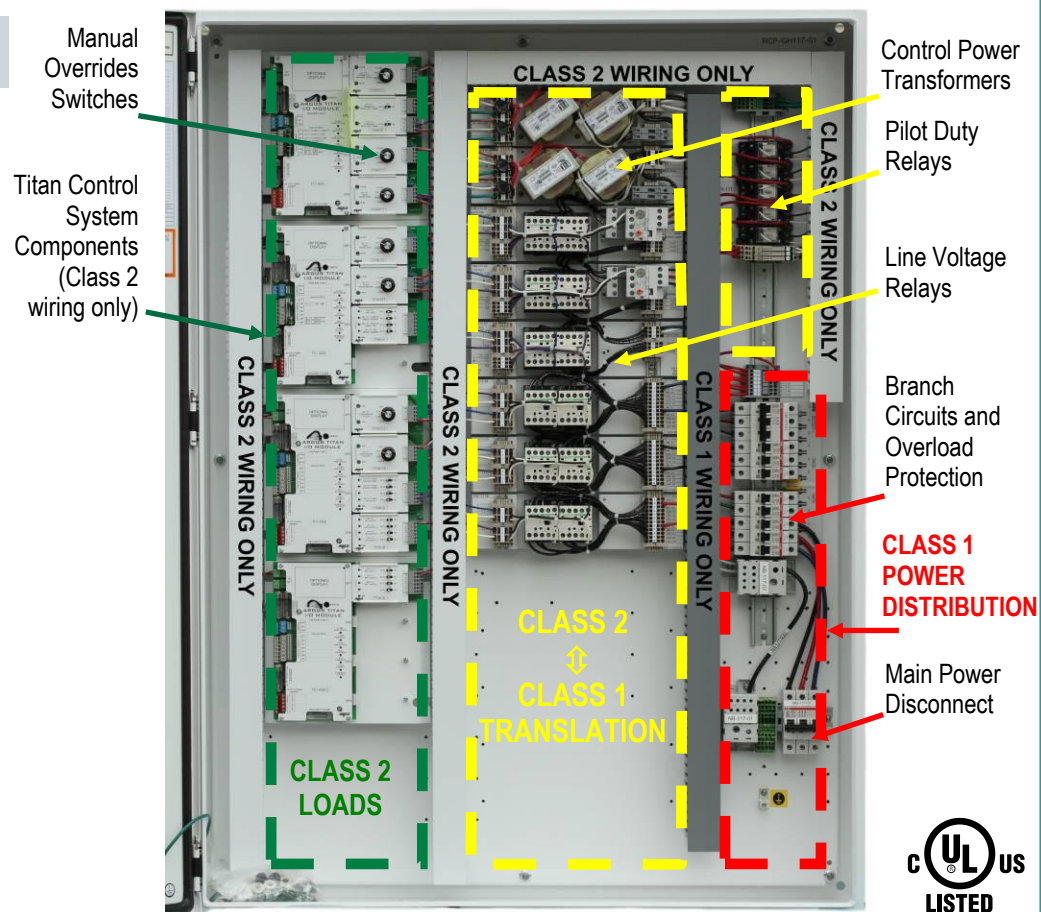


Argus Combination Panels for Line Voltage Interfacing

Argus can provide custom engineered combination panels* containing the Argus Titan control hardware along with prewired power distribution and line voltage relays matched to the controlled loads. Combination panels are well suited to new construction and major retrofits. They can be situated in centralized power rooms or distributed throughout your facility near the controlled equipment. A selection of standard relay interfacing modules is available to suit most applications (see the selection chart on page 4). For special applications, custom relays and motor starters can also be provided.

Design and Safety Features

- Space saving ‘all-in-one’ design.
- **White, powder-coated Nema 4 enclosures** are heat reflective, and water resistant. Nema 4x panels are also available where enhanced corrosion resistance is required.
- Panels are engineered to maintain **proper separation between Class 1 and Class 2 low voltage equipment and wiring:**
 - **Class 1 and Class 2 components and wireways are clearly marked, color coded, and segregated** within the panels for maximum safety and isolation of sensor and communications cabling from potential sources of electrical interference.
 - A segregated **Class 2 ↔ Class 1 Transition Area** facilitates the field installation of power transformers, isolating relays, contactors, and motor overloads where required.
 - **A Class 1 power distribution** section accommodates the fuses and breakers required to distribute power and protect all wiring.
- **Meets NEC, CEC & UL standards** – no panel inspections are required in the field.
- Line voltage relay **modules are factory matched to each load.**
- Panels are carefully **engineered to ensure proper grounding and protection of all internal components** when connected to a good earth ground.



Alternatives

** Argus can also provide separate enclosures for the control and line voltage interfacing components.*



Argus Combination Panels

Advantages

- Panels are **available in many sizes**
- Panels are **shipped fully prewired, tested, labelled, and ready for installation.**
- **Greatly reduces expensive on-site electrical work and commissioning time.**
- **All interconnect wiring is completed at the factory.** Compared to separated panels, combination panels eliminate the on-site wiring between control, line voltage relay panels and power distribution panels. Depending on your applications and facility layout, combination panels may significantly reduce the number of field wiring runs and run lengths, as well as installation time, complexity, and costs.
- **Full shop drawings are provided** with every panel to support installation and troubleshooting
- **Simplifies troubleshooting.** All control and electrical components are clearly organized and labelled within one enclosure. Easily accessible manual overrides and disconnects make it simpler and safer to test and isolate circuits for servicing.
- **Argus monitors the temperature** of each panel to confirm operation within acceptable temperatures.

More about Class 1 and Class 2 Components

The control outputs on the Argus Titan system are designed for direct connection to **Class 2 low-voltage loads only**. This provides maximum installation ease, safety for access, power isolation, and a clear separation of the low and line voltage components. Whenever line voltage equipment is controlled, separate interfacing relays are used. Because these relays are mounted on separate modules, it is generally safe to access the control hardware sections of the panels.

However, any panels or sections of panels containing Class 1 components and wiring use higher voltages and currents and should only be accessed by qualified personnel. Care must always be taken to properly power down and disconnect these circuits at the fuse or breaker prior to servicing.

Panel Mounting and Location Selection

Argus **NEMA 4 and NEMA 4x** enclosures are outdoor rated and water proof. Although these enclosures are designed for mounting in wet and harsh locations, we strongly recommend that you do not mount them where they will be routinely exposed to sprays or water. This is because you will need to access these panels for servicing reasons and an open door is an invitation to water damage and safety issues (you don't want to be working on electrical equipment while standing in a puddle!).

To protect the water tight integrity of your panels, never drill holes or bring cables in through the top of the boxes. All wiring feeds should be provided through the sides or bottom of the panels (bottom is preferred). Panels are designed to be mounted on metal or wood supports, but ideally should be stood off a few inches to facilitate cooling. Even though they are highly heat reflective, the panels should be protected from exposure to hot sun if possible, particularly afternoon sun. A separate sun cover should be provided if long exposures cannot be avoided. Heat is the enemy of all electrical equipment: over 100 °F (~40 °C) is bad, and 120 °F (~50 °C) is the absolute limit for many electrical components.

Argus Combination Panel Components

Titan Control Hardware



When the Titan control hardware is mounted in the same panel as the line voltage interfacing equipment, **Argus completes all in-panel wiring between components.** The manual control signal overrides on the Titan I/O module output relays provide a handy means for equipment and relay testing, as well as for emergency operation. All wiring connections in the Titan control hardware section are Class 2 low voltage.

Line Voltage Relay Modules



All Line voltage relay components are factory prewired on easily removable mounts complete with screw terminals to accept all field wiring terminations. These modules provide safe separation of the low voltage class 2 wiring on the left side of the components and the line voltage wiring on the right. See the selection table on the following page for a comparison of features and specifications.

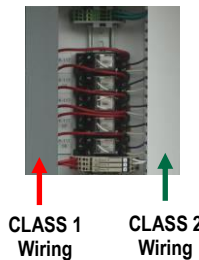
Power Distribution Center



Locating power distribution in the Argus panels can significantly reduce the number and length of wiring runs, particularly in highly distributed layouts. A single electrical feed is supplied to the panel, and power is then distributed to the branch circuits originating in the box.

Maintenance and troubleshooting for controlled circuits is easier and safer when the Titan control components, manual overrides, overload protections, and relay contacts are in the same enclosure.

Pilot Duty Relays



DIN rail mounted 6mm wide, socketed single-pole pilot duty relays are available for translating between 24-volt Class 2 control signals and Class 1 signals (typically 120V).

This is useful when interfacing Argus systems to existing electrical equipment that does not comply with Class 2 electrical safety requirements. These modules provide safe separation of the low voltage Class 2 wiring on the right side of the components and the Class 1 line voltage wiring on the left.

Control Power









RM-2TX75 modules provide control power for Argus line voltage interfacing modules and can also be used to power other Class 2 equipment. With the secondary winding ground removed these transformers can also be used to power the Titan I/O network power supply board.

The module consists of two 120V/24V Class 2, energy limiting transformers with primary winding fuses and secondary output transient voltage protection. These modules provide safe separation of the low voltage Class 2 wiring on the left side of the components and the Class 1-line voltage wiring on the right.

Line Voltage Interface Module Selection Table

The table below describes the range of standard line voltage interfacing modules available from Argus. These prewired modules are specially designed for efficient mounting into Argus panels. They support the majority of line voltage interface requirements for controlling typical electrical equipment such as fans, lights, pumps, and motors. For additional information, please refer to the data sheets for each part.



Argus Part Number	Dimensions for all Modules: 11" x 3" (length x width) Mounting Centers at 10.5"	Description	Single Phase Rating	Three Phase Rating	Relay Type	Class 2 Coil Rating	Max Modules per 75VA TX	Thermal Overload Protection*	Reversing Motors	2-speed Motors	Mechanical Interlock	Ballasted Lighting Loads	Independently Controlled Loads	Max Switching Current (amps)**	Max Switching Volts	Wire Terminals
RM-2CG		15A Dual Contactor Module	120 VAC - 1 HP 240 VAC - 2 HP	208/240 VAC - 3HP 480 VAC - 7.5 HP 600 VAC - 7.5 HP	Dual IEC-style 20A 3-pole mini contactors	24 VAC 50/60Hz 6 VA	4	✗	✗	✗	✗	✗	2	15	575 VAC	12 - 22 AWG
RM-2DP-4		20A Dual Contactor Module	120 VAC - 1 HP 240 VAC - 2 HP	208/240 VAC - 3HP 480 VAC - 10 HP 600 VAC - 10 HP	Dual IEC-style 20A rated 3-pole contactor	24 VAC 50/60Hz 8VA	4	✗	✗	✗	✗	✓	2	20	575 VAC	10 - 22 AWG
RM-1CG-OL-2		15A Single Contactor Module w/Overload	120 VAC - 1 HP 240 VAC - 2 HP	208/240 VAC - 3HP 480 VAC - 7.5 HP 600 VAC - 7.5 HP	Single IEC-style 20A 3-pole mini contactors	24 VAC 50/60Hz 6VA	8	✓	✗	✗	✗	✗	1	15	575 VAC	12 - 22 AWG
RM-2CGR-OL-1P-2		15A Single Phase Reversing Motor w/OL	120 VAC - 1 HP 240 VAC - 2 HP	N/A	Dual IEC-style 20A 3-pole mini contactors	24 VAC 50/60Hz 6 VA	8	✓	✓	✓	✓	✗	1	15	240 VAC	12 - 22 AWG
RM-2CGR-OL-3P-2		15A Three Phase Reversing Motor w/OL	N/A	208/240 VAC - 3HP 480 VAC - 7.5 HP 600 VAC - 7.5 HP	Dual IEC-style 20A 3-pole mini contactors	24 VAC 50/60Hz 6 VA	8	✓	✓	✓	✓	✗	1	15	575 VAC	12 - 22 AWG
RM-2CGR		15A Reversing Motor Module	120 VAC - 1 HP 240 VAC - 2 HP	208/240 VAC - 3HP 480 VAC - 7.5 HP 600 VAC - 7.5 HP	Dual IEC-style 20A 3-pole mini contactors	24 VAC 50/60Hz 6 VA	8	✗	✓	✓	✓	✗	1	15	575 VAC	12 - 22 AWG

* Specify the required overload range when ordering. See the data sheets for each module for additional information.

** Module load ratings are lower than the contactor ratings to extend operating life.

