




Safety Procedures



# WARNING



Dangerous environment.  
Highly flammable/explosive fuels and high voltage are present.  
Failure to observe all safety precautions could result in serious injury or death.  
Observe all safety precautions as outlined in Gasboy® manuals.

Installation Procedures

1.
- Install a single EMERGENCY POWER CUTOFF control to remove AC power from site dispensing equipment. [The control is an additional safety feature, and not a substitute for National Electrical Code (NEC®)/National Fire Protection Association (NFPA) 30 circuit breaker requirements].  
Label the EMERGENCY POWER CUTOFF switch and instruct owner to keep area clear of obstacles.

IMPORTANT INFORMATION

Devices such as Distribution Boxes (D-Boxes), two-wire, and so on, must be de-energized or have wiring disconnected from the dispenser by the emergency stop or equivalent mechanism. Third-party devices such as those supplying power or any form of communication to a dispenser (intercoms, third-party controllers, and so on) must also be de-energized or the wiring supplying that power be disconnected when activating the emergency power cutoff control or equivalent mechanism. Provision to accommodate this must not introduce noise [Radio Frequency Identifier (RFI) or electrical] into sensitive pump/dispenser electronic field wiring circuits during normal pump/dispenser operation. De-energizing of the external equipment through the emergency stop or equivalent device is recommended.

2.
- Connect an insulated grounding conductor from the dispenser power panel to the site grounding electrode (size per NEC).

3.
- Install power breakers to each circuit leading to each dispensing unit and to each Submersible Turbine Pump (STP). It must be capable of simultaneously disconnecting hot and neutral conductors. Gasboy requires the Micro breaker rating to be ≤ 15 A.  
*Note: In Canada, switching neutral is contrary to the Canadian Electrical Code (CEC), reference part 1, rule 14-014.*

4.
- Only field wiring connections are shown in the Junction boxes (J-boxes). Cap all unused wires. Local and NEC may apply.
5.
- Install conduit per NEC for hazardous locations. Potting is required for conduit that passes through any portion of a hazardous vapor area to ensure vapor barrier integrity.  
Wires - All wires are 14 American Wire Gauge [AWG (copper stranded)] unless otherwise noted. Dispenser ground wire is 12 AWG (copper stranded).  
Power loading and distance run may require larger wire size.  
Wire all circuits NEC Class 1, except wiring to speaker (intercom) and call button, which must be NEC Class 2. Gasboy two-wire is NEC Class 1 and may share the main power conduit.  
Diesel Exhaust Fluid (DEF) is a non-flammable fluid and does not generate explosive vapors. Generally wiring as related to DEF dispensers need not comply with requirements for hazardous locations (electrical safety requirements still apply) unless the unit is installed in a Class 1 Division 2 area of another pump/dispenser handling hazardous flammable or explosive fuels. Refer to the hazardous location drawing for the equipment involved.  
Generally for Gasboy equipment handling hazardous fuels, the hazardous location extends 20 feet from the base of the unit to a height of 18 inches from the forecourt and island. Consider future installation of equipment handling hazardous fuels that may be located near the DEF dispenser.

6.
- Two-wire communication wiring: For installations with “new” wiring, use Unshielded Twisted Pair (UTP) data wires. Wiring Spec: 10-12 twists per foot, 18 AWG up to 1000-foot runs (2000 feet total) or 14 AWG up to 2600 foot runs (5200 feet total) unshielded, 300 V minimum, stranded annealed copper tinned wire, Polyvinyl Chloride (PVC) insulation of type TFFN, THHN, or MTW, Underwriters’ Laboratories (UL®) approved gasoline and oil-resistant. Reference C&M Corporation Part #27525 (18 AWG) or equivalent. Refer to *MDE-4333 Atlas™ Fuel Systems Site Preparation Manual* requirements where 14 AWG may be required.

7.
- Consult manufacturer specifications for wire nuts to determine maximum number of wires that may be used per nut.
8.
- STP isolation relay boxes are required by NEC 514-6 to:

a. Allow service of one unit safely without removing power from all dispensing equipment.

b. Prevent damage to equipment from cross-phasing. Damage caused by cross-phasing is not covered by warranty.  
(Use local supplier for isolation relay boxes).

9.
- Do not provide service loops or leave excess wire in electronics cabinet. Cut all wire lengths to size sufficient to reach termination without stress or excess. Dress all wires neatly along surfaces so as not to obstruct access to terminations and devices.

10.
- To avoid damage to the Central Processing Unit (CPU) PC Board, all unused wires must be individually capped. Before applying power, you must verify that the reset complete, fast flow, submersible starter drive wires are not shorted to conduit or chassis.

11.
- Submersible starter drive line can supply 300 mA AC maximum to control submersible starter relays. This line must not be directly connected to a STP.

12.
- When using remote dispensers, external STP relays are required unless the remote dispenser is equipped with the submersible drive relay option. The submersible drive relay option provides a STP drive line (motor 1 hot), which can directly drive a STP up to 3/4 HP at 115 VAC or 1-1/2 HP at 230 VAC. The 14 gauge motor 1 or 2 feed and motor 1 or 2 hot wires are always present. Verify that the submersible drive relay option is installed prior to wiring. The power supplied to the motor 1 or 2 feed must be able to handle the load of the STP.

13.
- Reset complete (switch detect) line can supply 170 mA AC maximum for connecting to Fuel Management System (FMS) circuitry and in applications where control of a remote slow flow valve (satellite) is required.

14.
- Fast flow line can supply 170 mA AC maximum is provided to allow for control of a satellite along with remote control or monitoring of the fast flow valve found in the pump.

15.
- If the AUTH (control/pump motor feed) line is controlled by a FMS using solid state relays, a resistor assembly must be installed between the control feed line and feed neutral to prevent false triggering of the authorization input. The resistor assembly is 8.2 k Ohm, 10 Watt (P/N C05818) for 115/230 VAC domestic and 30 k Ohm, 10 Watt (P/N C06683) for 230 VAC international wiring.

16.
- When used with an above ground tank, the valve mounted at the tank MUST NOT be connected to the reset complete or submersible starter drive lines. If the optional internal relay kit is installed and the valve's current draw will not exceed 1 A, the valve can be connected to the STP drive line. Otherwise, it should be driven from the external submersible starter relay. In all cases, the tank valve must operate at the same voltage as the STP.

17.
- When multiple dispensers are used to control a common submersible starter relay or pump, and the Atlas unit is controlled (authorized) through the AUTH (control/motor feed) line (as in the case of some FMS), it is important that the lines from the Atlas unit to the submersible equipment be isolated from each other. This can be accomplished by running the submersible control lines through a secondary set of relay contacts in the FMS. If a secondary set of contacts is not available, external control relays must be used between the Atlas unit and the submersible starter relay or pump. Another option is to provide a separate submersible starter relay for each hose outlet. In no case can the submersible drive lines from the Atlas unit be tied together.

18.
- When using remote dispensers with STP, submersible starter relays are required. However, the control circuit is capable of directly driving a STP up to 1 HP at 115/230 VAC. Any pump over these ratings will require a submersible starter relay.

19.
- If combining a remote dispenser with a FMS, the maximum HP limitation for directly driving a remote dispenser without the use of an additional relay of submersible starter must be the lower of the two components.

20.
- Internal wiring that is not field terminated may be white in color.

21.
- Wires labeled with two colors signify that the first color is the color of the wire and the second is that of the stripe. For example, BLU/WHT would indicate a blue wire with a white stripe.

22.
- For retail electronic units, DC conduit is used only in pulse-out units.

23.
- For US 240 VAC installations, wires labeled FEED must be connected to L1 and wires labeled NEUTRAL must be connected to L2.

24.
- For DEF Dispensers Only

For DEF dispensers mounted on skid tanks: Ground Fault Interrupt (GFI) breakers are required because of no underground piping, AC power in potentially wet area, and a potential for earth ground to become broken if skid tank moves. A GFI works by having a sensor that detects changes in current to the load, by comparing the current flowing to the load and the current flowing from the load. A drop off in the current equivalent to about 5 mA, turns off all power by tripping a relay within the GFI within a few hundredths of a second. When powering a dispenser with a GFI, any device that the dispenser supplies power must have its return to the same neutral as the dispenser.  
For example, the STP control relay.

25.
- For Optional TopKAT™ PLUS Only

Refer to *MDE-5013 TopKAT PLUS Installation Manual*.

Electrical Rating

Control Valves	Electric Reset Motors	Lights	DEF Heater
0.2 A @120 VAC	2.2 A @ 120 VAC	1.0 A @ 120 VAC 50/60 Hz.	8.5 A @ 120 VAC
0.1 A @ 240 VAC	1.1 A @ 240 VAC	0.5 A @ 240 VAC 50/60 Hz	

26.
- Gasboy requires the use of one separate 15 A circuit breaker per dispenser for heater power on cold weather DEF models. This breaker must be separate from the micro feed circuit breaker.

27.
- For T17448-G1 Varistor, the black wire is connected to the AC hot and the white wire is connected to the AC neutral. For T17448-G3 Varistor, the brown wire is connected to the AC hot and the blue wire is connected to the AC neutral.

IMPORTANT INFORMATION


Sharing conduit to the dispensers with other non-Gasboy devices is contrary to the installation and site preparation manuals and may void warranty.

Active STP Connections

The Atlas Dispenser	STP1	STP2
First Product .....	X.....	
Second Product .....	X.....	X...

Reference Manuals  
*MDE-4331 Atlas Fuel Systems Installation Manual*  
*MDE-4333 Atlas Fuel Systems Site Preparation Manual*

Sheet	Contents	
	Description	Models
1	Cover Sheet (Safety, notes, and specifications)	
2	Atlas Retail Dispenser with Electronic Display Pulse-out Field Wiring Diagram.	8852KX, 8853KX, 8852KXTW1, 8853KXTW1, 8852KXTW2, 8853KXTW2
3	Atlas Commercial Dispenser with Electronic Display Field Wiring Diagram.	9852KX, 9853KX, 9852KXTW1, 9853KXTW1, 9852KXTW2, 9853KXTW2
4	Atlas Retail Dispenser with Mechanical Display Field Wiring Diagram.	91/8752KX, 91/8753KX, 91/8752KXTW1, 91/8753KXTW1, 91/8752KXTW2, 91/8753KXTW2
5	Atlas Commercial Dispenser with Electronic Display Field Wiring Diagram.	9840KX
6	Atlas Commercial Dispenser with Electronic Display Field Wiring Diagram.	9850KX
7	Atlas DEF Dispenser with Electronic Display Field Wiring Diagram.	9862KX
8	Atlas Warm Weather DEF Dispenser with Electronic Display Field Wiring Diagram.	9862KXWW
9	Atlas Commercial E85 Dispenser with Electronic Display Field Wiring Diagram.	9872KX, 9872KXTW1



# GASBOY

Used On

Atlas Retail, Commercial, E-85, and DEF Dispensers with Mechanical and Electronic Displays.

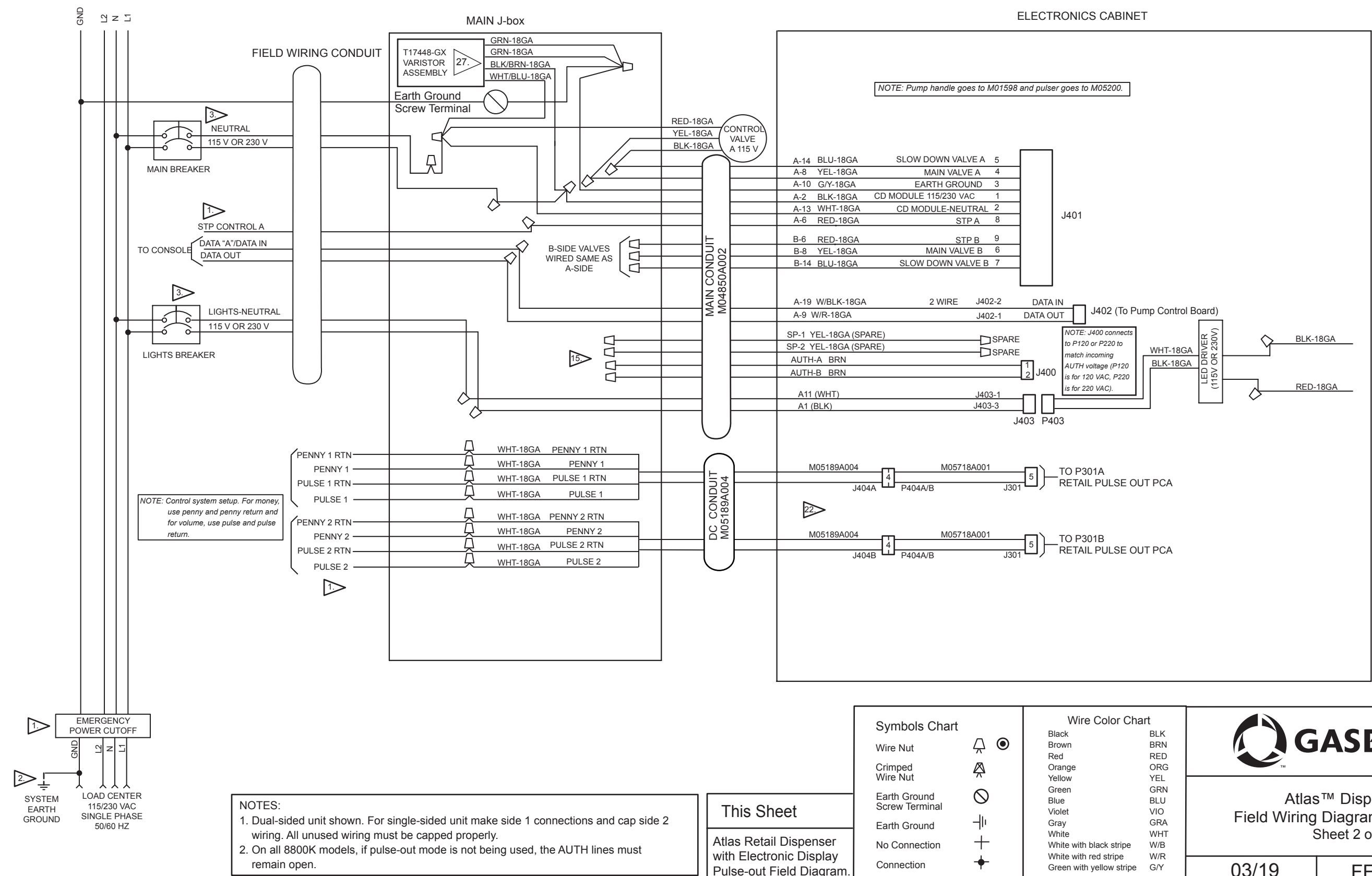
Atlas™ Dispenser Field Wiring Diagram Instructions Sheet 1 of 9

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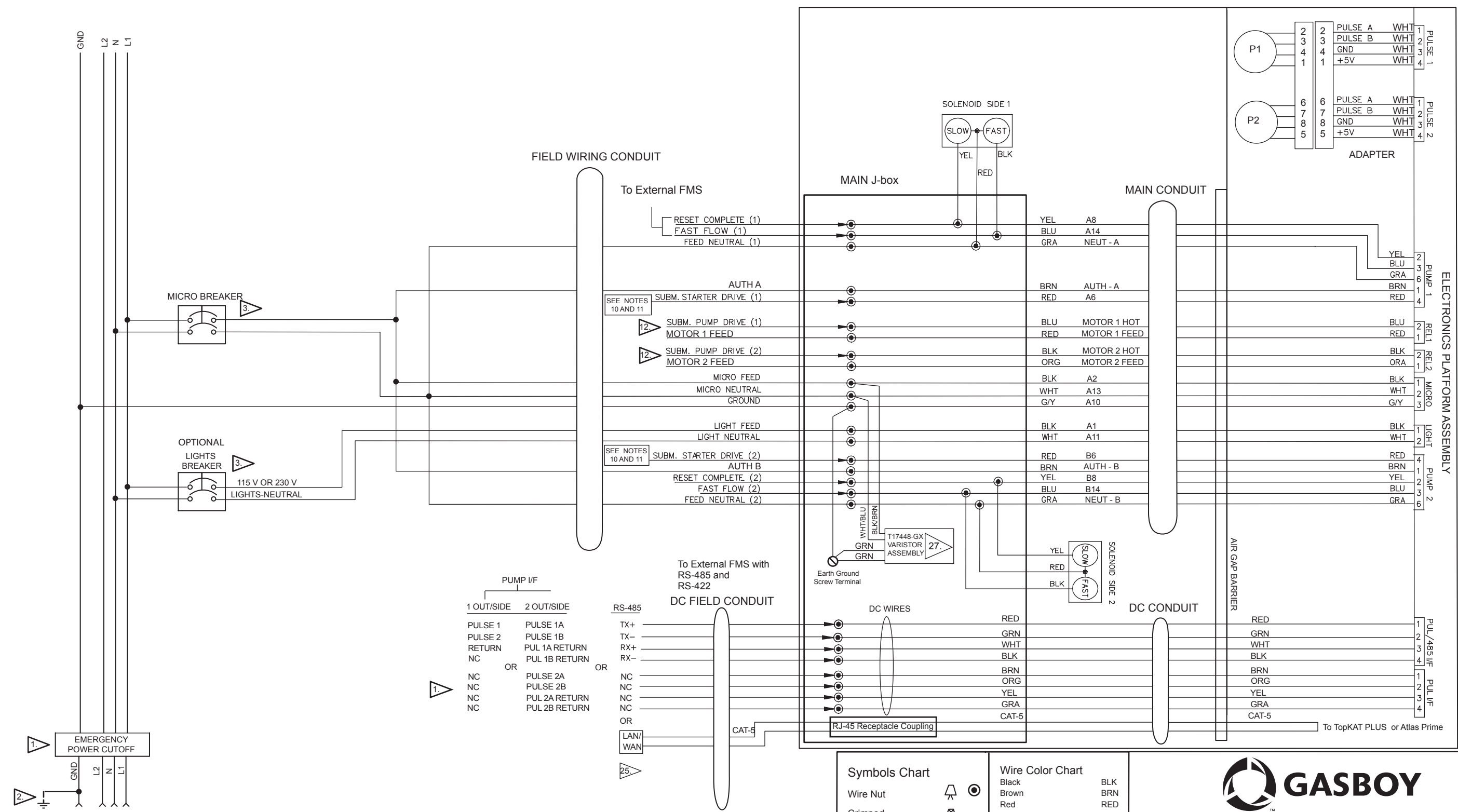
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RETAIL ELECTRONIC UNIT

MODELS: 8852KX, 8853KX, 8852KXTW1, 8853KXTW1, 8852KXTW2, 8853KXTW2



COMMERCIAL ELECTRONIC UNIT      MODELS: 9852KX, 9853KX, 9852KXTW1, 9853KXTW1, 9852KXTW2, 9853KXTW2



NOTE: Dual-sided unit shown. For single-sided unit make side 1 connections and cap side 2 wiring. All unused wiring must be capped properly.

**This Sheet**

Atlas Commercial Dispenser with Electronic Display Field Wiring Diagram.

**Symbols Chart**

Wire Nut	
Crimped Wire Nut	
Earth Ground Screw Terminal	
Earth Ground	
No Connection	
Connection	

**Wire Color Chart**

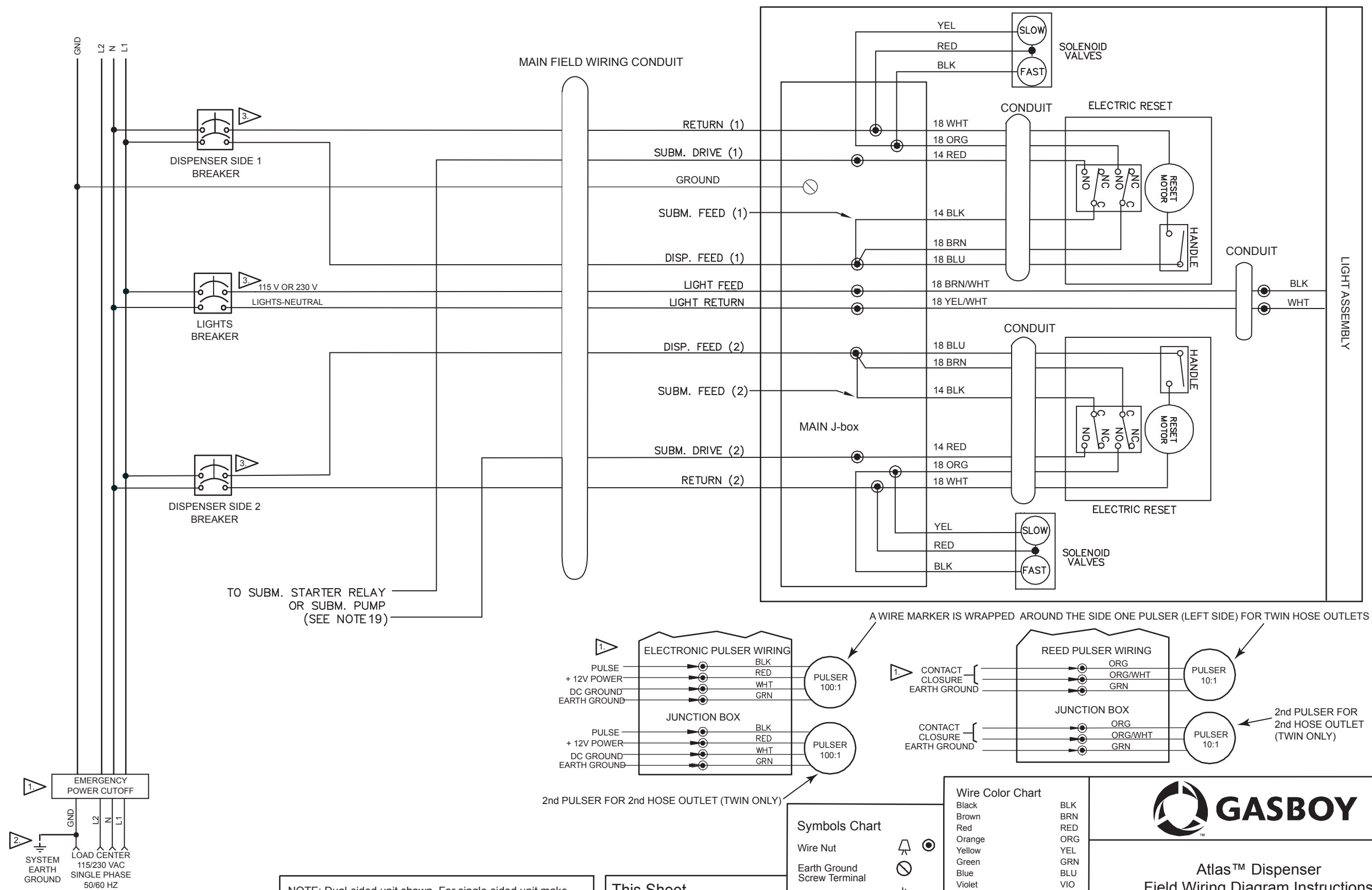
Black	BLK
Brown	BRN
Red	RED
Orange	ORG
Yellow	YEL
Green	GRN
Blue	BLU
Violet	VIO
Gray	GRA
White	WHT
White with black stripe	W/B
White with red stripe	W/R
Green with yellow stripe	G/Y

**Atlas™ Dispenser**

**Field Wiring Diagram Instructions**

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NOTE: Dual-sided unit shown. For single-sided unit make side 1 connections and cap side 2 wiring. All unused wiring must be capped properly.

**This Sheet**

Atlas Retail Dispenser with Mechanical Display Field Wiring Diagram.

Symbols Chart	
Wire Nut	
Earth Ground Screw Terminal	
Earth Ground	
No Connection	
Connection	

Wire Color Chart	
Black	BLK
Brown	BRN
Red	RED
Orange	ORG
Yellow	YEL
Green	GRN
Blue	BLU
Violet	VIO
Gray	GRA
White	WHT
White with black stripe	W/B
White with red stripe	W/R
Green with yellow stripe	G/Y

Atlas™ Dispenser  
Field Wiring Diagram Instructions  
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MODEL: 9840KX

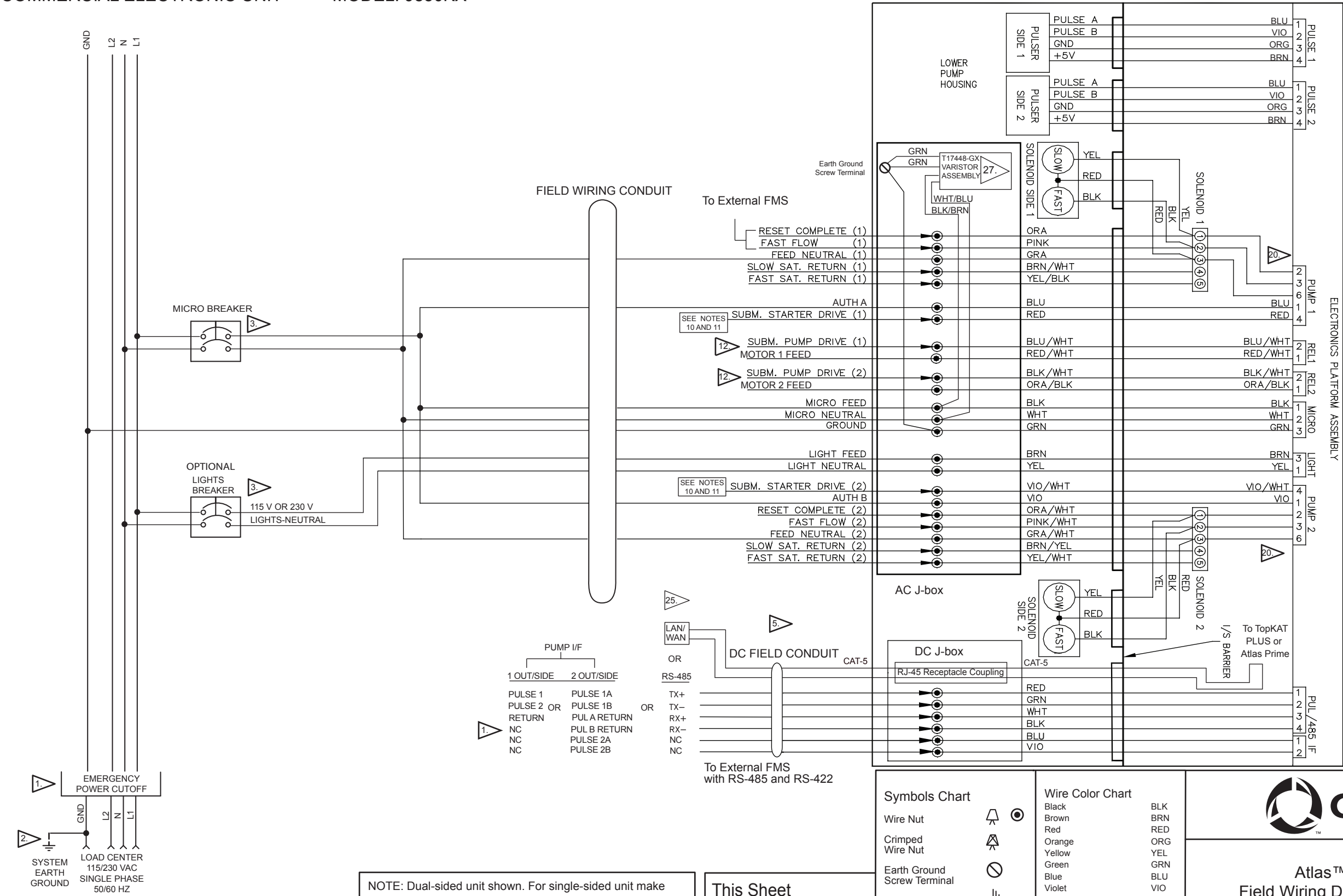


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COMMERCIAL ELECTRONIC UNIT      MODEL: 9850KX



NOTE: Dual-sided unit shown. For single-sided unit make side 1 connections and cap side 2 wiring. All unused wiring must be capped properly.

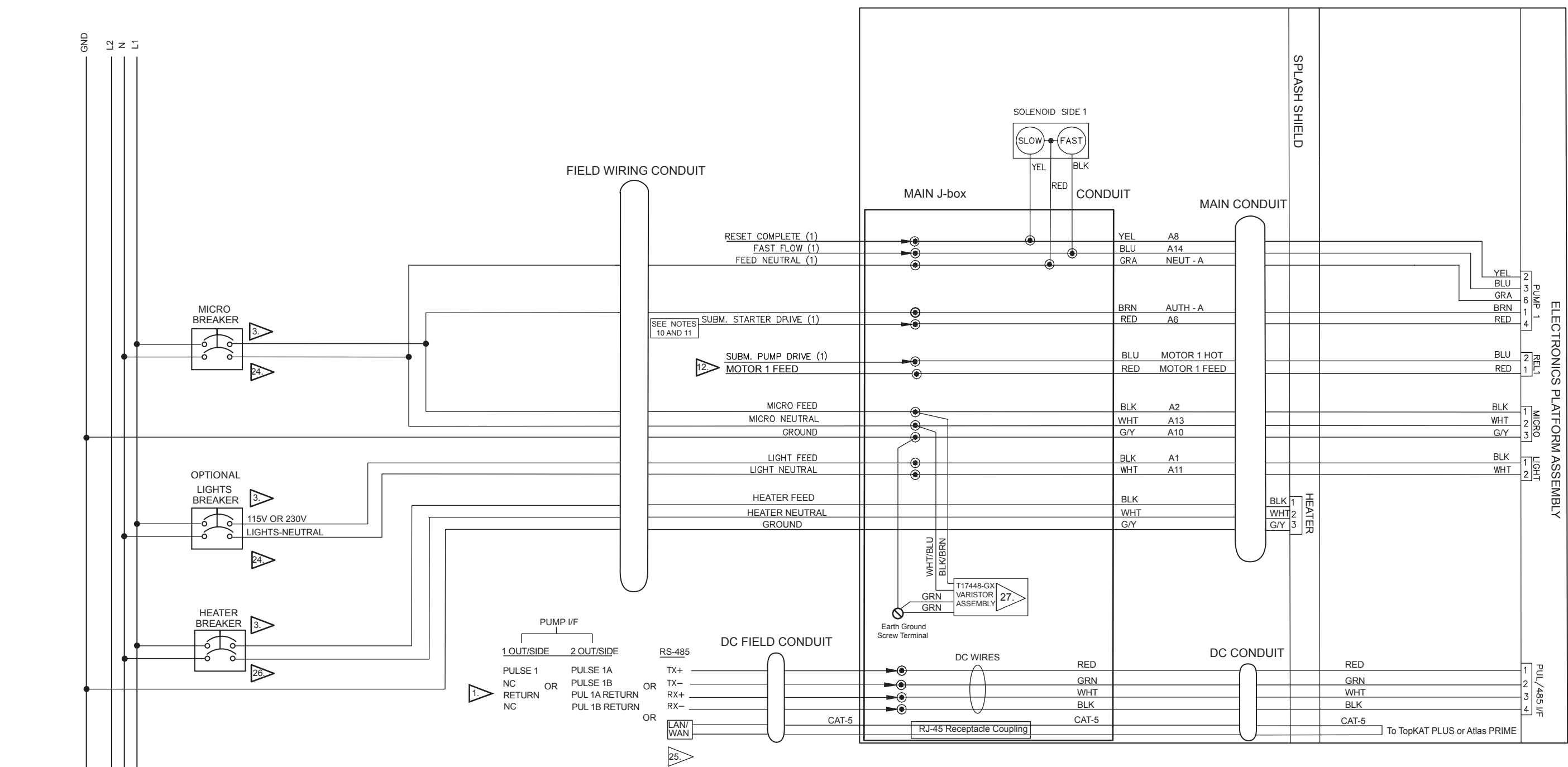
This Sheet  
Atlas Commercial Dispenser  
with Electronic Display Field  
Wiring Diagram.

**Symbols Chart**

Wire Nut	
Crimped Wire Nut	
Earth Ground Screw Terminal	
Earth Ground	
No Connection	
Connection	


**Wire Color Chart**

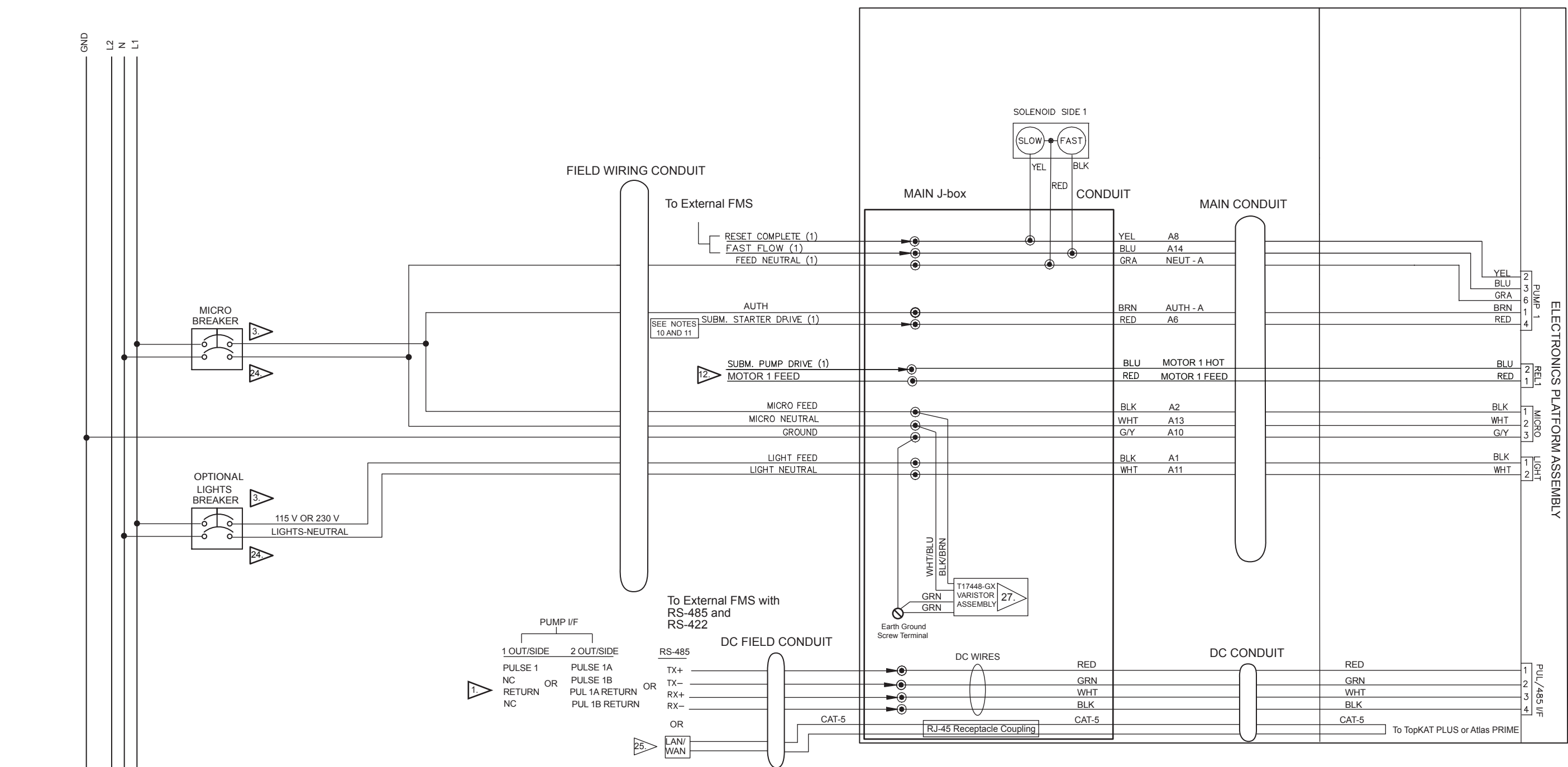
Black	BLK
Brown	BRN
Red	RED
Orange	ORG
Yellow	YEL
Green	GRN
Blue	BLU
Violet	VIO
Gray	GRA
White	WHT
White with black stripe	W/B
White with red stripe	W/R
Green with yellow stripe	G/Y



NOTE: Make side 1 connections. All unused wiring must be properly capped.

This Sheet  
Atlas DEF Dispenser  
with Electronic Display Field  
Wiring Diagram.

Symbols Chart		Wire Color Chart		 <b>Atlas™ Dispenser</b> Field Wiring Diagram Instructions Sheet 7 of 9	
Wire Nut		Black	BLK		
Crimped Wire Nut		Brown	BRN		
Earth Ground Screw Terminal		Red	RED		
Earth Ground		Orange	ORG		
No Connection		Yellow	YEL		
Connection		Green	GRN		
		Blue	BLU		
		Violet	VIO		
		Gray	GRA		
		White	WHT		
		White with black stripe	W/B		
		White with red stripe	W/R		
		Green with yellow stripe	G/Y		



NOTE: Make side 1 connections. All unused wiring must be capped properly.

This Sheet  
Atlas Warm Weather  
DEF Dispenser with Electronic  
Display Field Wiring Diagram.

Symbols Chart		Wire Color Chart	
Wire Nut		Black	BLK
Crimped Wire Nut		Brown	BRN
Earth Ground Screw Terminal		Red	RED
Earth Ground		Orange	ORG
No Connection		Yellow	YEL
Connection		Green	GRN
		Blue	BLU
		Violet	VIO
		Gray	GRA
		White	WHT
		White with black stripe	W/B
		White with red stripe	W/R
		Green with yellow stripe	G/Y

Atlas™ Dispenser  
Field Wiring Diagram Instructions  
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## COMMERCIAL ELECTRONIC UNIT      MODELS: 9872KX, 9872KXTW1

