Mechanical DBox Addendum

This is an addendum to the PI DBox Installation Guide for the Mechanical DBox. Included are the dip switch settings for the Mechanical Relay boards and wiring diagrams for varying site configurations.

Note: Tokheim APC dispensers are not supported.

Follow the instructions below to connect to the Mechanical DBox:

1. On the Hybrid I/O board, set the jumper (J17 for 9000-11-6601 or P12 for 9000-11-6701) for the desired interface type.
2. On the Hybrid I/O board, set the jumper (J13 for 9000-11-6601 or P11 for 9000-11-6701) for the desired control.
3. On the Hybrid I/O board, set the jumper (J11 for 9000-11-6601 or P25 for 9000-11-6701) for the desired use of Loopback.

Interface Type	Interface Jumper	Control Jumper	Loopback Jumper
PIPort	PIPORT	PIPORT	LB ON
RS232	RS232	NTXD or /TXD	LB OFF
XPort	XPORT	XPORT	LB ON
RS422 (9000-11-6701 only)	RS422	RS422	LB ON

4. Connect the dispenser wires to each Mechanical Relay board according to the appropriate wiring diagram.
5. Referring to the Mechanical Relay Dip Switch Settings table that follows, set the address for each Mechanical Relay board using SW1. This switch is also used to set the pulser type, pulse input and Console/Manual mode.
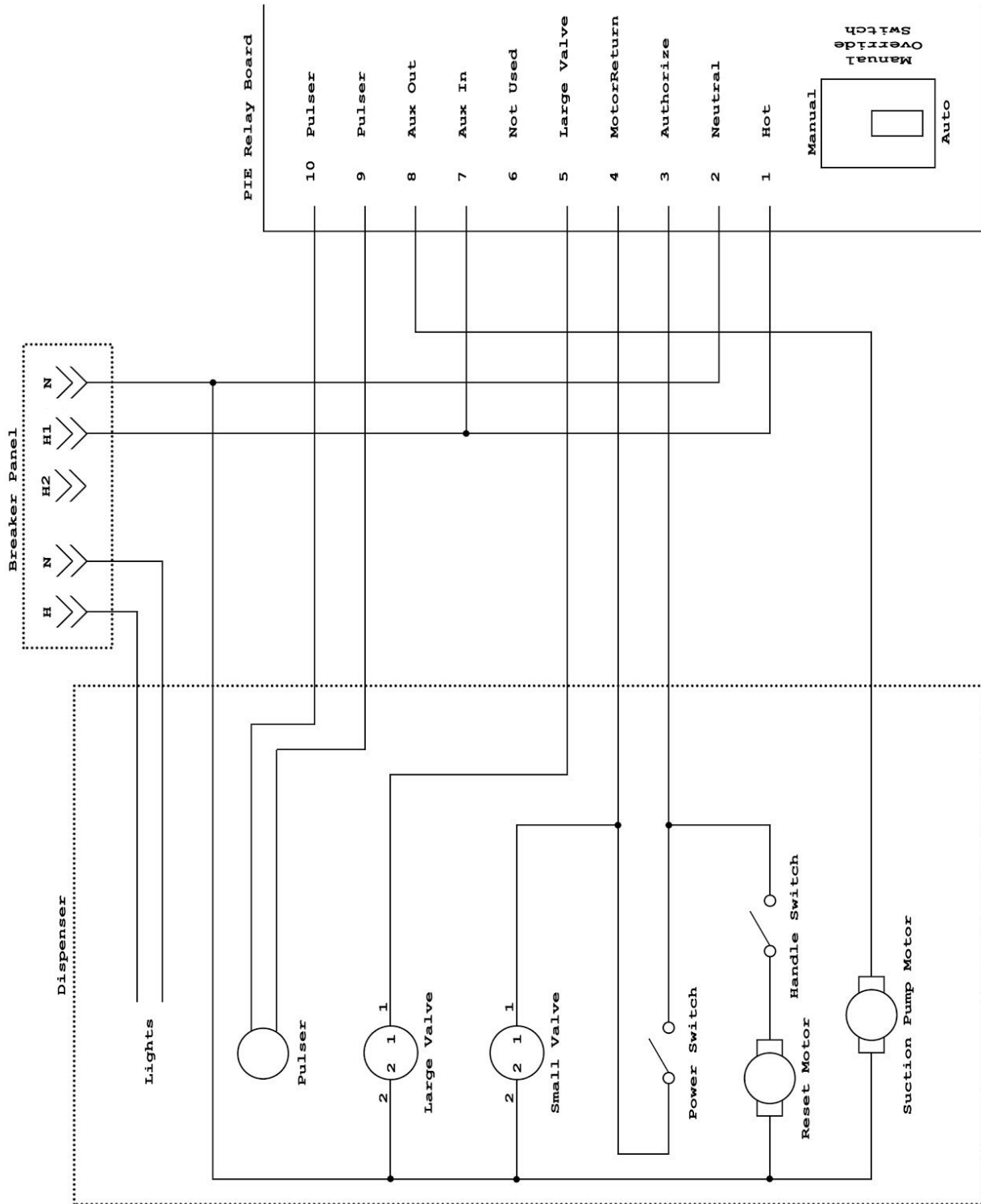

Daisy Chaining Mechanical DBoxes

The maximum number of Mechanical Relay boards that can be mounted in one cabinet is eight. Mechanical DBoxes can be chained together to get up to 16 Fueling Positions, and can be accomplished with this setup:

1. Configure both DBoxes as described above and connect the communication cable to the Hybrid I/O board of DBox A.
2. On the Hybrid I/O board, remove the interface type jumper (J17 for 9000-11-6601 or P12 for 9000-11-6701) for DBox B.
3. On the Hybrid I/O board, remove the control jumper (J13 for 9000-11-6601 or P11 for 9000-11-6701) for DBox B.
4. Chaining:
    a. For Hybrid I/O board 9000-11-6601, connect a Hybrid DBox Daisy Chain Cable (9000-15-9020) from CHAIN (J19) of DBox A to CHAIN of DBox B.
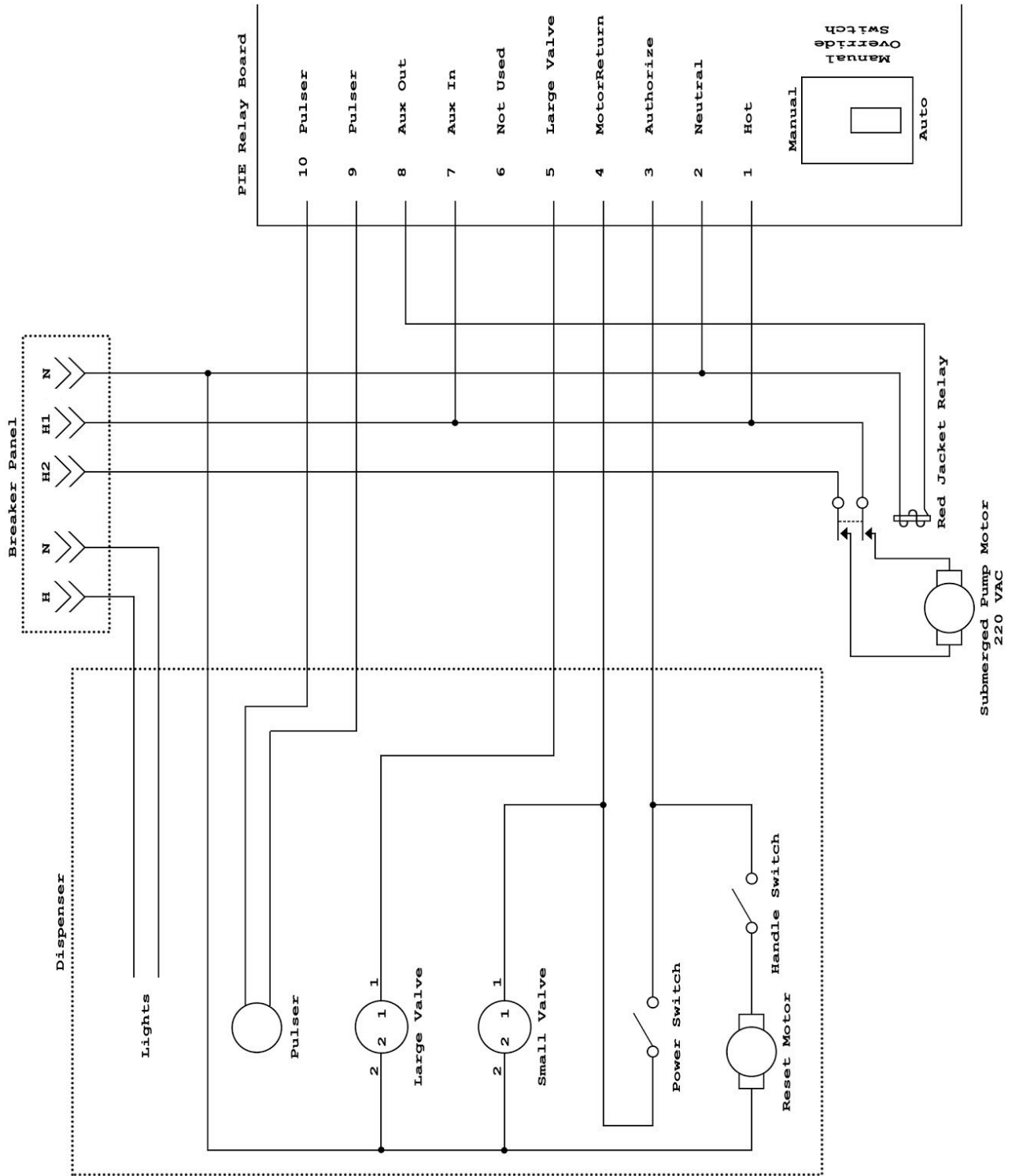   b. For Hybrid I/O board 9000-11-6701, connect a CAT5 cable from LINK (J4) of DBox A to LINK of DBox B.

Dip Switch Settings

SW1		1	2	3	4	5	6	7	8
Address	1	ON	ON	ON	ON	---	---	---	---
	2	OFF	ON	ON	ON	---	---	---	---
	3	ON	OFF	ON	ON	---	---	---	---
	4	OFF	OFF	ON	ON	---	---	---	---
	5	ON	ON	OFF	ON	---	---	---	---
	6	OFF	ON	OFF	ON	---	---	---	---
	7	ON	OFF	OFF	ON	---	---	---	---
	8	OFF	OFF	OFF	ON	---	---	---	---
	9	ON	ON	ON	OFF	---	---	---	---
	10	OFF	ON	ON	OFF	---	---	---	---
	11	ON	OFF	ON	OFF	---	---	---	---
	12	OFF	OFF	ON	OFF	---	---	---	---
	13	ON	ON	OFF	OFF	---	---	---	---
	14	OFF	ON	OFF	OFF	---	---	---	---
	15	ON	OFF	OFF	OFF	---	---	---	---
	16	OFF	OFF	OFF	OFF	---	---	---	---
Pulser	Penny Pulses	---	---	---	---	ON	---	---	---
	Volume Pulses	---	---	---	---	OFF	---	---	---
Pulse Input: Only used if SW5=OFF	0.1 Unit per Pulse	---	---	---	---	---	ON	---	---
	0.01 Unit per Pulse	---	---	---	---	---	OFF	---	---
Manual Mode	Console Control	---	---	---	---	---	---	---	ON
	Self Control	---	---	---	---	---	---	---	OFF

Preset Dispenser – Suction Pump

Preset Dispenser – Sub Pump

High Flow Dispenser

PIE Relay Board

- 10 Pulser
- 9 Pulser
- 8 Aux Out
- 7 Aux In
- 6 Not Used
- 5 Large Valve
- 4 MotorReturn
- 3 Authorize
- 2 Neutral
- 1 Hot

Manual Override Switch

Manual

Auto

Breaker Panel

N
H1
H2

Red Jacket Relay

Submerged Pump Motor

Dispenser

Pulser

Large Valve
1
2

Handle Switch
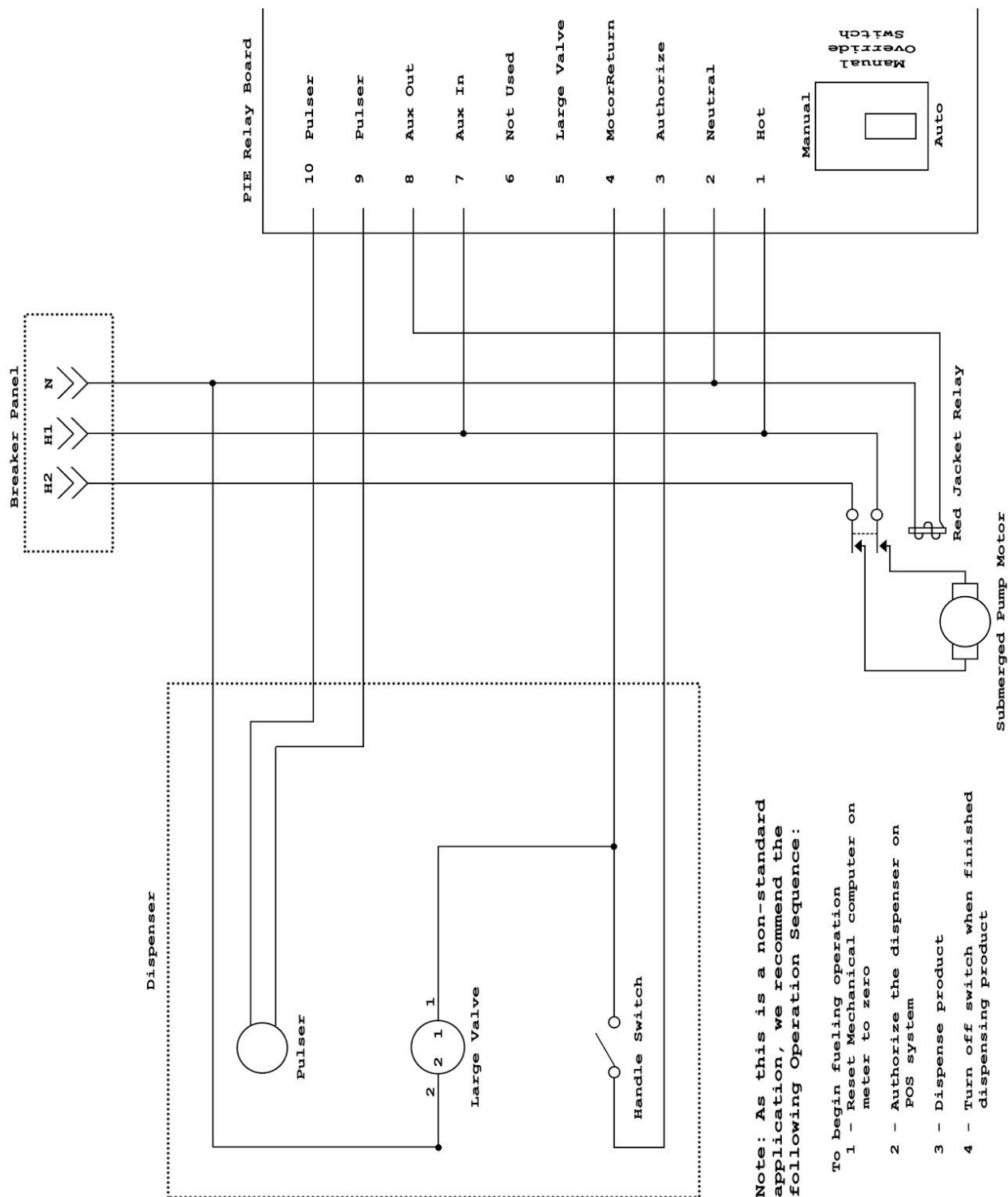
Note: As this is a non-standard application, we recommend the following Operation Sequence:

To begin fueling operation
1 - Reset Mechanical computer on meter to zero

2 - Authorize the dispenser on POS system

3 - Dispense product

4 - Turn off switch when finished dispensing product