Paperless Process Recorder & Legendary ™ Software
3-Position Transfer Switch Installation
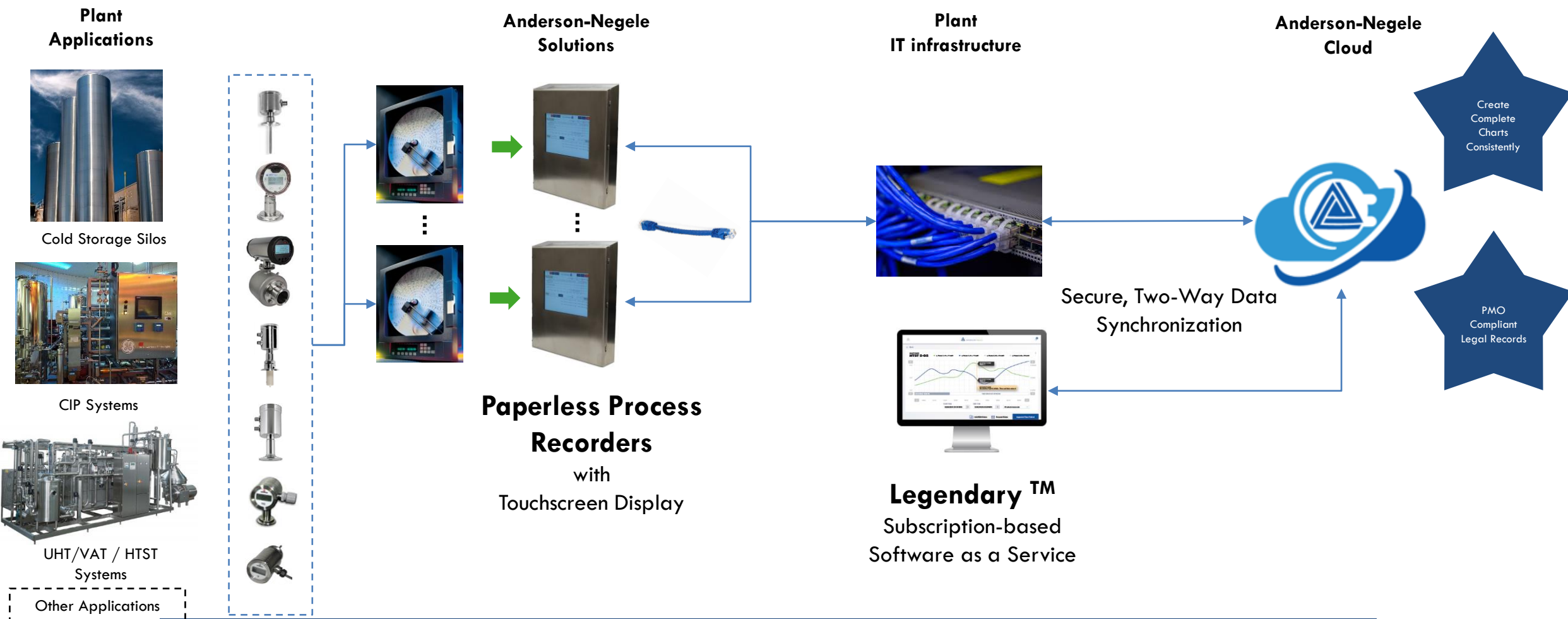*2/16/22*

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Meeting Agenda

1. PPR / Legendary Solution Overview

   A. Solution Components

   B. Product Features

2. Goals of STLR & SFLR Series Recording/Controlling

   A. Installation Proposal

   B. Transfer Switch Design

   C. Transfer Switch Control Scenarios

   D. Installation Requirements

3. Next Steps Discussion

Solution Components
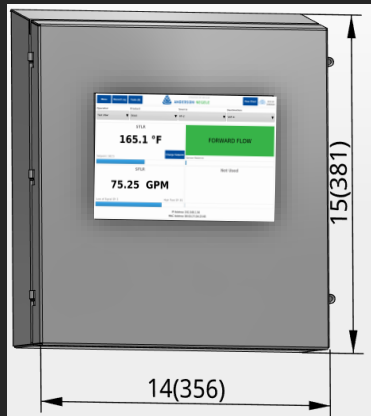
Creating a Legal, Digitalized Workflow

Plant Applications

Cold Storage Silos

CIP Systems

UHT/VAT / HTST Systems

Other Applications

Anderson-Negele Solutions

Paperless Process Recorders

with

Touchscreen Display

Plant IT infrastructure

Secure, Two-Way Data Synchronization

Legendary ™

Subscription-based Software as a Service

Anderson-Negele Cloud

Create Complete Charts Consistently

PMO Compliant Legal Records

Your applications and network with Anderson-Negele sensor, recorder and cloud solutions.

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Paperless Process Recorder: Hardware Overview

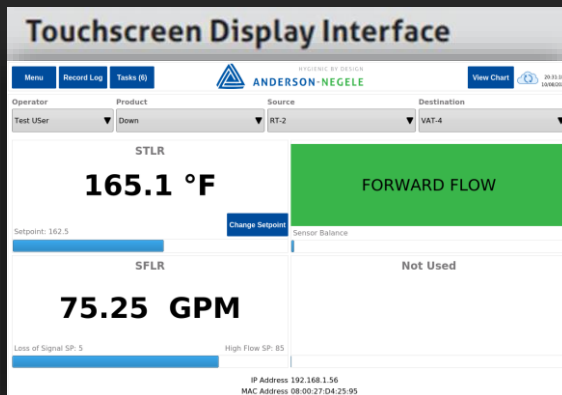*The PPR can be mounted on a panel or directly to the wall.*

Dimensions:
15" High
14" Wide
3.07" Deep *(Panel Mount)*
3.26" Deep *(Wall Mount)*

15(381)

14(356)

Touchscreen Display Interface

Application and Specified Use

1. Paperless process recorder that will meet all PMO requirements

2. Direct drop-in replacement for existing paper recorders

Key Features:

- 10.1" HMI touchscreen display
- NEMA 4X enclosure
- Preconfigured product and tank names
- Client specific and best-practice annotation lists
- Scroll through historic trends
- Internal redundant storage
- Data encryption during transmission to back-up servers
- Prevents interception or falsification of records

Goals of STLR & SFLR Series Recording/Controlling

Mode 1 & 2:

1. **Provide customer & regulators a method to evaluate PPRs performance while:**
2. **Ensure that public health controls are not compromised during evaluation/training period**
3. **Eliminate potential unplanned downtime or regulatory seal cuts during product evaluation/training period**
4. **Prove the PPR exceeds current technology for legal pasteurization recording & controlling applications**
   a. **Meeting electronic recording requirements of Appendix H Section V**
   b. **Meeting Control requirements of Appendix H Section VI**
   c. **Meeting requirements of CFIA (as applicable in Canadian Installations)**

Mode 3:

1. **Prove safe and reliable PPR recording/Control while creating paper records for comparison**

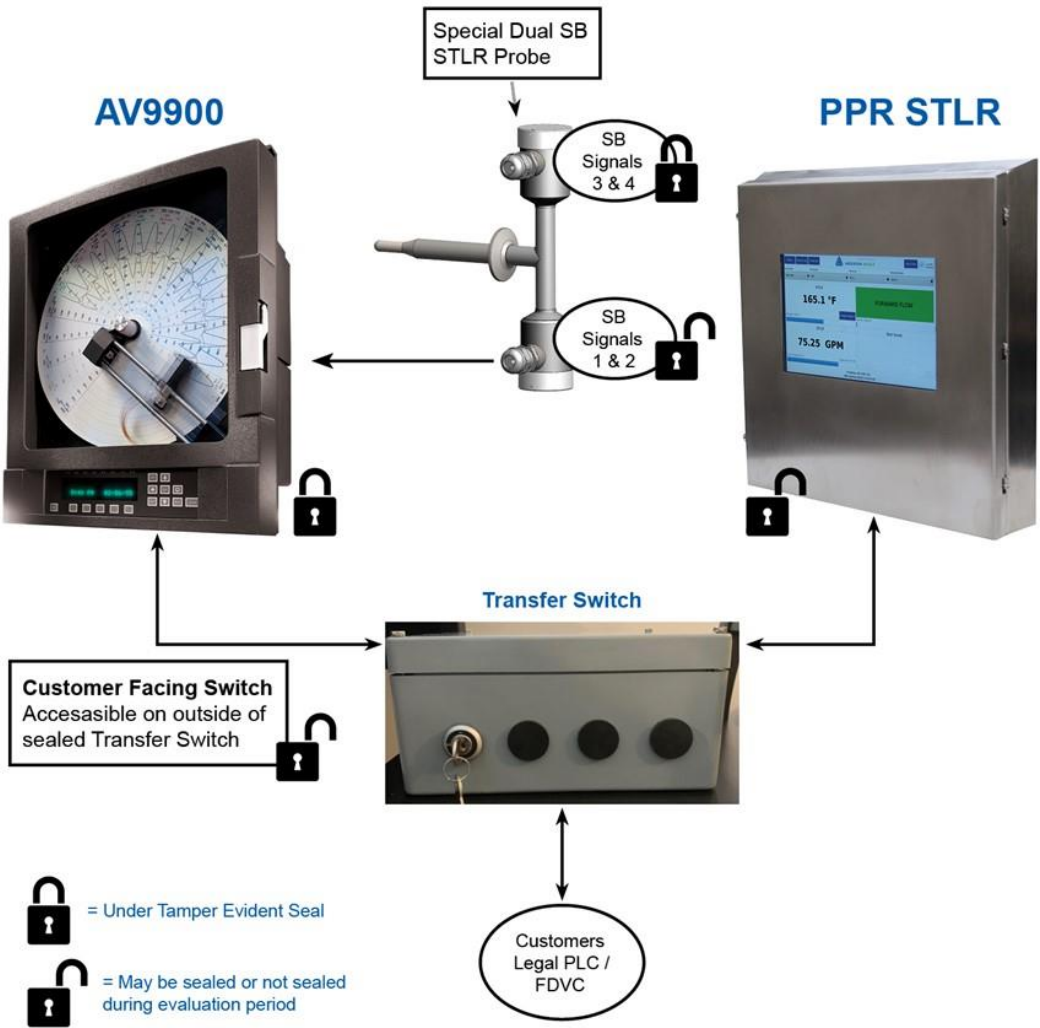| Mode	Key Switch #1 Position	Key Switch #2 Position	Process Controller
1	Single	Paper Recorder	Paper Recorder
2	Series	PPR & Series	Series Control (Both Recorders)
3	Single	PPR & Series	PPR
N/A	Series	Paper Recorder	Not Recommended (Is fail safe series control, Limited SFLR)

Process to achieve a safe 7-day comparison and validate PPR control

1. **Install the PPR recorder/controller with a 3-position transfer switch**
2. **Perform PMO Appendix I testing to ensure the system performs as expected in all 3 switch modes.**
3. **Add tamper evident seals to all equipment**
4. **For the first 7 days after installation, use the transfer switch in mode 2**
    1. gain confidence that the paperless recorder/controller is working as expected and the team is properly trained on PPR and Legendary usage
5. **Review paper and paperless records for any discrepancies**
6. **Change the transfer switch position to mode 3 to allow for the 7 day field trial while the PPR has control of the process, but the paper recorder is still being used as a backup recorder**
7. **Review paper and paperless records for any discrepancies**
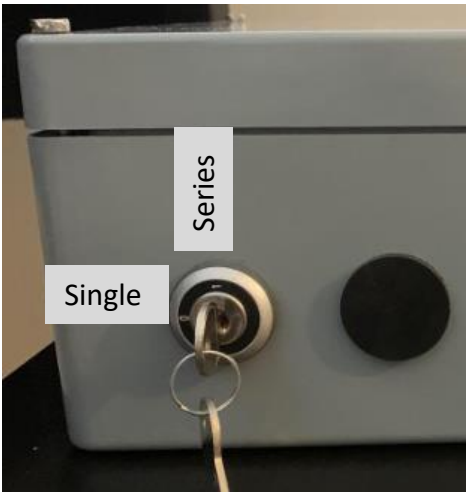8. **Review trial results with applicable regulatory bodies, uninstall the paper recorder.**

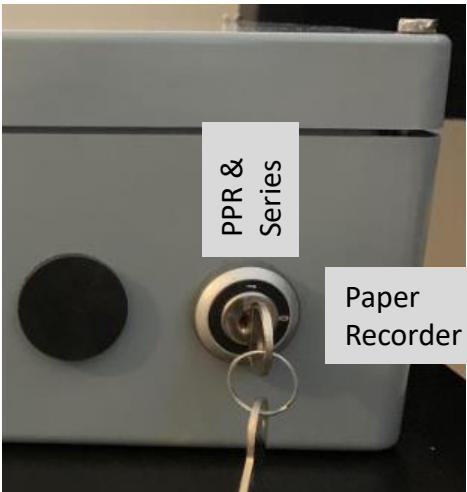| Mode	Key Switch #1 Position	Key Switch #2 Position	Process Controller
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N/A	Series	Paper Recorder	Not Recommended (Is fail safe series control, Limited SFLR)

Installation Proposal Overview:

Existing paper STLR/SFLR recorder e.g. AV9900, Honeywell, ABB

3-Position Transfer Switch Design

Key Switch #1

Key Switch #2

Mode	Key Switch #1 Position	Key Switch #2 Position	Process Controller
1	Single	Paper Recorder	Paper Recorder
2	Series	PPR & Series	Series Control (Both Recorders)
3	Single	PPR & Series	PPR
N/A	Series	Paper Recorder	Not Recommended (Is fail safe series control, Limited SFLR)

*Keys can be removed from switch to prevent inadvertent changing of transfer switch mode

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Control Scenarios

Recorder/Controller Function	Paper Recorder Sole Control [Mode = 1]		Paper Recorder & PPR Series Control [Mode = 2]		PPR Sole Control [Mode = 3]	
	AV9900	PPR	AV9900	PPR	PPR	AV9900
Safety thermal limit recording (Temp. Recording)	Record	Record	Record	Record	Record	Record
Safety Flow Limit Recording (Flow Rate Recording)	Record	Record	Record	Record	Record	Record
SFLR: Loss of signal / High Limit	Control	Record	Control	Control	Control	Record
Power to Timing Pump	Control	-	Control	Control	Control	-
Control of Flow Diversion Solenoid for STLR	Control	-	Control	Control	Control	-
Record position of Flow Diversion Valve and & Leak Detect Valve (Terminal 7)	Record	Record	Record	Record	Record	Record

Scenarios when both controllers are working in series	AV9900	PPR	Outcome
#1 Control of Flow diversion Solenoid Requirement: Meeting the STLR setpoint	Not Met	Not Met	Divert
	Met	Not Met	Divert
	Not Met	Met	Divert
	Met	Met	Forward
#2 SFLR Loss of signal and High limit alarm Requirement: loss of signal < SFLR rate < High limit	Out of Range	Out of Range	Divert
	In Range	Out of Range	Divert
	Out of Range	In Range	Divert
	In Range	In Range	Forward

Installation Requirements

» Cut seal on existing STLR and STLR temperature probe

» Replace existing STLR probe with SB (built by Anderson-Negele)

- Run additional 6 conductor shielded cable from probe to PPR

» Rewire outputs from current STLR through Transfer switch

» Wire outputs from PPR to Transfer switch

» Perform all STLR/SFLR PMO testing with transfer switch in Mode 1 (paper recorder sole control)

» Perform all STLR/SFLR PMO testing on PPR with transfer switch in Mode "2" (Series control paper/PPR)

» Perform all STLR/SFLR PMO testing on PPR with transfer switch in Mode "3" (PPR recorder sole control)

Switch installed near recorders at Cornell Dairy

Questions and Next Steps

Transfer Switch Interior Wiring Detail