

# Foxboro I/A APC Configuration Tips

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**EOSYS**



# Using Supervisory Setpoint Control

- Became usable by humans once auto-acknowledge was added
- You don't "HAVE" to have APC, but you can't connect the SUP\_IN parameter
- PID has 2 options
  - Manipulate the Setpoint, or
  - Manipulate the Output
- AOUT has 1 option
  - Manipulate the Output
- Tremendous possibilities w/built-in Bumpless transfers



## SSC Adds 2 “New” PIDA Modes

1. Manual
2. Automatic w Local Setpoint
3. Automatic w Remote Setpoint
4. Automatic w Supervisory Setpoint
5. Tracking w AOUT in Manual
6. Tracking w AOUT in Supervisory Control



# PIDA SSC Block Parameters

Table 99-1. PIDA Block Parameters

Name	Description	Type	Accessibility	Default	Units/Range
<b>INPUTS</b>					
SE	supervisory enable	Boolean	no-con/set	0	0 to 1
SUP_IN	supervisory setpoint	real	con/no-set	0.0	RI1
INITSE	initial SE	short	no-con/no-set	0	0 to 2
SUPGRP	supervisory group	short	no-con/no-set	1	1 to 8
SUPOPT	supervisory option	short	no-con/no-set	0	0 to 4
<b>OUTPUTS</b>					
SUPBCO	supervisory back calculation	real	con/no-set	0	RI1

# AOUT SSC Block Parameters

## Configurable Parameters

### INPUTS

INITSE	initial SE	short	no-con/no-set	0	0 to 2
SE	supervisory enable	boolean	no-con/set	0	0 to 1
SUPOPT	supervisory option	short	no-con/no-set	0	0, 1, 3
SUPGRP	supervisory group	short	no-con/no-set	1	1 to 8

## Non-Configurable Parameters

### OUTPUTS

SUP_IN	supervisory input	real	con/set	0.0	RI1
SUPBCO	supervisory back calc out	real	no-con/no-set	0	RI1

# HOW TO CONFIGURE



# Configuration

## **SUPGRP = 1-8**

Enable with CP SSC Groups 1-8

## **SUPOPT = 0-4**

- 0 No SSC
- 1 SPC Set Point Control w/ explicit handshaking
- 2 DDC Direct Digital Control w/ explicit handshaking
- 3 SPC Set Point Control w/ implicit acknowledge
- 4 DDC Direct Digital Control w/ implicit acknowledge

## **SE = 0-1**

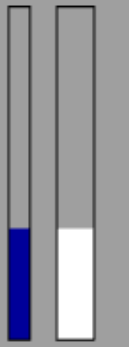
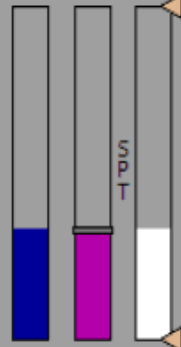
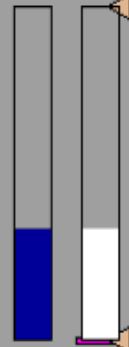
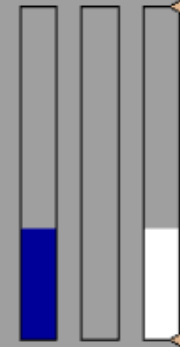
- 0 Disabled
- 1 Enabled

## **SUP\_IN**

- Can't be connected – but can be set with OPC or HLBL or OMSETs





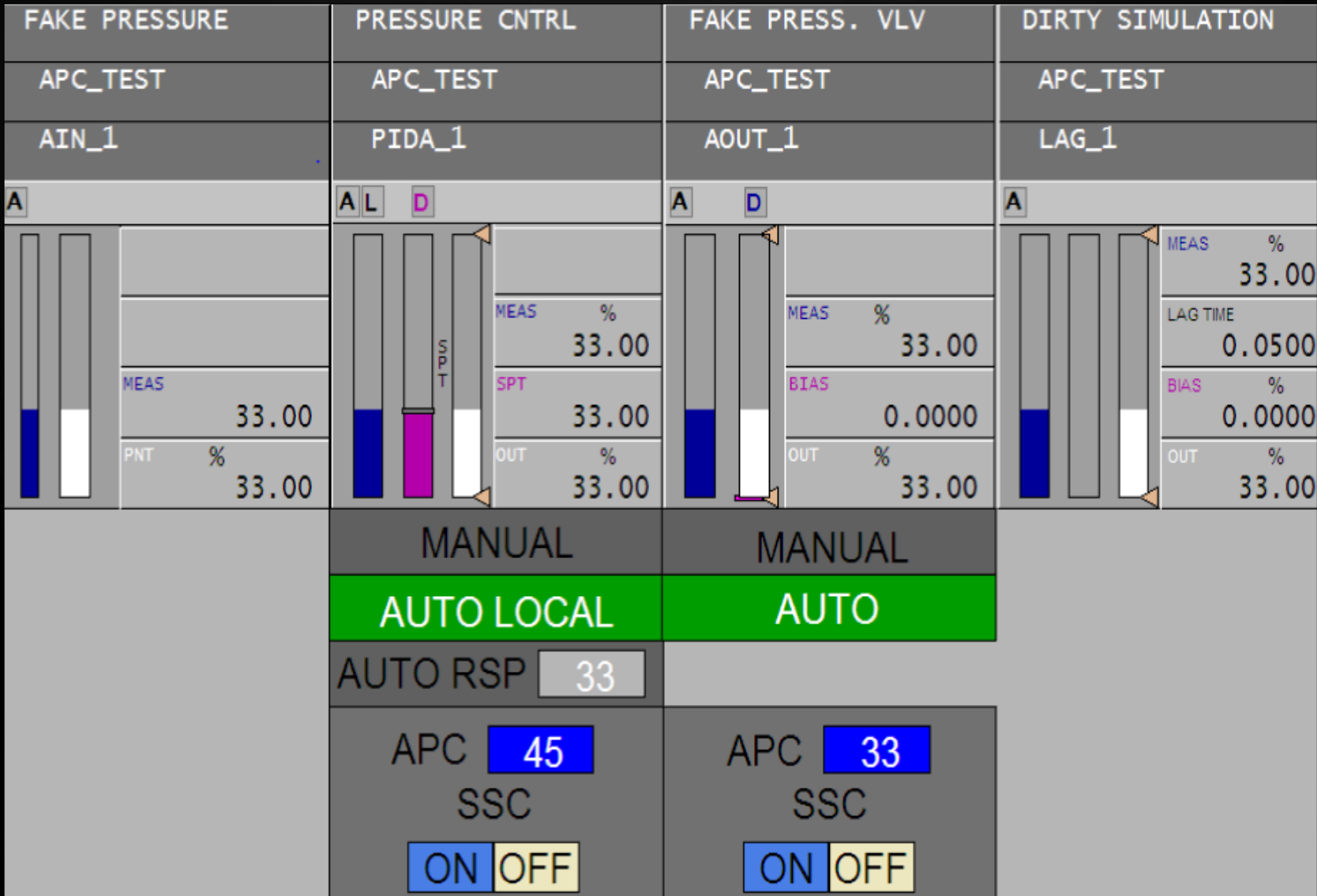
FAKE PRESSURE	PRESSURE CNTRL	FAKE PRESS. VLV	DIRTY SIMULATION																																				
APC_TEST	APC_TEST	APC_TEST	APC_TEST																																				
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	AUTO RSP <input type="text" value="33"/>																																						
	APC <input type="text" value="45"/> SSC	APC <input type="text" value="33"/> SSC																																					
	<input type="button" value="ON"/> <input type="button" value="OFF"/>	<input type="button" value="ON"/> <input type="button" value="OFF"/>																																					

# PIDA in MANUAL

PIDA is in SUPGRP 1  
AOUT is in SUPGRP 2

The "D" in the Faceplates indicate SSC is "D"isable

This shows normal PIDA Manual Operation


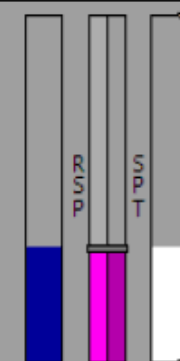

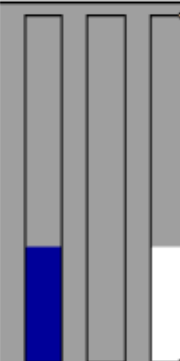


## PIDA in AUTO

PIDA is in SUPGRP 1  
AOUT is in SUPGRP 2

The "D" in the Faceplates indicate SSC is "D"isable

This shows normal PIDA AUTO Operation

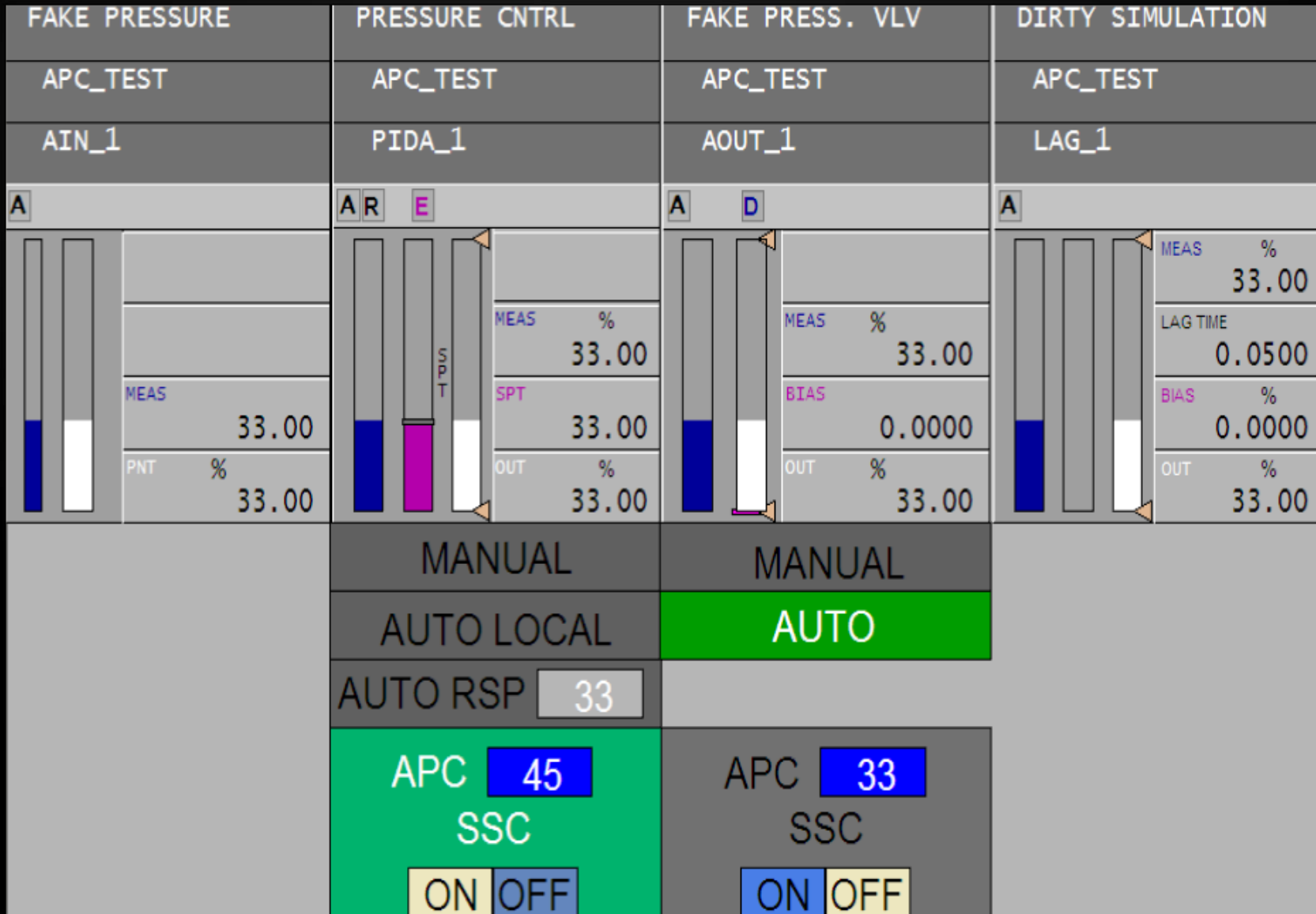
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OUT	%	33.00																																					
	MANUAL	MANUAL																																					
	AUTO LOCAL	<b>AUTO</b>																																					
	<b>AUTO RSP</b> 33																																						
	APC 45 SSC	APC 33 SSC																																					
	ON OFF	ON OFF																																					

## PIDA in REMOTE

PIDA is in SUPGRP 1  
AOUT is in SUPGRP 2

The "D" in the Faceplates indicate SSC is "D"isable

This shows normal PIDA Remote Operation

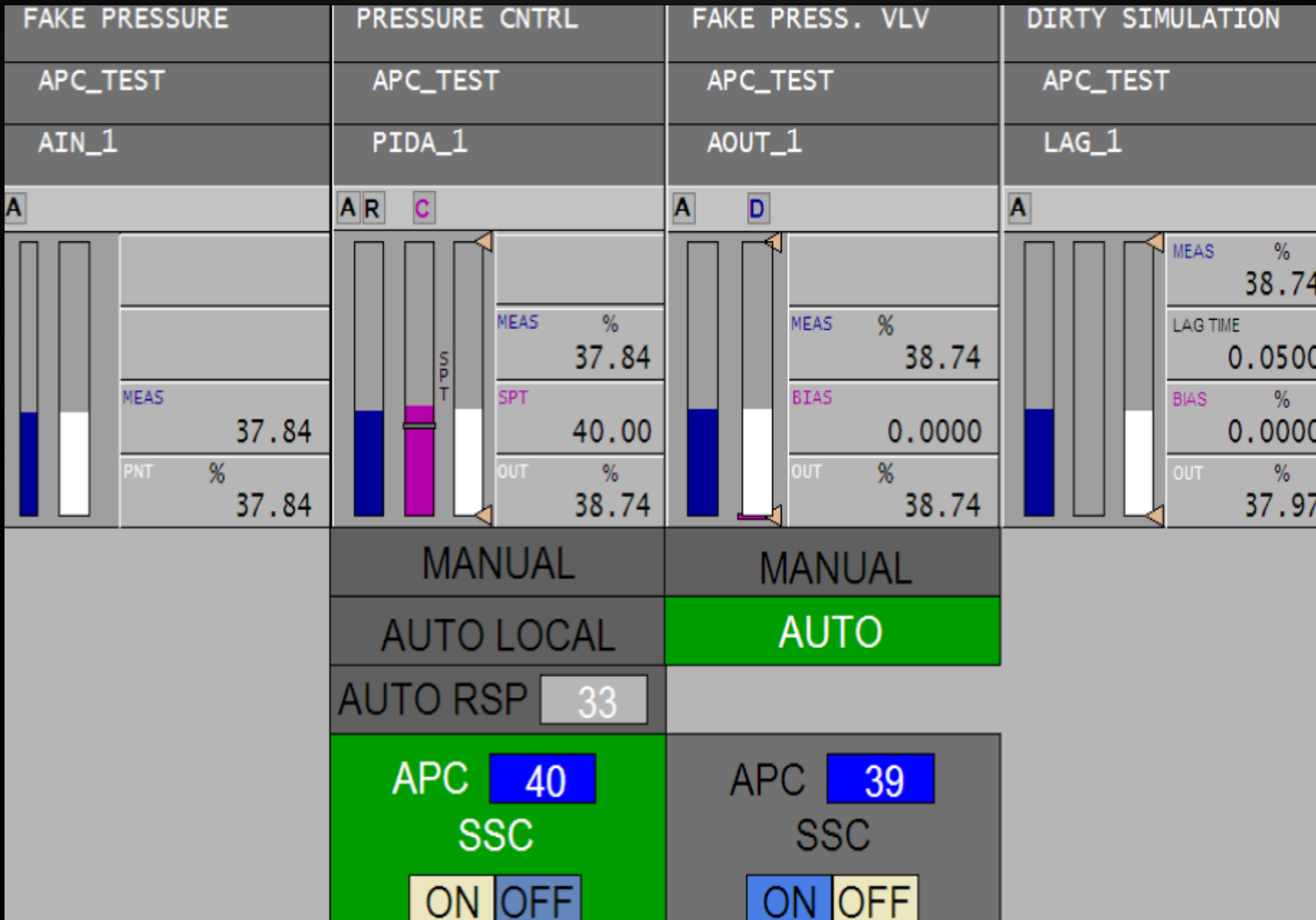


## PIDA Transitioning

PIDA is in SUPGRP 1  
AOUT is in SUPGRP 2

The “E” in the PIDA Faceplate indicates SSC is “E”nabled

The PIDA is waiting for a SUP\_IN change. Even though we show a 45 – the SUP\_IN must change before PIDA goes into SSC

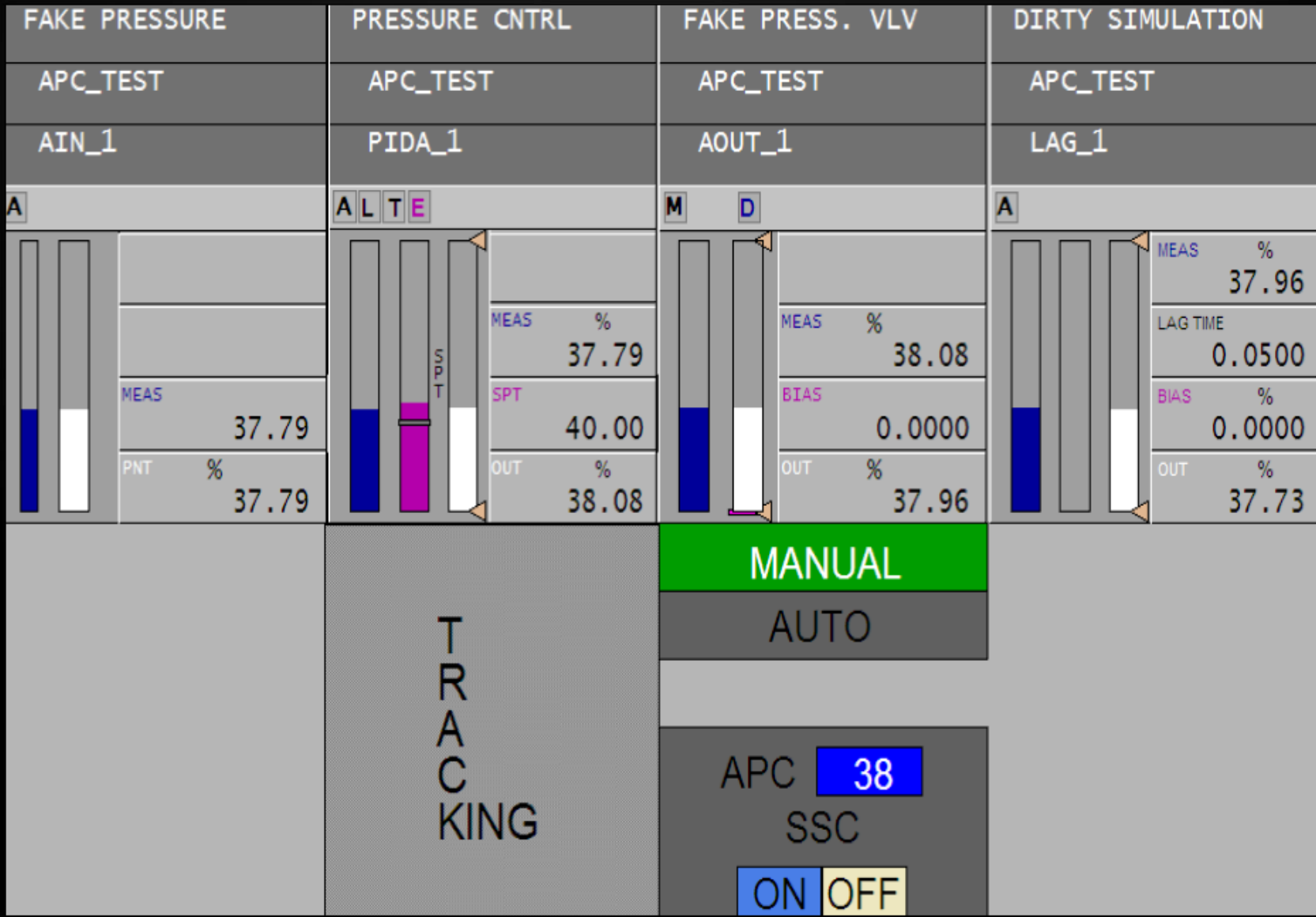


## PIDA in SSC CONTROL

PIDA is in SUPGRP 1  
AOUT is in SUPGRP 2

The "C" in the PIDA Faceplate indicates SSC is in "C"losed Loop

The PIDA is now in SSC control

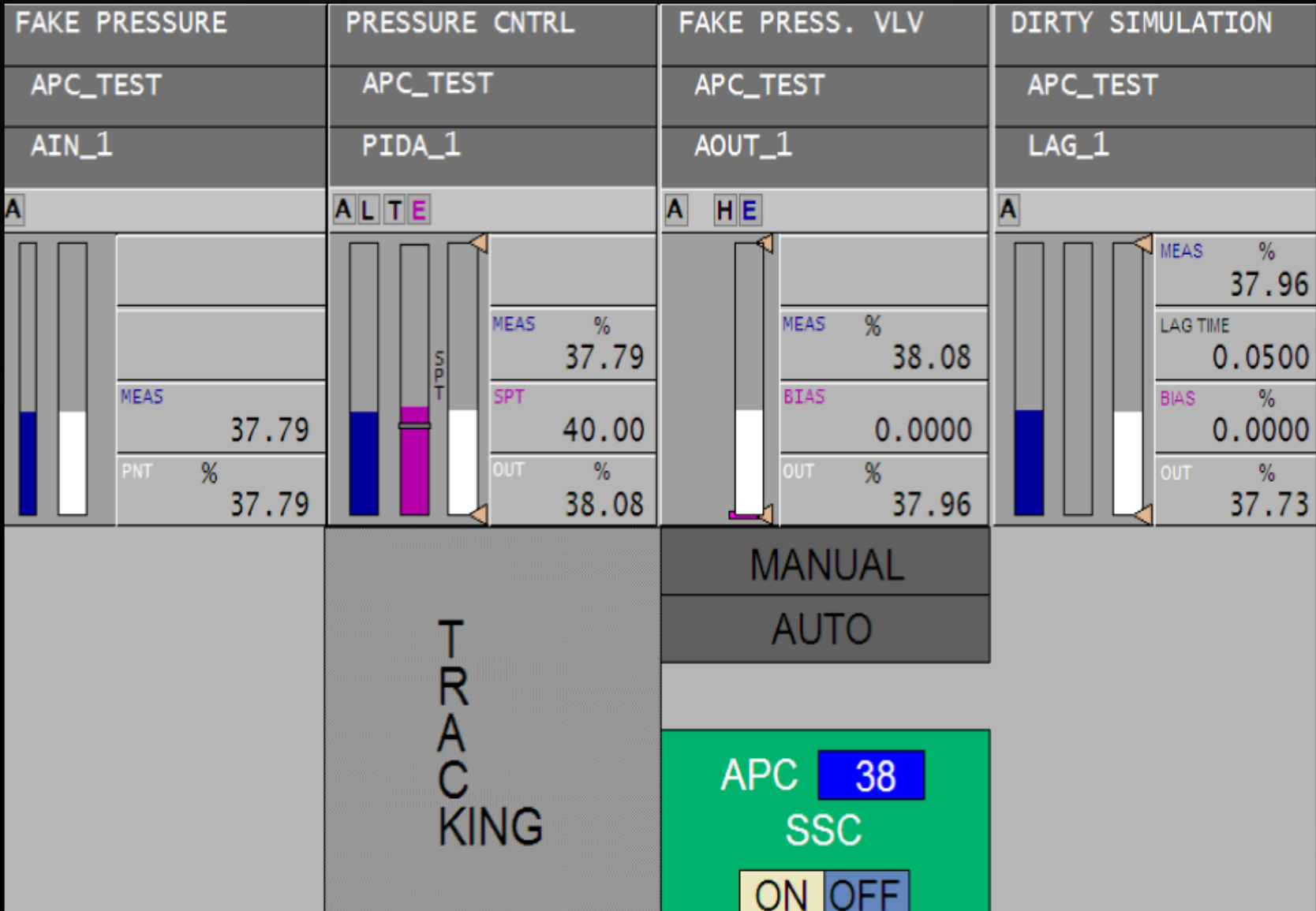


## AOUT to MAN

PIDA is in SUPGRP 1  
AOUT is in SUPGRP 2

The "E" in the PIDA  
Faceplate indicates  
SSC is still "E"nabled

The AOUT is in MANUAL and  
the PIDA is now tracking with  
SSC still enabled

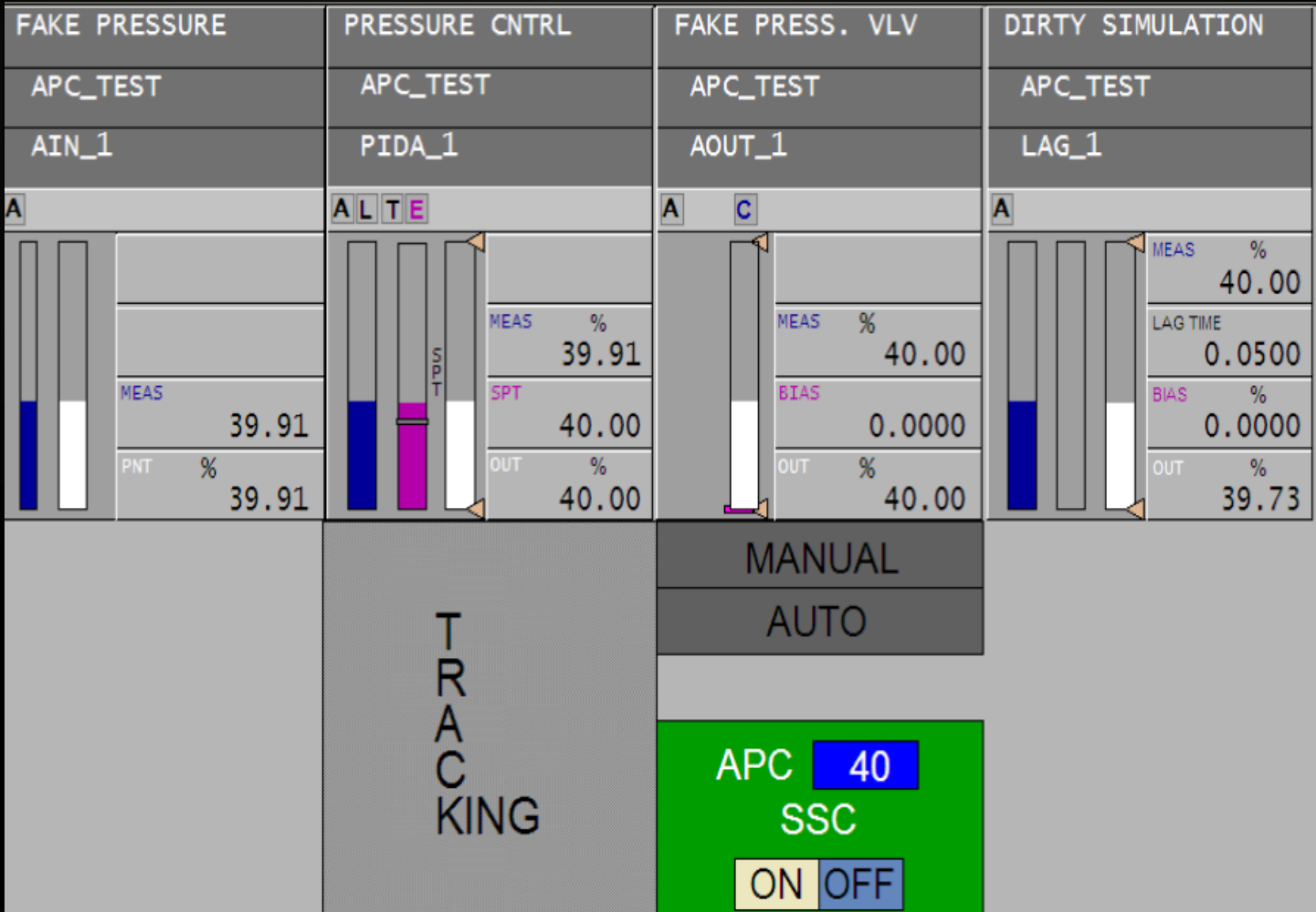


## AOUT to Transitioning

PIDA is in SUPGRP 1  
AOUT is in SUPGRP 2

The "E" in the PIDA Faceplate indicates SSC is still "E"nabled

The AOUT is in AUTO and SSC is "E"nabled waiting for a new SUP\_IN. The AOUT also indicates it is "H"olding its output



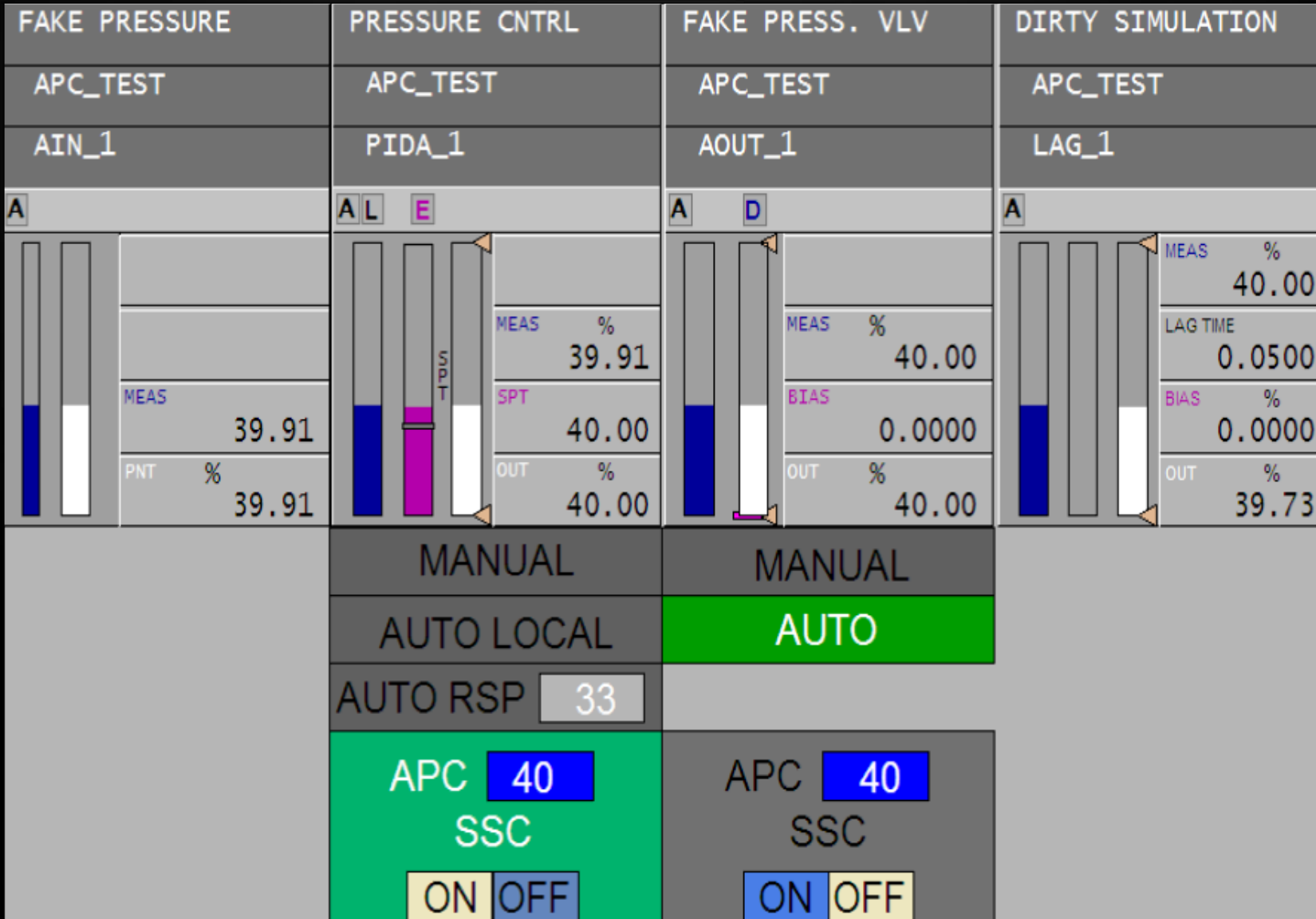
# AOUT to SSC

PIDA is in SUPGRP 1  
AOUT is in SUPGRP 2

The "E" in the PIDA Faceplate indicates SSC is still "E"nabled

The AOUT is in AUTO and SSC is in "C"losed loop



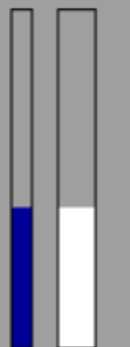
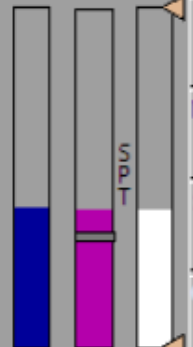
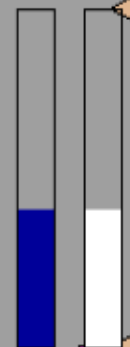
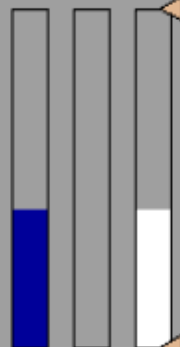


## AOUT back to AUTO

PIDA is in SUPGRP 1  
AOUT is in SUPGRP 2

The "E" in the PIDA Faceplate indicates SSC is still "E"nabled. Waiting for a change in SUP\_IN to go back to "C"losed Loop

The AOUT is in AUTO

FAKE PRESSURE	PRESSURE CNTRL	FAKE PRESS. VLV	DIRTY SIMULATION																								
APC_TEST	APC_TEST	APC_TEST	APC_TEST																								
AIN_1	PIDA_1	AOUT_1	LAG_1																								
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BIAS %	0.0000																										
OUT %	40.76																										
	MANUAL	MANUAL																									
	AUTO LOCAL	<b>AUTO</b>																									
	AUTO RSP 33																										
	APC 41 SSC	APC 41 SSC																									
	ON OFF	ON OFF																									

## AOUT back to AUTO

PIDA is in SUPGRP 1  
AOUT is in SUPGRP 2

The "C" in the PIDA Faceplate indicates SSC is back to "C"losed Loop control

The AOUT is in AUTO

QUESTIONS?



A person wearing a white hard hat and a high-visibility safety vest is seen from behind, sitting at a workstation in a control room. The workstation features several computer monitors displaying various data and charts. The entire scene is overlaid with a semi-transparent purple filter. The text "THANK YOU!" is prominently displayed across the center of the image.

**THANK YOU!**

