

Car Wash

*The OEM and Installers Guide to Control
Components for Car Washes*



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About c3controls

Since 1976 c3controls (c3controls.com) has provided OEMs and electrical equipment builders a comprehensive portfolio of industrial control products that meet the most demanding applications. By maintaining strict control over the development and manufacturing of all products, c3 can provide customers extraordinary value through unmatched quality, competitive pricing, same-day shipping and a 36-month product warranty. This vertically integrated approach coupled with a direct sales model brings c3 closer to the end-user, fostering a degree of innovation that leads the industry.



Glossary of Terms

Automatic Car Wash:

A facility equipped with machinery and technology designed to automatically clean vehicles without manual labor. Common types include In-Bay and Tunnel Wash.

Control Panel:

An enclosure with an assembly of switches, indicators and other devices used to operate and monitor electrical equipment.

Conveyor:

A motorized track, typically consisting of a series of belts or rollers, that guides a vehicle along a predetermined path to facilitate a consistent and efficient cleaning process.

Detailing:

An extensive car care service involving the cleaning and restoration of a vehicle's interior and exterior surfaces to enhance its appearance and condition.

Dryer:

A dryer, or air-blower, removes excess water from the vehicle's surface at the end of the wash to leave it clean and streak-free.

Equipment Room:

A designated area within a car wash facility that houses tanks, pump stations, motors, control panels and more equipment necessary for car wash operation.

Friction Wash:

A wash method in which cleaning is achieved by rotating brushes, cloths or other physical elements touching the vehicle.

Full-Service Wash:

A comprehensive cleaning in which service staff execute an automatic or manual exterior wash along with an interior cleaning.

In-Bay Wash:

A facility where vehicles remain stationary in a designated wash bay while an automatic or manual wash takes place.

Motor Starter:

A device that controls the activation and operation of electric motors, initiating their function and ensuring safety and efficiency.

Pump Station:

A station, typically equipped with pumps, valves and controls, that is responsible for supplying water and cleaning solutions to the car wash while regulating flow and pressure.

Rotating Brush:

A tool attached to rotating machinery that physically scrubs and cleans the vehicle's surface with bristles or soft material.

Safety System:

A set of controls such as sensors, breakers and emergency stop buttons that ensure safe operation in a car wash facility.

Service Station:

An area at the beginning of a car wash in which a customer can select service and make payment to initiate the washing process.

Signal Light:

A visual indicator used in car wash facilities to communicate instructions or status updates to drivers during the washing process.

Sprayer:

A device that sprays cleaning solutions, water or wax onto the vehicle's surface.

Touchless Wash:

A wash method in which cleaning is achieved by high pressure sprayers and dryers so that no contact with the car is made.

Tunnel Wash:

A type of automatic car wash in which a conveyor moves vehicles through a tunnel-like structure with automated cleaning equipment.

Water Reclamation System:

An eco-friendly car wash feature that recycles and filters used water from the washing process, removing contaminants and impurities to make water suitable for reuse.

Car Wash Overview

Car washes play a vital role in maintaining the appearance and lifespan of vehicles. These establishments offer a diverse range of services, such as conveyor-based tunnel washes, in-bay automatic systems and self-service options. The overall industry is experiencing a surge in demand, driven by factors including increasing car ownership, busy lifestyles and new technologies such as touchless wash and water recycling systems.

However, competition in the industry remains fierce, holding new-age car washes to a higher standard. Businesses are expected to improve safety and sustainability while simultaneously improving the customer experience. This must also be accomplished in a way that yields higher profitability for all members of the car wash supply chain. Thus, OEMs must select cost-effective controls that uphold the highest standards of reliability, safety and sustainability.

That’s where c3controls comes in—that’s what we do. With more than 50 years of experience manufacturing quality electrical controls, we provide reliable

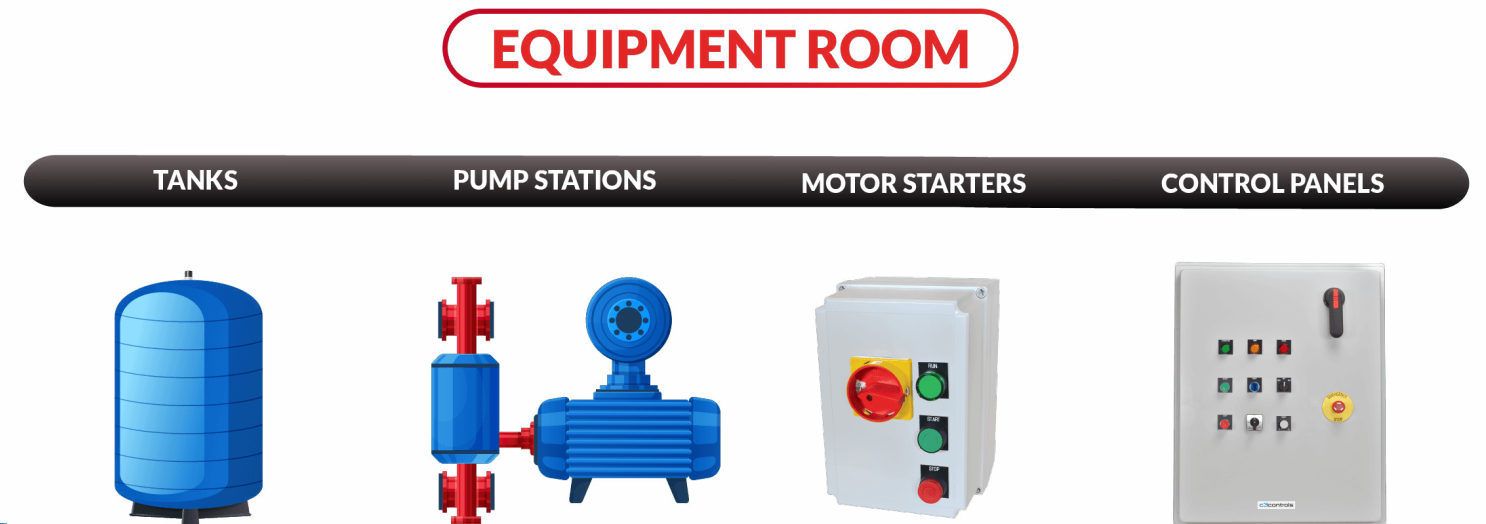
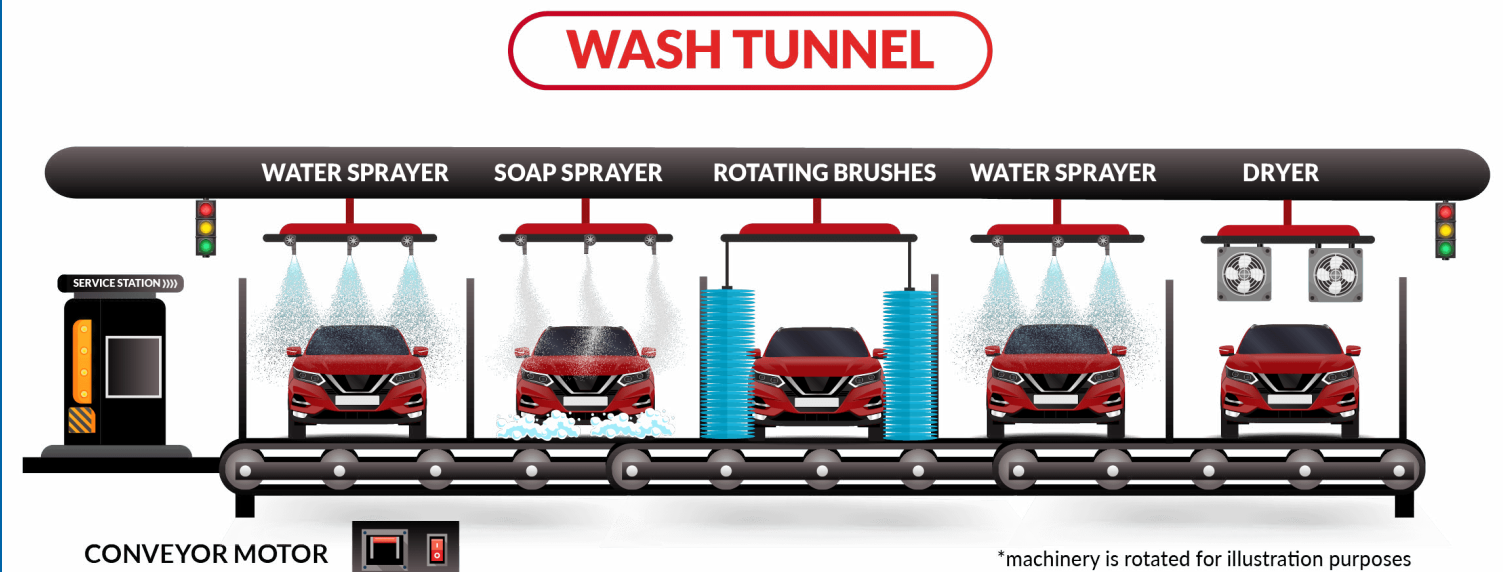
products designed to support the demanding requirements of modern car wash equipment. Our vertically integrated approach allows us to operate efficiently, respond quickly to changing market conditions, and provide the control products you need with fast delivery. Our solutions support a wide range of car wash applications, including:

- Pump Stations
- Conveyors
- Visual Indication
- & more!

With over seventeen million product configurations from c3controls and custom UL 508A-certified panel solutions from Covenant Panelworks (CPW), you have a trusted source for complete electrical control solutions. Contact us today and discover how our expertise can help you improve the reliability, efficiency, safety, and performance of your car wash equipment.

Car Wash Isometric

Here’s an example of the components that make up an automatic car wash tunnel operation:



-Car Wash Products

Disconnect Switches (+enclosed)



- Door mount, panel-base mount, and panel mount with integral operator
- Certified for use in Manual Motor Controller applications suitable as Motor Disconnects
- 16 - 125 Amps in 3, 4, and 5 pole configurations
- Variety of operating handle styles and colors rated for Type 1, 2, 3, 3R, 4/4X, 12, and 13, IP55 and IP65
- ABS plastic, polycarbonate, and carbon steel enclosures with Type 1, 4X, 12, 13 and IP65 ratings

Contactors and Control Relays



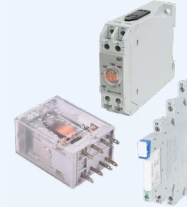
- Contactors: 9 to 105 Amps
- Contactors: 100kA SCCR @ 480V and 600V with Class J fuses
- Contactors: AC and DC - electronic coil control on DC devices
- Control Relays: Bifurcated contacts
- Control Relays: Rated 16A AC-1, A600, and Q600 for applications up to 600V

Overload Relays



- Available in five frame sizes with a current adjustment range of 0.28 - 112A
- High fault SCCR of 100kA @ 480V and 600V with Class J fuses
- Full load current adjustment ratio of approx. 1:1.5 enables relay to be set to exact FLA of motor
- Single phase sensitivity to protect motors against damaging phase loss conditions
- Manual or automatic reset and test modes, and stop button all in a single device

Relays



- General Purpose Relays: Octal base w/pin terminals and square base w/blade-style terminals
- General Purpose Relays: Color-coded push buttons for distinguishing AC and DC
- Electronic Timing Relays: Sizes in 17.5mm, 22.5mm, and 45mm widths
- Electronic Timing Relays: Single, dual and multi-functions with timing ranges from 0.01 seconds to 9,999 hours
- Terminal Block Relays: 6A, 250VAC/ 30VDC rated load

Industrial Power Supplies



- Designed to deliver the power with up to 93% efficiency
- Adjustable voltage options in 12, 24 and 48V
- Output power range from 60W to 480W
- DC OK relay contacts are standard on 240W and 480W
- Compact design - 43mm wide, up to 60mm

Control Power Transformers



- Open-type control transformers ranging from 50 to 5000VA
- Integrated terminal blocks and a finger-safe terminal guard, with IP20 protection on primary and secondary sides
- Each transformer variant features a Class H insulation system
- Capable of handling dynamic loads effectively, suitable for applications with fluctuating power demands
- Ability to provide multiple voltage outputs from a single unit

Motor Protection Circuit Breakers



- Multi-Function: Manual Motor Controller, Motor Disconnect, Group Motor Installations
- 50kA SCCR @ 480V
- Self-protected Type E up to 50kA @ 460V
- FLC up to 32 Amps
- Trip Class 10 Thermal and Magnetic Elements

Direct-On-Line Starters (+enclosed)



- Open-style starters consist of either a Contactor & Overload Relay, or a Motor Protection Circuit Breaker & Contactor
- Enclosed starters come pre-wired with a variety of pilot device options
- Factory assemblies provide the convenience of a single catalog number and shorter control panel bill of material

Miniature Circuit Breakers



- UL 489 & UL 1077
- 1, 2 and 3 Pole combinations
- 10kA SCCR @ 480V/277VAC
- Current ratings up to 63 Amps
- B, C and D curve ratings

Control Circuit Transformers



- Ratings from 20 to 300VA
- Operating voltages from 120V to 480V on primary side, and 24V on secondary side
- Over-current protection options; inherent or non-inherent, or manual resettable circuit breaker
- Integrated grounding system and space-saving footprint
- Versatile for Class 2, Class 3, and general purpose applications

Enclosed Power Supplies



- 24VAC power with on/off control, power indication and equipment overcurrent protection
- Transformer steps down the input voltage to 24VAC at the output
- 100VA Ungrounded Class 2 rating per output circuit
- Optional voltage separation compartments and convenient receptacle outlets
- Durable, Type 1 metallic enclosure

VFD Bypass Panels



- Can be installed as either a temporary replacement to a VFD or as a system backup
- Each assembly includes: fused disconnect switch, contactors, control transformer, a variety of 22mm IEC pilot devices, and power and control terminal blocks
- Optimized width to save wall space

Pilot Devices



- Modular range of 30mm, 22mm, 16mm, 13mm, and cam-operated rotary switches
- Maintained and momentary operations in both non-illuminated, illuminated, and keyed versions
- Type 1, 2, 3, 3R, 4/4X, 12, and 13
- Color-coded, snap-on contact blocks
- Full voltage, multi-voltage, resistor, and dual input light units in a wide range of voltages up to 600VAC/VDC
- Cam switch operators are certified as Manual Motor Controllers per UL

Control Stations & Enclosures (+ E-Stops & Alarm Silence Stations)



- Standard pre-configured assemblies of 30mm and 22mm pilot devices (customizable configurations available)
- Enclosure constructions in Polycarbonate, Polyester, and Die Cast Aluminum
- Operator options in both non-illuminated and illuminated
- Each assembly comes with laminated, laser engraved legend plates
- Fully assembled and ready to use out of the box

Tower Lights



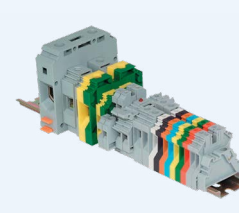
- Stackable design for up to 5 modules in a single assembly
- Mounting options in three styles: 50mm direct mount, 50mm panel-mount short base, and 50mm panel-mount tall base
- Voltage options available in 24V AC/DC, 120V AC, and 240V AC
- Three styles of illumination: continuous, flashing and rotary
- Continuous or intermittent sound modules with 80dB or 100dB sound output

Electrical Panels



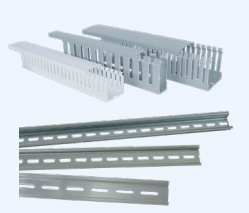
- Custom electrical panel solutions are available through [Covenant Panelworks \(CPW\)](#), a UL 508A-certified panel shop specializing in complete finished assemblies and value-added projects.

IEC Terminal Blocks



- Screw Clamp, Spring Clamp, and Miniature
- 5mm - 25mm widths
- 25 - 230 Amps
- Feed Through, Ground, Multi-Conductor, Double & Triple Level, Fuse Holder, Power Distribution, and more
- DIN Rail mounting; snap-on, snap-off assembly

Wire Duct & DIN Rail



- Wire Duct: 13 dimensions from 25mm wide up to 80mm, and up to 2m in length
- Wire Duct: Narrow and Wide Slot
- DIN Rail: 35mm rails in steel and aluminum
- DIN Rail: 1m (3.28ft) or 2m (6.56ft) lengths
- DIN Rail: Standard package quantities, or pallet options available

c3controls Product Portfolio

Our 17 million+ product configurations deliver durability and reliability—even in the most punishing environments—meeting and exceeding global standards for quality and safety.



DISCONNECT SWITCHES
NON-FUSED & ENCLOSED



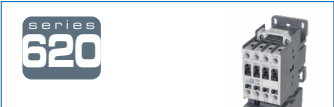
MINIATURE CIRCUIT BREAKERS



CONTACTORS & CONTROL RELAYS



OVERLOAD RELAYS



DIRECT-ON-LINE STARTERS
CONTACTOR + OVERLOAD RELAY



ENCLOSED DIRECT-ON-LINE STARTERS
CONTACTOR + OVERLOAD RELAY



MOTOR PROTECTION CIRCUIT BREAKERS
OPEN & ENCLOSED



DIRECT-ON-LINE STARTERS
MOTOR PROTECTION CIRCUIT BREAKER + CONTACTOR



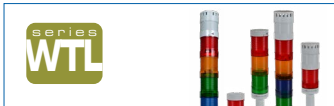
ENCLOSED DIRECT-ON-LINE STARTERS
MOTOR PROTECTION CIRCUIT BREAKER + CONTACTOR



30MM PILOT DEVICES
FOR INDUSTRIAL & HAZARDOUS LOCATION



22MM PILOT DEVICES
IEC & NEMA



WORLD TOWER LIGHTS



CAM SWITCHES



16MM PILOT LIGHTS



13MM PILOT LIGHTS



CONTROL STATION ENCLOSURES



ENCLOSED UL508A COMBINATION MOTOR STARTERS



ENCLOSED POWER SUPPLIES



VFD BYPASS PANELS



INDUSTRIAL POWER SUPPLIES



CONTROL CIRCUIT TRANSFORMERS



CONTROL POWER TRANSFORMERS



TERMINAL BLOCKS



TERMINAL BLOCK RELAYS



ELECTRONIC TIMING RELAYS



GENERAL PURPOSE RELAYS



WIRING DUCT



DIN RAIL

White Papers

Product professionals AND subject experts!
Check out c3controls' extensive library of white papers:



INDUSTRIAL CONTROL BASICS:
Part 2 - Overload Relays

Overload Relays: Types & Tripping & What is Overload Protection?

Find out how you can protect your motor from a current overload by using an overload relay. Also learn about the different types and their trip classes.

[READ WHITEPAPER](#)



INDUSTRIAL CONTROL BASICS:
Part 3 - Starters

Industrial Control Basics: Motor Control Starters & Magnetic Motor Starter

Don't know which type of motor starter to use? Find out the five basic types of starters, their standards, ratings, and main functions.

[READ WHITEPAPER](#)



Replacing VFDs with Motor Starters

Replacing VFDs with Motor Starters

Unable to source variable frequency drives (VFDs) and soft starters due to the shortages of raw materials? You have a variety of choices when selecting an electric motor starter. Download our paper to see how you might be able to use standard motor control in place of a VFD.

[READ WHITEPAPER](#)



PANEL ESSENTIALS 3:
UL508A Control Panel Design Considerations

Panel Essentials Series 3: UL508A Control Panel Design Considerations

Find out the basic design considerations you need to know when building a UL 508A panel.

[READ WHITEPAPER](#)



Pump Control
(Water/ Wastewater/ Irrigation)

Pump Control

Each application to control a pump is unique. Click here for the types of control methods and what to consider when selecting pump control.

[READ WHITEPAPER](#)



EV Charging Guide

EV Charging Guide

Charging your electric vehicle is super easy with this complete step-by-step guide that covers all key things related to electric vehicle charging. Learn the basics, including what you should know before you charge and which chargers work with your type of car.

[READ WHITEPAPER](#)

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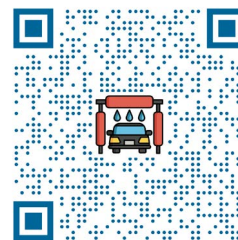
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