVLIMIT-WEIGHT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2700_Weightometer/Low Limit Error Weight.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.MV1.DTBIAS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias Value[0]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.MV1.GMULT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[0]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.NUMBER-OF-BLOCKS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2700_Weightometer/Number of Blocks.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.PERF-RATIO	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2700_Weightometer/Perf Ratio.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.PV	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2700_Weightometer/Read Value DCS.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.SS-	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2700_Weightometer/SS

VALUE	Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.STATE-ESTIMATION	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2700_Weightometer/State Estimation.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.TARGET	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2700_Weightometer/Desired Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2700_WEIGHTOMETER.TARGET-WEIGHT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2700_Weightometer/Quadratic Coeff.Value

6.11) PROFIT-CONTROLLER-CV2 Tags

6.11.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.BALANCE-FACTOR	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/Balance Factor Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.CLOSED-LOOP-RESP-TIME	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/Closed Loop Resp Time.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.DV1.DTBIAS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[6]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.DV1.GMULT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[6]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.DV2.DTBIAS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[7]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.DV2.GMULT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[7]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.DV3.DTBIAS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[8]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.DV3.GMULT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[8]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.DV4.DTBIAS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[9]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.DV4.GMULT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[9]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.ENABLED	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/Control This CV.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.FF-TO-FB-PERF-RATIO	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/FF to FB Perf Ratio.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.FUTURE-VALUE	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/Future Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.HIGH-LIMIT-DELTA	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/Delta Soft High Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.HIGH-LIMIT-SLOT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/High Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.HIGH-LIMIT-WEIGHT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/High Limit Error Weight.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.INTEGRATING	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/Model type.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.LIMIT-VIOLATION	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/Read Value.Color
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.LINEAR-COEFF	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/Linear Coeff.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.LOW-LIMIT-DELTA	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/Delta Soft Low Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.LOW-LIMIT-SLOT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/Low Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.LOW-LIMIT-WEIGHT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/Low Limit Error

	Weight.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.MV1.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[5]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.MV1.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[5]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.NUMBER-OF-BLOCKS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/Number of Blocks.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.PERF-RATIO	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/Perf Ratio.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.PV	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/Read Value DCS.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.SS-VALUE	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/SS Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.STATE-ESTIMATION	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/State Estimation.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.TARGET	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/Desired Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2768_AMPS.TARGET-WEIGHT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2768_Amps/Quadratic Coeff.Value

6.12) PROFIT-CONTROLLER-CV3 Tags

6.12.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.BALANCE-FACTOR	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/Balance Factor Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.CLOSED-LOOP-RESP-TIME	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/Closed Loop Resp Time.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.DV1.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[11]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.DV1.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[11]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.DV2.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[12]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.DV2.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[12]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.DV3.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[13]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.DV3.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[13]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.DV4.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[14]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.DV4.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[14]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.ENABLED	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/Control This CV.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.FF-TO-FB-PERF-RATIO	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/FF to FB Perf Ratio.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.FUTURE-VALUE	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/Future Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.HIGH-LIMIT-DELTA	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/Delta Soft High Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.HIGH-LIMIT-SLOT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/High Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.HIGH-LIMIT-WEIGHT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/High Limit Error Weight.Value

SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.INTEGRATING	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/Model type.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.LIMIT-VIOLATION	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/Read Value.Color
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.LINEAR-COEFF	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/Linear Coeff.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.LOW-LIMIT-DELTA	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/Delta Soft Low Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.LOW-LIMIT-SLOT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/Low Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.LOW-LIMIT-WEIGHT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/Low Limit Error Weight.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.MV1.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[10]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.MV1.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[10]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.NUMBER-OF-BLOCKS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/Number of Blocks.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.PERF-RATIO	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/Perf Ratio.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.PV	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/Read Value DCS.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.SS-VALUE	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/SS Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.STATE-ESTIMATION	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/State Estimation.Internal Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.TARGET	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/Desired Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_RECIRCULATING_LOAD_PERC.TARGET-WEIGHT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Recirculating_Load_Perc/Quadratic Coeff.Value

6.13) PROFIT-CONTROLLER-CV4 Tags

6.13.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.BALANCE-FACTOR	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/Balance Factor Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.CLOSED-LOOP-RESP-TIME	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/Closed Loop Resp Time.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.DV5.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[16]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.DV5.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[16]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.DV6.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[17]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.DV6.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[17]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.DV7.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[18]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.DV7.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[18]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.DV8.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[19]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.DV8.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain

	Multiplier.Value[19]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.ENABLED	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/Control This CV.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.FF-TO-FB-PERF-RATIO	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/FF to FB Perf Ratio.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.FUTURE-VALUE	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/Future Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.HIGH-LIMIT-DELTA	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/Delta Soft High Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.HIGH-LIMIT-SLOT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/High Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.HIGH-LIMIT-WEIGHT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/High Limit Error Weight.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.INTEGRATING	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/Model type.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.LIMIT-VIOLATION	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/Read Value.Color
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.LINEAR-COEFF	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/Linear Coeff.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.LOW-LIMIT-DELTA	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/Delta Soft Low Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.LOW-LIMIT-SLOT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/Low Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.LOW-LIMIT-WEIGHT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/Low Limit Error Weight.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.MV1.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[15]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.MV1.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[15]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.NUMBER-OF-BLOCKS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/Number of Blocks.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.PERF-RATIO	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/Perf Ratio.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.PV	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/Read Value DCS.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.SS-VALUE	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/SS Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.STATE-ESTIMATION	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/State Estimation.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.TARGET	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/Desired Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2868_AMPC.TARGET-WEIGHT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2868_Ampc/Quadratic Coeff.Value

6.14) PROFIT-CONTROLLER-CV5 Tags

6.14.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.BALANCE-FACTOR	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/Balance Factor Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.CLOSED-LOOP-RESP-TIME	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/Closed Loop Resp Time.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.DV10.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[22]
	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain

SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.DV10.GMULT	Multiplier.Value[22]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.DV11.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[23]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.DV11.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[23]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.DV12.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[24]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.DV12.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[24]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.DV9.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[21]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.DV9.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[21]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.ENABLED	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/Control This CV.Internal Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.FF-TO-FB-PERF-RATIO	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/FF to FB Perf Ratio.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.FUTURE-VALUE	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/Future Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.HIGHLIMIT-DELTA	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/Delta Soft High Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.HIGHLIMIT-SLOT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/High Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.HIGHLIMIT-WEIGHT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/High Limit Error Weight.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.INTEGRATING	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/Model type.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.LIMIT-VIOLATION	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/Read Value.Color
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.LINEAR-COEFF	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/Linear Coeff.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.LO WLIMIT-DELTA	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/Delta Soft Low Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.LO WLIMIT-SLOT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/Low Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.LO WLIMIT-WEIGHT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/Low Limit Error Weight.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.MV1.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[20]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.MV1.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[20]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.NUMBER-OF-BLOCKS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/Number of Blocks.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.PERF-RATIO	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/Perf Ratio.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.PV	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/Read Value DCS.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.SS-VALUE	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/SS Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.STATE-ESTIMATION	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/State Estimation.Internal Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.TARGET	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/Desired Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G2968_AMPC.TARGET-WEIGHT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G2968_Ampc/Quadratic Coeff.Value

6.15) PROFIT-CONTROLLER-CV6 Tags

6.15.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.BALANCE-FACTOR	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/Balance Factor Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.CLOSED-LOOP-RESP-TIME	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/Closed Loop Resp Time.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.DV10.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[31]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.DV10.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[31]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.DV11.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[32]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.DV11.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[32]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.DV12.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[33]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.DV12.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[33]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.DV5.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[26]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.DV5.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[26]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.DV6.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[27]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.DV6.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[27]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.DV7.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[28]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.DV7.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[28]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.DV8.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[29]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.DV8.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[29]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.DV9.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[30]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.DV9.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[30]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.ENABLED	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/Control This CV.Internal Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.FF-TO-FB-PERF-RATIO	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/FF to FB Perf Ratio.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.FUTURE-VALUE	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/Future Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.HIGH-LIMIT-DELTA	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/Delta Soft High Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.HIGH-LIMIT-SLOT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/High Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.HIGH-LIMIT-WEIGHT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/High Limit Error Weight.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.INTEGRATING	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/Model type.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.LIMIT-VIOLATION	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/Read Value.Color
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.LINEAR-COEFF	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/Linear Coeff.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.LOW-LIMIT-DELTA	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/Delta Soft Low Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.LOW-LIMIT-SLOT	(J154-G2700C)\$J154-G2700C/J154-

	G2700C/ProfCon/CV/Conv_G3068_Amps/Low Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.LOWLIMIT-WEIGHT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/Low Limit Error Weight.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.MV1.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[25]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.MV1.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[25]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.NUMBER-OF-BLOCKS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/Number of Blocks.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.PERF-RATIO	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/Perf Ratio.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.PV	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/Read Value DCS.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.SS-VALUE	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/SS Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.STATE-ESTIMATION	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/State Estimation.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.TARGET	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/Desired Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3068_AMPS.TARGET-WEIGHT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3068_Amps/Quadratic Coeff.Value

6.16) PROFIT-CONTROLLER-CV7 Tags

6.16.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.BALANCE-FACTOR	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/Balance Factor Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.CLOSED-LOOP-RESP-TIME	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/Closed Loop Resp Time.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.DV10.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias Value[40]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.DV10.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[40]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.DV11.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias Value[41]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.DV11.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[41]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.DV12.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias Value[42]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.DV12.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[42]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.DV5.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias Value[35]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.DV5.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[35]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.DV6.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias Value[36]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.DV6.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[36]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.DV7.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias Value[37]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.DV7.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[37]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.DV8.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias Value[38]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.DV8.GMULT	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[38]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.DV9.DTBIAS	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias Value[39]

SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.DV9.GMULT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[39]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.ENABLED	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/Control This CV.Internal Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.FF-TO-FB-PERF-RATIO	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/FF to FB Perf Ratio.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.FUTURE-VALUE	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/Future Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.HIGH-LIMIT-DELTA	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/Delta Soft High Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.HIGH-LIMIT-SLOT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/High Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.HIGH-LIMIT-WEIGHT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/High Limit Error Weight.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.INTEGRATING	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/Model type.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.LIMIT-VIOLATION	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/Read Value.Color
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.LINEAR-COEFF	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/Linear Coeff.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.LOW-LIMIT-DELTA	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/Delta Soft Low Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.LOW-LIMIT-SLOT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/Low Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.LOW-LIMIT-WEIGHT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/Low Limit Error Weight.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.MV1.DTBIAS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias Value[34]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.MV1.GMULT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[34]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.NUMBER-OF-BLOCKS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/Number of Blocks.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.PERF-RATIO	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/Perf Ratio.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.PV	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/Read Value DCS.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.SS-VALUE	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/SS Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.STATE-ESTIMATION	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/State Estimation.Internal Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.TARGET	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/Desired Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_CONV_G3000_WEIGHTOMETER.TARGET-WEIGHT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Conv_G3000_Weightometer/Quadratic Coeff.Value

6.17) PROFIT-CONTROLLER-CV8 Tags

6.17.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.BALANCE-FACTOR	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/Balance Factor Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.CLOSED-LOOP-RESP-TIME	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/Closed Loop Resp Time.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.DV1.DTBIAS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[44]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.DV1.GMULT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[44]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.DV13.DTBIAS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[48]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.DV13.GMULT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[48]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.DV2.DTBIAS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[45]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.DV2.GMULT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[45]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.DV3.DTBIAS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[46]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.DV3.GMULT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[46]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.DV4.DTBIAS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[47]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.DV4.GMULT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[47]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.ENABLED	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/Control This CV.Internal Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.FF-TO-FB-PERF-RATIO	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/FF to FB Perf Ratio.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.FUTURE-VALUE	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/Future Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.HIGH-LIMIT-DELTA	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/Delta Soft High Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.HIGH-LIMIT-SLOT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/High Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.HIGH-LIMIT-WEIGHT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/High Limit Error Weight.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.INTEGRATING	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/Model type.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.LIMIT-VIOLATION	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/Read Value.Color
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.LINEAR-COEFF	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/Linear Coeff.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.LOW-LIMIT-DELTA	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/Delta Soft Low Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.LOW-LIMIT-SLOT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/Low Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.LOW-LIMIT-WEIGHT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/Low Limit Error Weight.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.MV1.DTBIAS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Dead Time Bias.Value[43]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.MV1.GMULT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/Gain Multiplier.Value[43]
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.NUMBER-OF-BLOCKS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/Number of Blocks.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.PERF-RATIO	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/Perf Ratio.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.PV	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/Read Value DCS.Value
	(J154-G2700C)/\$J154-G2700C/J154-

SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.SS-VALUE	G2700C/ProfCon/CV/Avg_Cum_Lump/SS Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.STATE-ESTIMATION	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/State Estimation.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.TARGET	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/Desired Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_AVG_CUM_LUMP.TARGET-WEIGHT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/CV/Avg_Cum_Lump/Quadratic Coeff.Value

6.18) PROFIT-CONTROLLER-MV1 Tags

6.18.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.APC-SP	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Sent Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.CONSTRAINT-TYPE	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Constraint Type.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.DELTA-SOFT-HIGHLIMIT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Delta Soft High Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.DELTA-SOFT-LOWLIMIT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Delta Soft Low Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.ENABLED	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Use This MV.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.HIGHLIMIT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/High Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.LIMIT-VIOLATION	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Read Value.Color
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.LINEAR-COEFF	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Linear Coeff.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.LOWLIMIT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Low Limit.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.MAIN-CV	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/SSMove Main CV.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.MAX-MOVE-DOWN	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Max Move Down.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.MAX-MOVE-UP	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Max Move Up.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.MV-MAN-ACTION	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/MV Man Action.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.NUMBER-OF-BLOCKS	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Number of Blocks.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.OP	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Read OP Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.OP-HIGH	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/OP High Windup.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.OP-HIGH-TRANSITION	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/OP High Transition.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.OP-LOW	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/OP Low Windup.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.OP-LOW-TRANSITION	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/OP Low Transition.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.OP-TO-PV-GAIN	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/OP to PV Gain.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.PB-ANTI-WINDUP-RATIO	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/PB AntiWindup Ratio.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.PV	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Read Process Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.QUADRATIC-COEFF	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Quadratic Coeff.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.RESOLUTION	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Resolution.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.SP	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Read Value.Value
	(J154-G2700C)/\$J154-G2700C/J154-

SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.STATUS	G2700C/ProfCon/MV/DMV_SP/Status.Internal Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.TARGET	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Desired Value.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.USE-ARCHLIMIT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Use Ach Limit.Internal Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.WEIGHT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Weight.Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_DMV.SP.WINDUP-SLOT	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/MV/DMV_SP/Windup Status.Internal Value

6.19) PROFIT-CONTROLLER-DV1 Tags

6.19.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_1_TERT_CRUSHER_CSS.ENABLED	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/DV/1_Tert_Crusher_CSS/Use This DV.Internal Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_1_TERT_CRUSHER_CSS.PV	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/DV/1_Tert_Crusher_CSS/Read Value.Value

6.20) PROFIT-CONTROLLER-DV2 Tags

6.20.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_2_TERT_CRUSHER_CSS.ENABLED	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/DV/2_Tert_Crusher_CSS/Use This DV.Internal Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_2_TERT_CRUSHER_CSS.PV	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/DV/2_Tert_Crusher_CSS/Read Value.Value

6.21) PROFIT-CONTROLLER-DV3 Tags

6.21.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_3_TERT_CRUSHER_CSS.ENABLED	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/DV/3_Tert_Crusher_CSS/Use This DV.Internal Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_3_TERT_CRUSHER_CSS.PV	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/DV/3_Tert_Crusher_CSS/Read Value.Value

6.22) PROFIT-CONTROLLER-DV4 Tags

6.22.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_4_TERT_CRUSHER_CSS.ENABLED	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/DV/4_Tert_Crusher_CSS/Use This DV.Internal Value
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_4_TERT_CRUSHER_CSS.PV	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/DV/4_Tert_Crusher_CSS/Read Value.Value

6.23) PROFIT-CONTROLLER-DV5 Tags

6.23.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_1_VIBRATING_FEEDER1_OP.ENABLED	(J154-G2700C)/\$J154-G2700C/J154-G2700C/ProfCon/DV/1_Vibrating_Feeder1_OP/Use This DV.Internal Value

SIS-JIG.SEP.APC-J154-G2700C.PROFIT_1_VIBRATING_FEEDER1_OP.PV	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/DV/1_Vibrating_Feeder1_OP/Read Value.Value
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6.24) PROFIT-CONTROLLER-DV6 Tags

6.24.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_1_VIBRATING_FEEDER2_OP.ENABLED	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/DV/1_Vibrating_Feeder2_OP/Use This DV.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_1_VIBRATING_FEEDER2_OP.PV	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/DV/1_Vibrating_Feeder2_OP/Read Value.Value

6.25) PROFIT-CONTROLLER-DV7 Tags

6.25.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_2_VIBRATING_FEEDER1_OP.ENABLED	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/DV/2_Vibrating_Feeder1_OP/Use This DV.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_2_VIBRATING_FEEDER1_OP.PV	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/DV/2_Vibrating_Feeder1_OP/Read Value.Value

6.26) PROFIT-CONTROLLER-DV8 Tags

6.26.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_2_VIBRATING_FEEDER2_OP.ENABLED	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/DV/2_Vibrating_Feeder2_OP/Use This DV.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_2_VIBRATING_FEEDER2_OP.PV	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/DV/2_Vibrating_Feeder2_OP/Read Value.Value

6.27) PROFIT-CONTROLLER-DV9 Tags

6.27.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_3_VIBRATING_FEEDER1_OP.ENABLED	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/DV/3_Vibrating_Feeder1_OP/Use This DV.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_3_VIBRATING_FEEDER1_OP.PV	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/DV/3_Vibrating_Feeder1_OP/Read Value.Value

6.28) PROFIT-CONTROLLER-DV10 Tags

6.28.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_3_VIBRATING_FEEDER2_OP.ENABLED	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/DV/3_Vibrating_Feeder2_OP/Use This DV.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_3_VIBRATING_FEEDER2_OP.PV	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/DV/3_Vibrating_Feeder2_OP/Read Value.Value

Value.Value

6.29) PROFIT-CONTROLLER-DV11 Tags

6.29.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_4_VIBRATING_FEEDER1_OP.ENABLED	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/DV/4_Vibrating_Feeder1_OP/Use This DV.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_4_VIBRATING_FEEDER1_OP.PV	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/DV/4_Vibrating_Feeder1_OP/Read Value.Value

6.30) PROFIT-CONTROLLER-DV12 Tags

6.30.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_4_VIBRATING_FEEDER2_OP.ENABLED	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/DV/4_Vibrating_Feeder2_OP/Use This DV.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_4_VIBRATING_FEEDER2_OP.PV	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/DV/4_Vibrating_Feeder2_OP/Read Value.Value

6.31) PROFIT-CONTROLLER-DV13 Tags

6.31.1) GSI Interface: IDX_SIS_MPC_26583_JIG_T_CRUSHING_HONEYWELL

Tag	OPC Tag
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_OVERSIZE_FEED.ENABLED	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/DV/Oversize_Feed/Use This DV.InternalValue
SIS-JIG.SEP.APC-J154-G2700C.PROFIT_OVERSIZE_FEED.PV	(J154-G2700C)\$J154-G2700C/J154-G2700C/ProfCon/DV/Oversize_Feed/Read Value.Value

6.32) OTHER Tags

6.32.1) GSI Interface: IDX_SIS_EXPERT_22583_JIG_T_CRUSHING

Tag	OPC Tag
SIS-JIG.SEP.APC-J141_LIC_002_004C.AUTO-MANUAL-MODE	JIG_Galaxy.J141LIC002_004C_MVC.QON
SIS-JIG.SEP.APC-J142_LIC_002_004C.AUTO-MANUAL-MODE	JIG_Galaxy.J142LIC002_004C_MVC.QON
SIS-JIG.SEP.APC-J143_LIC_002_004C.AUTO-MANUAL-MODE	JIG_Galaxy.J143LIC002_004C_MVC.QON
SIS-JIG.SEP.APC-J144_LIC_002_004C.AUTO-MANUAL-MODE	JIG_Galaxy.J144LIC002_004C_MVC.QON
SIS-JIG.SEP.CNVYR-J153-G2100.WEIGHTOMETER.PV	JIG_Galaxy.J153G2100_T4.S_ProcessValue
SIS-JIG.SEP.CNVYR-J154-G2500.WEIGHTOMETER-02.PV	JIG_Galaxy.J154G2500B_T4.S_ProcessValue
SIS-JIG.SEP.CNVYR-J154-G2500.WEIGHTOMETER-03.PV	JIG_Galaxy.J154G2500A_T4.S_ProcessValue
SIS-JIG.SEP.CNVYR-J154-G2600.WEIGHTOMETER-01.PV	JIG_Galaxy.J154G2600B_T4.S_ProcessValue
SIS-JIG.SEP.CNVYR-J154-G2600.WEIGHTOMETER-02.PV	JIG_Galaxy.J154G2600A_T4.S_ProcessValue
SIS-JIG.SEP.CNVYR-J154-G2700.STATUS.PV	JIG_Galaxy.J154G2768_T25.S_Running
SIS-JIG.SEP.CNVYR-J154-G2800.STATUS.PV	JIG_Galaxy.J154G2868_T1.S_Running
SIS-JIG.SEP.CNVYR-J154-G2900.STATUS.PV	JIG_Galaxy.J154G2968_T1.S_Running
SIS-JIG.SEP.CNVYR-J154-G3000.STATUS.PV	JIG_Galaxy.J154G3068_T25.S_Running

6.32.2) GSI Interface: IDX_SIS_EXPERT_30581_JIG_LYNXX

Tag	OPC Tag
SIS-JIG.SEP.CAM-J141-G3120-LYNXX.PASSING-31.5MM.PV	J141_PSA_sfc12

SIS-JIG.SEP.CAM-J141-G3120-LYNXX.PASSING-8MM.PV	J141_PSA_sfc6
SIS-JIG.SEP.CAM-J142-G3120-LYNXX.PASSING-31.5MM.PV	J142_PSA_sfc12
SIS-JIG.SEP.CAM-J142-G3120-LYNXX.PASSING-8MM.PV	J142_PSA_sfc6
SIS-JIG.SEP.CAM-J143-G3120-LYNXX.PASSING-31.5MM.PV	J143_PSA_sfc12
SIS-JIG.SEP.CAM-J143-G3120-LYNXX.PASSING-8MM.PV	J143_PSA_sfc6
SIS-JIG.SEP.CAM-J144-G3120-LYNXX.PASSING-31.5MM.PV	J144_PSA_sfc12
SIS-JIG.SEP.CAM-J144-G3120-LYNXX.PASSING-8MM.PV	J144_PSA_sfc6
SIS-JIG.SEP.CAM-J153-G2200-LYNXX.PASSING-31.5MM.PV	J153_PSA_sfc12
SIS-JIG.SEP.CAM-J153-G2200-LYNXX.PASSING-8MM.PV	J153_PSA_sfc6

ADDENDUMS

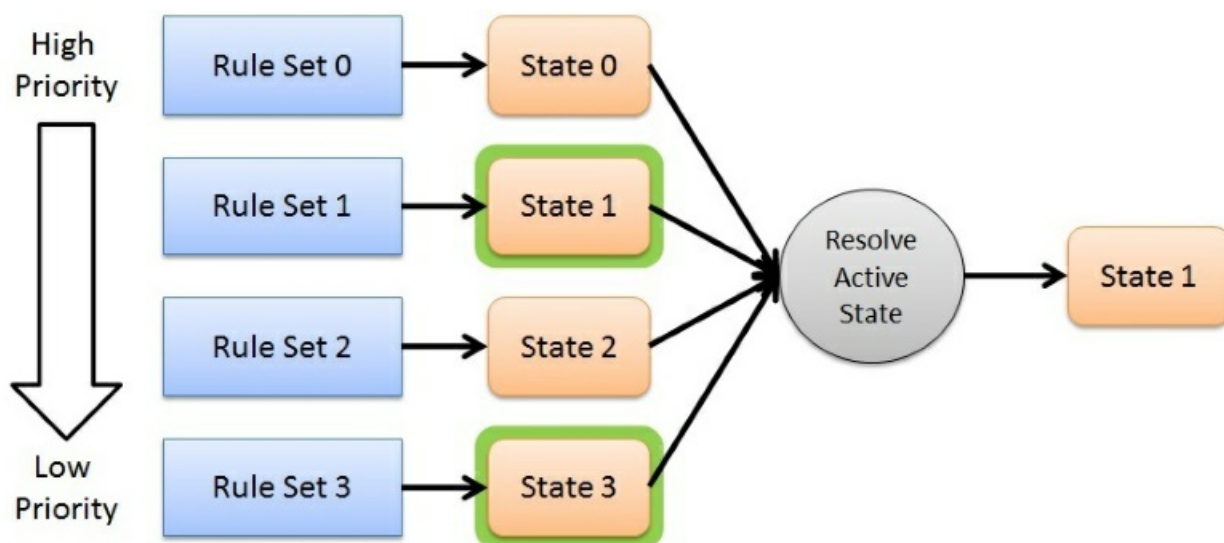
A1 - BASIC PRINCIPLES OF PROCESS STATES

In APET, control philosophies are built around the state of the process. Different process conditions (broadly speaking) require different actions to be taken to achieve performance targets. In APET, process states are resolved through graphical rules and used in a hierarchical bidding system to determine the current process state. The governing state is then used in deciding which control scheme to implement.

These two steps are briefly described below.

1) Active State Resolution

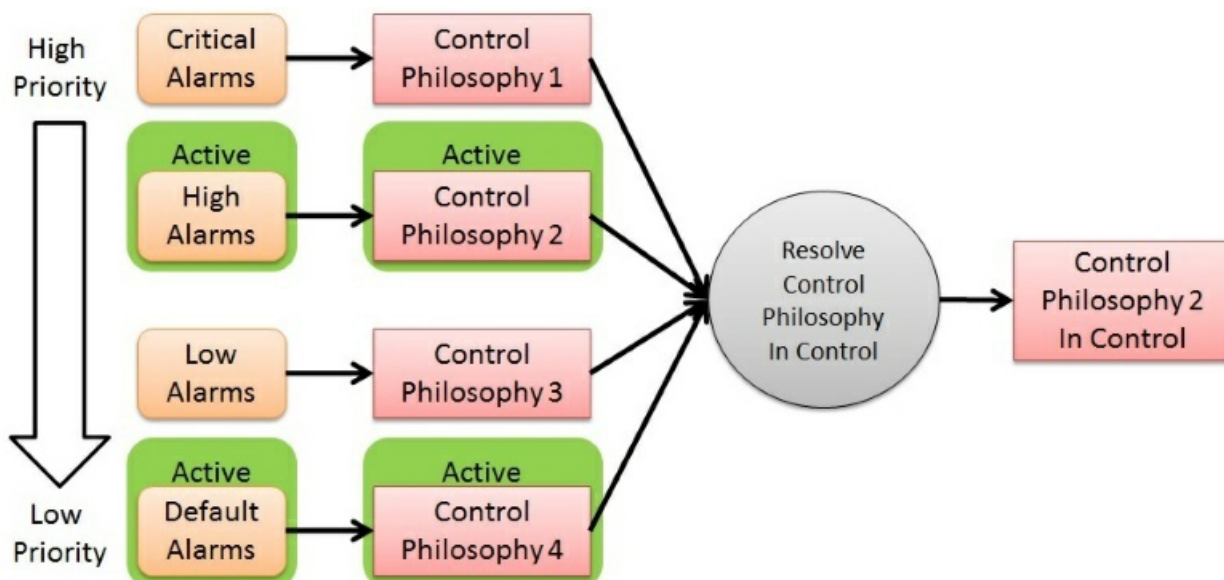
Each state is determined by a set of rules. These are usually built up using graphical rules and may monitor any information available within the APET application. A state is considered active if all specified conditions are met. This means that it is possible the more than one state can be active at a time. To deal with this, states are ranked based on a priority, so that the active state with the highest priority becomes the in-control state.



Because it is also possible that no states are active, it is important to select a state that acts as the default state. The default state usually corresponds to the state with the lowest priority (default alarms).

2) Control Philosophy Resolution

Each state corresponds to a specific control philosophy that will be implemented. Once the active state has been determined, the corresponding control philosophy is activated.



There are always 4 controller states for every APC controller in APET. These controller states are grouped together as follows:

1. Critical Alarms
2. High Alarms
3. Low Alarms
4. Default Alarms

Each of these 4 controller states may contain at least one referencing state. For example, the Default Alarms container will contain the MPC optimizer and default states amongst others.

Based on the referenced states of each controller state, the State Index of the controller state may be:

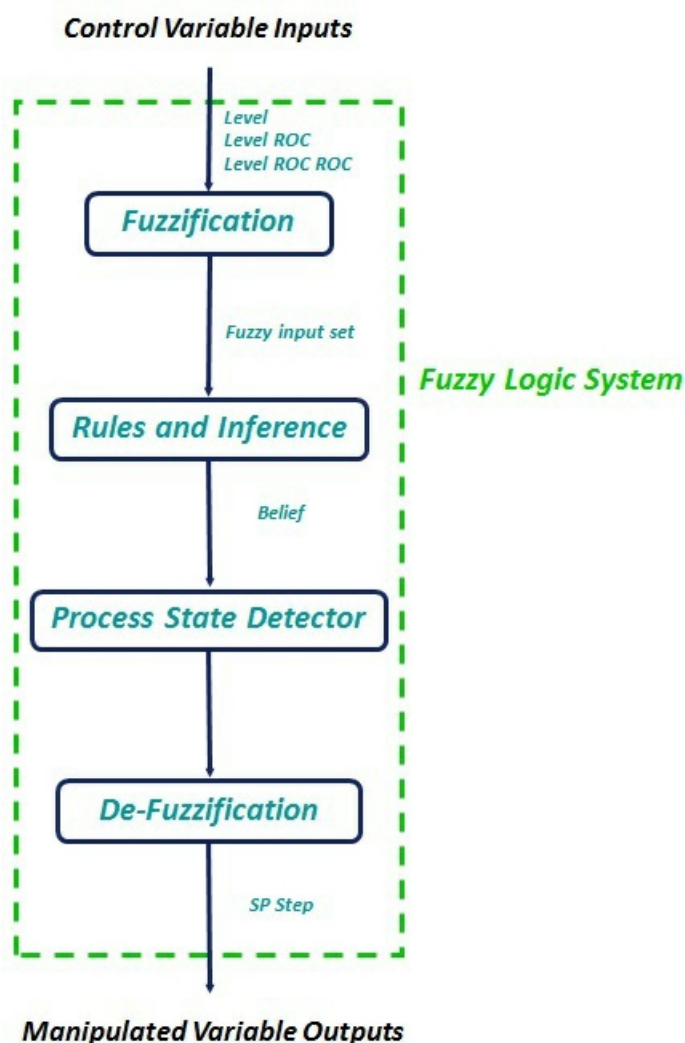
- 0 if it is not active
- 1 active but not in-control
- 2 active AND in-control

All of the attributes of the controller states are displayed on the SCADA faceplate.

If the controller has detected a certain process state scenario, it will take corrective actions in an attempt to resolve this scenario. The corresponding BELIEF value displayed next to a PROCESS STATE is an indication of how true this state is. The belief value of each state will determine the size of the control actions implemented. If the PROCESS STATE belief state is 65.0% true, then less aggressive control actions will be implemented to resolve this condition compared to a scenario where the belief value is 90.0% true. This approach implies that the controller will never wait for any process state (excluding the DEFAULT state, which represents the stable state) to reach a value of 100.0% before implementing any control actions to resolve the state. All of the PROCESS STATES other than the DEFAULT state are less desirable state conditions and the controller will attempt to keep their belief values as low as possible.

A2 - BASIC PRINCIPLES OF FUZZY CONTROL

A fuzzy logic system (FLS) can be defined as the nonlinear mapping of an input data set to a scalar output data. A FLS consists of four main parts: fuzzifier, rules, inference engine, and defuzzifier. These components and the general architecture of a FLS is shown in the figure below.



The process of fuzzy logic is defined as follows: Firstly, a crisp set of input data are gathered and converted to a fuzzy set using fuzzy linguistic variables, fuzzy linguistic terms and membership functions. This step is known as fuzzification. Afterwards, an inference is made based on a set of rules. Lastly, the resulting fuzzy output is mapped to a crisp output using the membership functions, in the defuzzification step.

The fuzzy logic algorithm can be summarized as follows:

1. Define the linguistic variables and terms (initialization)
2. Construct the membership functions (initialization)
3. Construct the rule base (initialization)
4. Convert crisp input data to fuzzy values using the membership functions (fuzzification)
5. Evaluate the rules in the rule base (inference)
6. Combine the results of each rule (inference)
7. Convert the output data to non-fuzzy values (defuzzification)

Linguistic variables are the input or output variables of the system whose values are words or sentences from a natural language, instead of numerical values. A linguistic variable is generally decomposed into a set of linguistic terms. Example: Level in a bin. Let level (LVL) be the linguistic variable which represents the amount of material in the bin. To qualify the level, terms such as high and low are used in real life. These are the linguistic values of the level. Then, $LVL(t) = \text{extremely low, low, ok, high, extremely high}$ can be the set of decompositions for the linguistic variable level. Each member of this decomposition is called a linguistic term and can cover a portion of the overall values of the bin level.

Membership functions are used in the fuzzification and defuzzification steps of a FLS, to map the non-fuzzy input values to fuzzy linguistic terms and vice versa. A membership function is used to quantify a linguistic term. Note that, an important characteristic of fuzzy logic is that a numerical value does not have to be fuzzified using only one membership function. In other words, a value typically belongs to multiple sets at the same time. For example the bin

level value can be considered as extremely low and low at the same time, with different degrees of memberships.

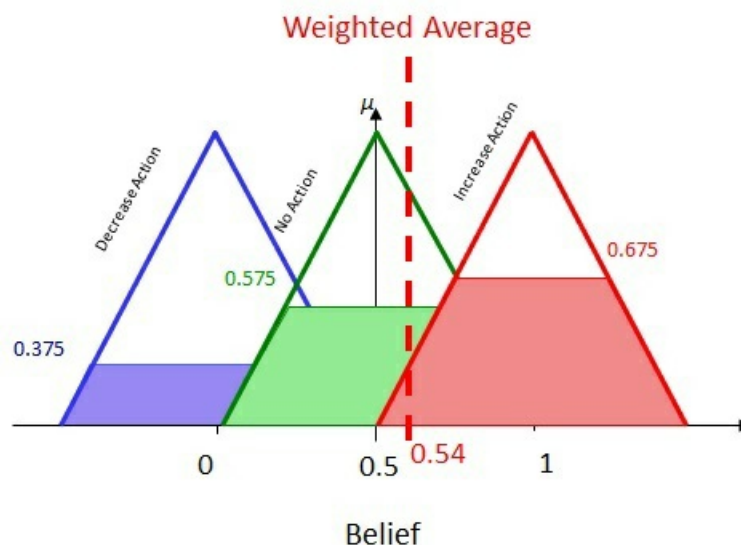
APET includes a powerful fuzzy controller toolset which includes a very flexible editing environment as well as a variety of membership functions to be used.

Each CV feeding into the controller is fuzzified (classified within a fuzzy membership function) by one or more FIS-INPUTS. For control variables (CV) there are typically three types of classification: proximity (this relates to the normalized value), slope (rate of change) and slope rate of change (this implies acceleration).

For each of the fuzzy families, a specific input must be provided based on the value of the CV (and its recent history).

1. Proximity: this is a comparison of the normalized value of the CV
2. Slope: this represents the slope or rate of change of the CV over a defined period and is calculated within the APC system
3. Slope Rate of Change: this represents the rate of change of the slope of the CV and is calculated within the APC system

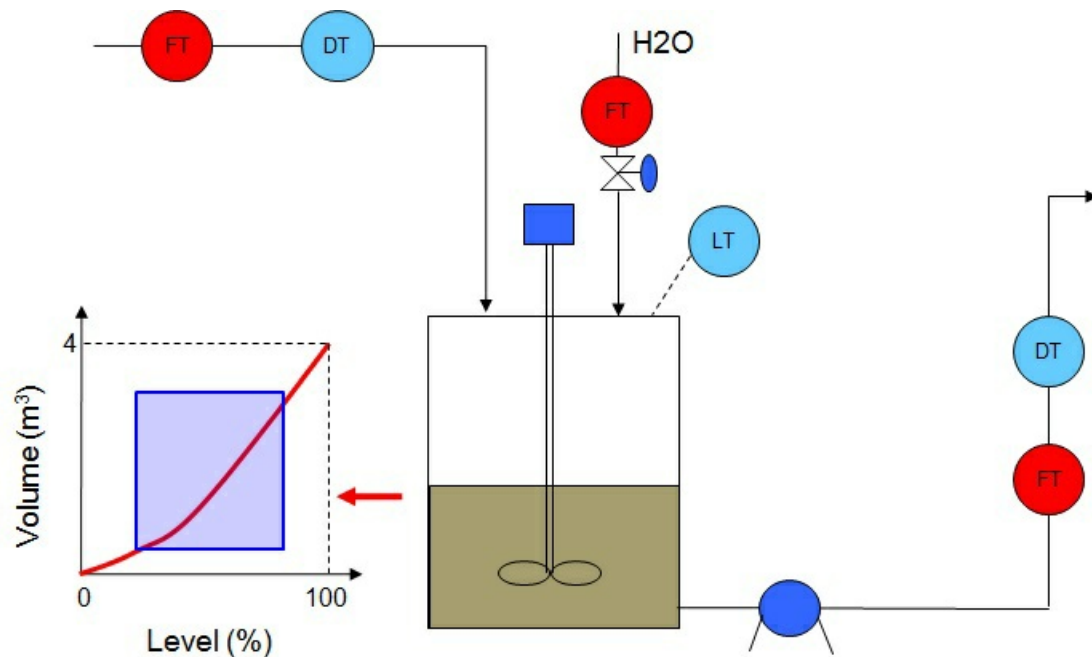
After the inference step, the overall result is a fuzzy value. This result should be defuzzified based on the process state which is In Control to obtain a final crisp output. This is the purpose of the defuzzifier component of a FLS. Defuzzification is performed according to the membership function of the output variable. For instance, assume that we have the result in the figure below at the end of the inference. In this figure, the shaded areas all belong to the fuzzy result. The purpose is to obtain a crisp value, represented by the dotted line in the figure below, from this fuzzy result.



The crisp value (or belief) is then converted back to a setpoint change using the defuzzy function.

A3 - BASIC PRINCIPLES OF MODEL BASED CONTROL (MBC)

Sumps and surge tanks form a buffer between processes, and can be used to reject large disturbances and thereby improve stability in downstream operations. They typically resemble the diagram below, with multiple input lines (some possibly unmeasured) and a single discharge.



Fundamentally, the change in sump volume (dV/dt) is equal to the net flow into the sump, or:

$$\frac{dV(t)}{dt} = F_{in}(t) - F_{out}(t)$$

Where: F_{in} and F_{out} = respective flow measured in m³/s

Integrating to get the current sump volume:

$$V(t) = \int_0^t F_{in}(\tau) - F_{out}(\tau) d\tau = \int_0^t \Delta F(\tau) d\tau$$

This is the principle on which all derivations are done. The sump tank is a pure integrating process, where the model based control aims to minimize flow out deviation by modifying the sump level via its derivative $\Delta F(t)$.

To minimize the discharge flow rate variation, there are two basic approaches the model based controller can take:

1. Delay control action until it is really necessary, or
2. Perform minimal control action now in the event that it will stave off drastic changes later.

Principle: There exists a time T_c such that if we ramp $F_{out}(t)$ at a rate of M but then we will be at capacity at T_c , with a net flow rate of zero, given that $F_{in}(t)$ remains constant.

This implies that we begin the ramp now, and depending on the volume between the capacity and our current level, we will reach the capacity limit at T_c . Therefore if there is a large ΔV (effectively - capacity available), the ramp will have an extremely slow rate and the flow out will hardly be affected, whereas if we are at capacity (ΔV), the flow out will track the flow in. It is possible to even allow for discharge flow overshoot if we are over capacity.

A4 - BASIC PRINCIPLES OF MODEL PREDICTIVE CONTROL (MPC)

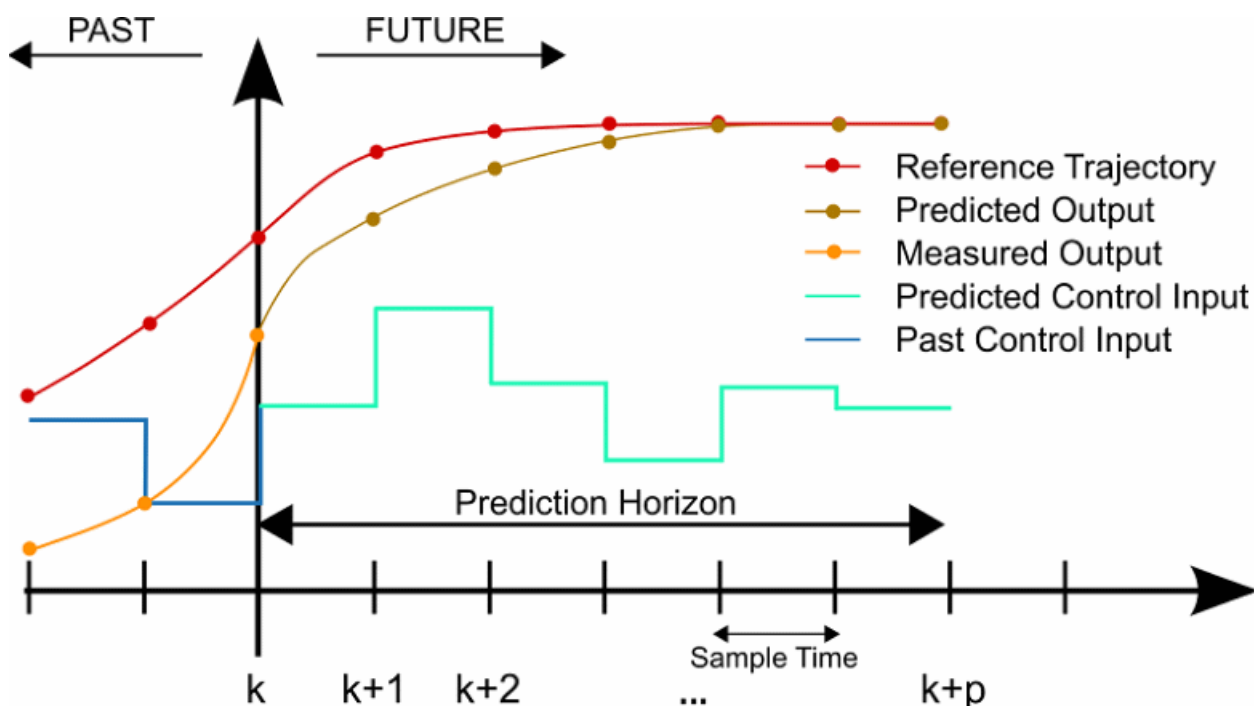
Model predictive control (MPC) is an advanced method of process control that has been in use in the process industries in chemical plants and oil refineries since the 1980s. Model predictive controllers rely on dynamic models of the process, most often linear empirical models obtained by system identification. Dynamic process models describe how the process parameters will respond in the future for changes made to the process in the present time. These

models can therefore predict process responses into the future. The main advantage of MPC is the fact that it allows for the current process conditions (current timeslot) to be optimized, while accounting for future process conditions (future timeslots) still to happen as a result of changes to the current process conditions. This is achieved by optimizing over a finite time-horizon (the future predictions), implementing the current timeslot actions and then relying on feedback to account for unmeasured disturbances and model/plant mismatches. This implies that the model prediction error that may exist (or develop over time) is also taken into account by the MPC algorithm. MPC models therefore do not have to be 100% accurate. As a result of this the MPC technology is very robust, and typically outperforms most other advanced process control techniques. The MPC further has the ability to anticipate/predict future events and can take control actions accordingly. An example of this is that the MPC can predict that the bin level will drop below the low level limit, which will result in the feeder being interlocked and stopped. The feeder stop will again cause the bin level to increase sharply. The MPC can take all of these future predictions into account and prevent this scenario from happening. PID controllers normally implemented as part of the base layer (PLC) control do not have this predictive ability. Therefore the PID controller in the base layer (PLC) control will not be able to prevent the above feeder interlock and stop.

The models used in MPC are generally intended to represent the behaviour of complex dynamic systems, which cannot be effectively controlled by base layer (PLC) controllers such as PID controllers. Dynamic characteristics that are difficult for PID controllers include large time delays, variable interaction and high-order dynamics.

MPC uses current and historical plant responses/measurements, the current dynamic state of the process, the MPC models, and the process variable targets and limits to calculate future changes in the dependent variables (the variables to be controlled, such as bin levels and product mass flow rates). These changes are calculated to hold the dependent variables close to target while honoring constraints on both independent (the levers that can be pulled by the MPC system, such as feeder speeds or PID setpoints) and dependent variables. The MPC typically sends out only the first setpoint change (of the sequence of calculated changes required going into the future) in each independent variable to be implemented, and repeats the calculation when the next change is required (by updating the sequence of calculated changes required going into the future).

Below is an image to illustrate the concepts:



In summary, Model Predictive Control (MPC) is a multivariable control algorithm that uses:

1. an internal dynamic model of the process
2. a history of past control moves and
3. an optimization cost function J over the receding prediction horizon, to calculate the optimum control moves.

An example of a quadratic cost function for optimization is given by:

$$J = \sum_{i=1}^N w_{x_i} (r_i - x_i)^2 + \sum_{i=1}^N w_{u_i} \Delta u_i^2$$

With:

X_i = i -th controlled variable (e.g. measured bin level)

r_i = i -th reference variable (e.g. required bin level)

u_i = i -th manipulated variable (e.g. feeder speed)

w_{x_i} = weighting coefficient reflecting the relative importance of X_i

w_{u_i} = weighting coefficient penalizing relative big changes in u_i