

### Temperature Control Panels — Enclosure Options

Tempco's **Control Panels** are built using NEMA 12 manufactured enclosures. Tempco can also design and manufacture panels to other standard NEMA ratings as described below.

The **Standard NEMA Enclosure Definitions** are listed for your convenience. Also included are comparison charts for indoor and outdoor enclosures.

Include the **NEMA Enclosure Rating** required on your Request for Quote.

### Standard NEMA (National Electrical Manufacturers' Association) Enclosure Ratings

#### Type 1 General Purpose

Enclosures are intended for indoor use primarily to provide a degree of protection against contact with the enclosed equipment in locations where unusual service conditions do not exist.

#### Type 3 Weather Resistant & Windblown Dust Resistant

Enclosures are intended for outdoor use primarily to provide a degree of protection against windblown dust, rain, and sleet; and to be undamaged by the formation of ice on the enclosure.

#### Type 3R Weather Resistant

Enclosures are intended for outdoor use primarily to provide a degree of protection against falling rain and sleet, and to be undamaged by the formation of ice on the enclosure.

#### Type 4 Moisture & Windblown Dust Resistant

Enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against windblown dust and rain, splashing water, and hose-directed water; and to be undamaged by the formation of ice on the enclosure.

#### Type 4X Moisture & Corrosion Resistant

Enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against corrosion, windblown dust and rain, splashing water, and hose-directed water; and to be undamaged by the formation of ice on the enclosure.

#### Type 7 Explosion Resistant

Enclosures are capable of withstanding the pressures resulting from an internal explosion of specified gas, and containing such an explosion sufficiently that an explosive gas-air mixture existing in the atmosphere surrounding the enclosure will not be ignited.

#### Type 12 Resistant to Dirt & Dripping Non-Corrosive Liquids

Enclosures are intended for indoor use primarily to provide a degree of protection against dust, falling dirt, and dripping non-corrosive liquids.

### Standard Supplied Enclosure: Type 12

#### Comparison of Outdoor Rated Enclosures

Provides a degree of protection against the following conditions:	Type of Enclosure			
	3	3R	4	4X
Incidental contact with enclosed equipment	X	X	X	X
Rain, snow and sleet	X	X	X	X
Windblown dust	X		X	X
Hosedown (hose-directed water)			X	X
Corrosive agents				X

#### Comparison of Indoor Rated Enclosures

Provides a degree of protection against the following conditions:	Type of Enclosure				
	1	4	4X	7	12
Incidental contact with enclosed equipment	X	X	X	X	X
Falling dirt	X	X	X	X	X
Falling liquids and light splashing		X	X	X	X
Dust, lint, and fibers		X	X	X	X
Hosedown (hose directed water)		X	X	X	X
Oil and coolant seepage				X	X
Corrosive agents			X	X	
Potentially explosive gas-air mixture				X	
Windblown dust		X	X		

Five-stage heater control panel with PC controlled SCR for Class 8 truck wind tunnel testing.

