CRN (Canadian Registration Number)

The Canadian Registration Number (CRN) is a number issued by each province/territory of Canada to the design of boiler, pressure vessel or fitting. Industrial instrumentation such as pressure gauges, thermometer wells, control valves and related accessories all fall under this jurisdiction. The CRN identifies the design has been accepted and registered for use in that province/territory.

TRERICE

CRN PRODUCT REGISTRATION

PROVINCES:	British Columbia	Alberta	Saskatchewan	Manitoba	Ontario
	CRN	CRN	CRN	CRN	CRN
Pressure Gauges	0F6508.51	0F6508.52	CSA-0F6508.53	CSA-0F6508.54	0F6508.5
Diaphragm Seals*	0H6508.51	0H6508.52	0H6508.53	0H6508.54	0H6508.5
Sanitary Seals*	0H6508.51	0H6508.52	0H6508.53	0H6508.54	0H6508.5
Thermowells*	0H6508.51	0H6508.52	0H6508.53	0H6508.54	0H6508.5
Syphons/Snubbers/Dampeners*	0H6508.51	0H6508.52	0H6508.53	0H6508.54	0H6508.5
XT Thermostats*	Not Required	0C128414.52	0C128414.53	0C128414.54	0C128414.5
Self-Operating Regulators* 2" and Below	Not Required	0C128414.52	0C128414.53	0C128414.54	0C128414.5
Self-Operating Regulators Over 2"	0C11258.51	0C11258.52	0C11258.53	0C11258.54	0C11258.5
Pneumatic Control Valves* 2" and Below	Not Required	0C128414.52	0C128414.53	0C128414.54	0C128414.5
Pneumatic Control Valves Over 2"	0C11258.51	0C11258.52	0C11258.53	0C11258.54	0C11258.5
Electric Control Valves	0C11258.51	0C11258.52	0C11258.53	0C11258.54	0C11258.5

PROVINCES:	Quebec	New Brunswick	Nova Scotia	Prince Edward Island	Newfoundland & Labrador
	CRN	CRN	CRN	CRN	CRN
Pressure Gauges	CSA-0F6508.56	0F6508.57	0F6508.58	0F6508.59	0F6508.50
Diaphragm Seals*	0H6508.56	0H6508.57	0H6508.58	0H6508.59	0H6508.50
Sanitary Seals*	0H6508.56	0H6508.57	0H6508.58	0H6508.59	0H6508.50
Thermowells*	0H6508.56	0H6508.57	0H6508.58	0H6508.59	0H6508.50
Syphons/Snubbers/Dampeners*	0H6508.56	0H6508.57	0H6508.58	0H6508.59	0H6508.50
XT Thermostats*	0C128414.56	0C128414.57	0C128414.58	0C128414.59	0C128414.50
Self-Operating Regulators* 2" and Below	0C128414.56	0C128414.57	0C128414.58	0C128414.59	0C128414.50
Self-Operating Regulators Over 2"	0C11258.56	0C11258.57	0C11258.58	0C11258.59	0C11258.50
Pneumatic Control Valves* 2" and Below	0C128414.56	0C128414.57	0C128414.58	0C128414.59	0C128414.50
Pneumatic Control Valves Over 2"	0C11258.56	0C11258.57	0C11258.58	0C11258.59	0C11258.50
Electric Control Valves	0C11258.56	0C11258.57	0C11258.58	0C11258.59	0C11258.50

PROVINCES:	Yukon	Northwest Territories	Nunavut
	CRN	CRN	CRN
Pressure Gauges	0F6508.5Y	0F6508.5T	0F6508.5N
Diaphragm Seals*	0H6508.5Y	0H6508.5T	0H6508.5N
Sanitary Seals*	0H6508.5Y	0H6508.5T	0H6508.5N
Thermowells*	0H6508.5Y	0H6508.5T	0H6508.5N
Syphons/Snubbers/Dampeners*	0H6508.5Y	0H6508.5T	0H6508.5N
XT Thermostats*	0C128414.5Y	0C128414.5T	0C128414.5N
Self-Operating Regulators* 2" and Below	0C128414.5Y	0C128414.5T	0C128414.5N
Self-Operating Regulators Over 2"	0C11258.5Y	0C11258.5T	0C11258.5N
Pneumatic Control Valves* 2" and Below	0C128414.5Y	0C128414.5T	0C128414.5N
Pneumatic Control Valves Over 2"	0C11258.5Y	0C11258.5T	0C11258.5N
Electric Control Valves	0C11258.5Y	0C11258.5T	0C11258.5N

***CRN Application Pending**

APPROVALS / STANDARDS / CERTIFYING AGENCIES

Safety is of utmost importance when utilizing industrial instrumentation especially the use of transmitters or other electrical equipment. Some of the more common concerns are: contamination due to faulty equipment, protection from electromagnetic interference and meeting strict safety requirements in potentially explosive environments. Trerice's customers rely on certifying agencies such as Factory Mutual, Canadian Standards Association and Underwriters Laboratories to ensure that these products are safe. These agencies examine, test and certify that each product has been designed to meet specific standards for certain applications, hazardous locations or specific electrical situations.

Certifying agencies enable Trerice to mark approved products with the corresponding standard committee's label ensuring that these particular products have been tested and meet those specific standards.

CAN. DEPT. OF DEFENSE	U.S. COAST GUARD	ISO 9001: 2000	3A	CE	CRN
U.S. DEPT. OF DEFENSE	NATO	ASME B40.100	NEMA	FM	CSA
U.S. NAVY	NACE	ASME B1.20.1	Ingress Protection (IP) Ratings	UL / ULC	FCI

ASME
Founded in 1880 as the American Society of Mechanical Engineers, today's ASME promotes the art, science & practice of mechanical & multidisciplinary engineering and allied sciences around the globe.

ASME B40.100
A set of voluntary product performance and configuration guidelines to inform and update the specifier and user regarding the science of pressure gauge production, application, and use.

ASME B1.20.1
Specifications, dimensions and gaging for Taper and Straight pipe threads including certain special applications.

ISO 9001: 2000
ISO 9001:2000 is a quality model for quality assurance in production and installation. The elements of ISO 9001:2000 consist of; Leadership and System Improvement, Quality in the Line Functions, Infrastructure or Supporting systems as well as Design & Engineering.

3A
The objective of the 3A Sanitary Standards Committee is to formulate standards and accepted practices for equipment and systems used to process milk and milk products. Such standards are developed through all levels of sanitarians, equipment manufacturers and equipment users so those standards are acceptable to those involved in the sanitary aspects of dairy and related industries. The 3A Symbol Administrative Council authorizes manufacturers to display the 3A symbol on processing equipment that is in compliance with 3A Sanitary Standards.

FM: FACTORY MUTUAL

The Factory Mutual Approvals Division determines the safety and reliability of equipment, materials or services utilized in hazardous locations in the United States and elsewhere. For a product to receive FM approval, it must meet two criteria. Initially, it must perform satisfactorily, reliably and repeatedly as applicable for a reasonable life expectancy. Secondly, it must be produced under high quality control conditions. Factory Mutual also has interlaboratory agreements and can certify to Canadian and European standards.

CSA

The Canadian Standards Association (CSA) includes Canadian consumers, manufacturers, labour, government, and other regulatory agencies among its actively participating influences. There various groups work together to generate standard requirements (CSA standards) that demonstrate product quality, enhance market acceptability and improve quality and safety control procedures in manufacturing and construction for the Canadian marketplace. The standards generated by CSA are the cornerstone for determining a product's eligibility for certification in hazardous locations in Canada. CSA also performs product evaluation, testing and ongoing inspection to these standards and also to American and European standards through new interlaboratory agreements.

CE

marking is a declaration from Trerice that our product conforms to a specific Directive adopted by the EEA (European Economic Area) and is a requirement for the product to be sold into any of the countries in this 18 member group. CE is an abbreviation for the" Conformite Europeene", meaning European Conformance. Unlike dangerous location approvals, CE marking is granted to products that conform to Directives, which were developed using IEC and Cenelec standards. The Directives that affect transmitters are the EMC (Electromagnetic Compatibility) and LVD (Low Voltage) Directives. These state that the products must meet specific electromagnetic emission and immunity, as well as electrostatic discharge standards

UL / ULC
Underwriters Laboratories and Underwriters Laboratories of Canada maintains a high commitment to public safety and a dedication to exceed customer expectations through continual improvement in the delivery of quality services. The organizations develop and publish standards, classifications and specifications for products having a bearing on fire, accident or property hazards. If a product carries the UL mark, it means that UL found the products met UL's safety requirements. These requirements are based primarily on UL's own published Standards for Safety.

NACE

The National Association of Corrosion Engineers recommends practices such as methods of selection, design, installation, maintenance or operation of material or system where corrosion is a factor. Some recommended practices focus on details of construction of a corrosion control system, methods of treating the surface of materials to reduce corrosion, requirements for using devices to reduce corrosion; and procedures for increasing the effectiveness safety and economic benefits of an installation or system.

FCI
FCI is an association of manufacturers of equipment for fluid (liquid or gas) control and conditioning. The institute is organized into product-specific sections which address issues that are relevant to particular products and/or technologies. Focused on technical issues, the institute provides standards and educational materials to assist purchasers and users in understanding and using fluid control and conditioning equipment.

FCI 70-2 Valve Seat Leakage Standards

Leakage Class Designation	Maximum Leakage Allowable	Usual Application
Class I	Not Rated or Tested	By Customer/Vendor Agreement
Class II	0.5% of Full Open Rated Capacity	Double Seated Metal Trimmed Valves
Class III	0.1% of Full Open Rated Capacity	By Customer/Vendor Agreement
Class IV	0.01% of Full Open Rated Capacity	Single Seated Metal Trimmed Valves
Class VI	Bubble Tight	Single Seated Soft (Elastomer) Trimmed Valves

NEMA

Certain Trerice sensors, transducers and transmitters can be classified per the National Electrical Manufacturer's Association Enclosure (NEMA) classifications. NEMA is a non-profit trade organization composed of manufacturers of electrical power apparatus. NEMA created voluntary standards for electrical enclosures. These classifications describe the environment in which the product can be used due to the protection the enclosure provides. ("Enclosure" includes electrical and mechanical connections and external adjustments.) Among others, NEMA classifies enclosures based on the effects of external icing, corrosion and rusting, or contamination from oil and coolants. Pressure switches may also be classified according to the voluntary standards set by NEMA for electrical enclosures.

Type 1	General Purpose	Indoor	accidental contact will not rust
Type 2	Drip-proof	Indoor	limited amounts of falling water and dirt will not rust
Type 3	Dust-tight, rain-tight	Outdoor	windblown dust, rain, sleet, and undamaged by external ice formation
Type3R	Dust-tight, rain-tight	Outdoor	same as type 3 above, plus diverts water from live parts, provision for drainage, will not rust
Type 3S	Dust-tight, rain-tight	Outdoors	same as type 3 above, operation of external mechanism when ice laden, will not rust
Type 4	Water-tight, dust-tight	Indoor/Outdoor	windblown dust and rain, splashing water, and hose directed water, undamaged by ice formation, will not
Type 4X	Water-tight, dust-tight	Indoor/Outdoor	same as type 4 above, plus corrosion resistant, will not rust
Type 5	Dust-tight	Indoor	dust and falling dirt, will not rust
Type 6	Water-tight, dust-tight	Indoor/Outdoor	temporary entry of water during limited submersion (6ft for 30 Min), undamaged by formation of ice, will not rust
Type 6P	Water-tight, dust-tight	Indoor/Outdoor	same as type 6 above plus prolonged submersion at 6 psig, will not rust
Type 7	Explosion proof Class I	Indoor	Hazardous Locations: Protection against corrosive effects of liquids and gases
Type 8	Explosion proof Class I	Indoor/Outdoor	Hazardous Locations: protection against corrosive effects of liquids and gases; contacts or connections immersed
Type 9	Explosion Proof Class II	Indoor	Hazardous Locations: dust-tight, hazardous dust
Type 10	Hazardous Locations	Indoor	MSHA Mine Safety and Health Adm. per 30 C.F.R., Part 18
Type 11	Oil-tight/Corrosion	Indoor	protection from corrosive effects of gases and liquid dripping, seepage and external condensation or
Type 12	Oil-tight, Dust-tight	Indoor	fibers, lint, dust and light splashing, seepage and dripping condensation or non-corrosive liquids
Type 12K		Indoor	same as type 12 above, enclosure has knockouts
Type 13	Oil-tight, Dust-tight	Indoor	dust, spraying of water, oil and corrosive coolant, oil resistant gaskets

Ingress Protection (IP) Ratings

The IP Code indicates the degree of protection provided by enclosures for electrical equipment

The **first numeral** indicates protection of persons against access to dangerous parts and protection of internal equipment against the ingress of solid foreign objects.

X—Protection unspecified (untested)
—No special protection provided
1—Protection of hand against accidental access to dangerous parts, and protection of equipment against objects larger than 50mm
2—Protection of fingers against access to dangerous parts, and protection of equipment against objects larger than 12mm
3—Protection against objects larger than 2.5mm (e.g. tools, wires)
4—Protection against objects larger than 1mm (e.g. line tools, wires)
5—Protection against entry of dust in sufficient quantity to interfere with satisfactory operation of equipment
6—Complete protection against entry of dust

The **second numeral** indicates protection of internal equipment against harmful ingress of water

X—Protection unspecified (untested)
—No special protection provided
1—Protection against drops of water falling vertically
2—Protection against drops of water falling vertically when the object is tilted by up to 15 degrees from its normal position (in any direction)
3—Protection against spraying water at up to 60 degrees from the vertical
4—Protection against splashing and spraying water from all practicable directions
5—Protection against a low pressure jet of water from all practicable directions
6—Protection against heavy seas or a strong jet of water from all practicable directions
6D—Protection against driving rain at angles down to horizontal
7—Protection against immersion
8—Protection against submersion (tests subject to agreement, but no less severe than numeral 7)