INSTRUMENT FUNCTION OUTLINE DEPARTMENT 246

TITLE #3 Still Receiver Level Control & Alarm LOOP NUMBER 025

SHEET 1 OF 4 CLASSIFICATION LCA-25

WRITTEN BY Brawley DATE 4/28/69 REV. BY DATE REV. NO.

1.0 NEED FOR LOOP

This loop is needed to insure that the receiver tank does not overflow or run dry, either one of which would disrupt the pressure conditions in the distillation system.

1.1 DESCRIPTION OF LOOP

1.1.1 Function

The function of this loop is to control the level in the still receiver, to sound an alarm on hi or low level, and to activate interlock solenoid.

1.1.2 System Performance Required

The level should be maintained ± 5" of set point.

1.1.3 Accomplishment of Function

The level in the tank is sensed by a level transmitter which sends a 3-15 psig air signal to a level controller. The level controller compares this signal with a set point and sends a 3-15 psig air signal to a control valve to throttle flow from receiver. The transmitter also sends an air signal to a dual unit pressure switch which activates an alarm on high or low level.
To prevent loss of vacuum in receiver, an interlock closes control valve when the receiver pump is shut down, or there is a loss of power to it.

PCB-ARCH-EXT0373973

INSTRUMENT FUNCTION OUTLINE

TITLE Still Receiver Level Contr. & Alarm

SHEET 2 OF 4

DEPARTMENT 246

LOOP NUMBER 025

CLASSIFICATION LCA-25

2 COMPONENT AND CALIBRATION DATA

OPERATING DATA

A. LT-25 Level Trans. & Controller LC-25
Location: 14' level, over tank 508
Air Supply: 20 psig
Output: 3-15 psig (Trans. & Contr.)
Action: Inc. input
Inc. output

B. LV-25 Control Valve
Location: Gnd. level, NE of tank 508
Input: 3-15 psig
Action: Air to open
Fails close

C. LSA-25 Pressure Switch
Location: Panel
Input: 3-15 psig
FCT: Hi & Low Level Alarms
SPDT Contact/115 V., 10 A.
High level alarm sounds at 55" from bottom bend line (90%)

Low level alarm sounds at 12" from bottom bend line (10%)

MECHANICAL DATA

A. Fisher Gov. Level Trans. #2500T-249BP & Level Contr. #2516 W/Piped & Mtd. Air Set
4" R.F. Flg. 316 SS Body
316 SS Displacer; 1-1/8" O.D.x 63" Lg.

Displacer
Ext. Length: 14"
Prop. Band: 10-200%
Calibration Pull: 0-3# 11 oz
Serial No.: 4464407
Zero Setting:
Span:
IPMO: 127
Torque Tube 1K4493-000A

B. Fisher Gov. Control Valve #667-BF
Actuator Size 30 Travel 3/4"
1" 150# Flg. 316 SS Body
3/4" 316 SS Micro-Flute Trim
Teflon Packing, Skirt-Top Guiding
IMO: 45 IPMO: 126
Packing Set: 1U2546-0101
Valve Plug: 2J7335-3507
Seat Ring: 1R1262-3507
Serial: 4435030
Spare Valve St. Code: 07=75671

C. Barksdale Dual Unit Pres. Switch #D2T-H18
Bronze Diaphragm, 1/4" IPS
Range: 0-18 psig
Conduit Conn.: 1/2" NPS
Setting Trips at 4.2# on drop
Setting Trips at 13.8# on rise
Stores Code: 44-73246

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INSTRUMENT FUNCTION OUTLINE

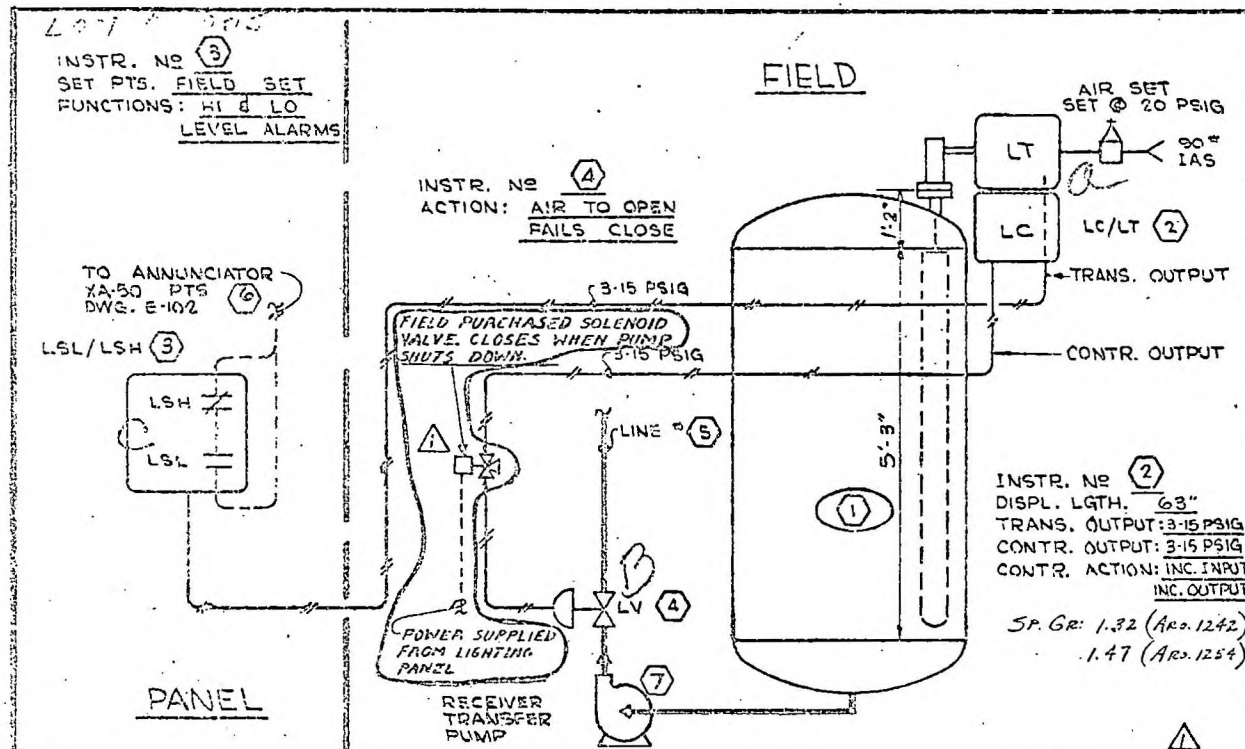
DEPARTMENT 246

TITLE #3 Still Receiver Level Control & Alarm

LOOP NUMBER 025

SHEET 3 OF 4

CLASSIFICATION LCA-25



(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM 2-508	LT/LC 25	LSH/LSL-25	LV-25	2-510-1-A11P-1½"	2-6	2-510
ITEM 2-515	LT/LC 30	LSH/LSL-30	LV-30	2-517-1-A11P-1½"	2-7	2-517

BILL OF MATERIAL

MARK NO	QUAN	SPEC. 1800	P.O. NO. 1800-9	DESCRIPTION
(2)	2	20.1	0128	FISHER-GOV. # 2500T-249BP TRANSMITTER & # 2516 CONTROLLER W/PIPED & MT'D. AIR SET
(3)	2	13.2	0112	BARKSDALE D2T-H1S DUAL UNIT PRESSURE SWITCH
(4)	2	10.2	0055	FISHER-GOV. #667-BF-1", CONTROL VALVE FOR 150# FLGS

MARK NO.	QUAN	SPEC.	P.O. NO.	DESCRIPTION

INSTRUMENT SCHEMATIC DIAGRAM

LOOP NO. LCA-25 & LCA-30

FUNCTION STILL RECEIVER LEVEL CONTR. & ALARM

	REFERENCE NO.
1800	I-11D

REV	DATE	DESCRIPTION	BY	CHKD	APP'D
1	12-19-68	ADDED SOL. VALVE & PUMP NO'S AS BUILT	CLH	—	R.V.
0	6/21/68	APP'D. FOR CONST.	—	—	ASJ

MONSANTO COMPANY

CENTRAL ENGINEERING DEPARTMENT, ST. LOUIS, MISSOURI

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DIVISION ORGANIC 2 PLANT KRUMMRICH

SCHEMATICS

SHEET 4 MFG. AREA

	BY	DATE	APPROVED	DATE	APPROVED	DATE
DRAWN	HAMMONDS	4-30-68	[illegible]	[illegible]	[illegible]	[illegible]
CHECKED	L. VON M.	6-19-68	[illegible]	[illegible]		
SCALE	NONE					

C.E.A. NO.	PLANT	SIZE	DEPARTMENT	TYPE	NUMBER	REV
1800	3	D	811.00	I	11	1

PRINTS ISSUED TO FIELD—BY [illegible] DATE 1/7/69 R.V. 1

PCB-ARCH-EXT0373975

INSTRUMENT FUNCTION OUTLINE DEPARTMENT 246

TITLE #3 Still Receiver Level Control LOOP NUMBER 025

SHEET 4 OF 4 CLASSIFICATION LCA-25

WRITTEN BY _____ DATE _____ REV. BY _____ DATE _____ REV. NO. _____

3.0 OPERATION OF LOOP

3.1 NORMAL OPERATION

The operation of this loop is to maintain a constant level in the still receiver. Will activate an alarm if the level is too high or too low. Normal set point is 9# instrument air.
High level is 55" from bottom bend line (90%).
Low level is 12" from bottom bend line (10%).

3.1.1 Start Up Instructions

Align manual valves and check air supply. Start receiver transfer pump. The level controller on the receiver tank will allow continuous pump out without dead-heading the pump.

3.1.2 Shut Down Instructions

Shut down receiver transfer pump and close manual valves.

3.1.3 Manual Operations

Place level controller on "Manual" and regulate air to control valve.

3.2 ABNORMAL OPERATIONS

3.2.1 Air Failure

Air failure to this loop will cause level in receiver to build up because auto valve in transfer line fails closed.

3.2.2 Power Failure

Power failure to this loop will cause loss of alarm and control if failure is to receiver transfer pump.

3.3 INTERLOCKS

One shut down of still receiver pump, or loss of power to it, will shut auto valve.

REVIEW

James E. Robstock

[illegible] 8/5

R M McCutchan 11/20/69

P S Neuhoff 9/20/69