



HELPFUL TERMS

ICI manufactures **compact quarter turn** electric actuators. The word **compact** defines the torque range below 10,000 lb-in (1130 Nm). While we do offer larger torque actuators and different style actuators like **multi-turn actuators** (actuators rotating more than 360 degrees) and **linear actuators** (actuators drive that move axially instead of rotary) our niche is in the **compact quarter turn** market. ICI actuators are used for **on-off service** (valve operated to full open/close position to start or stop flow) as well as **modulating service** (valve positioned to throttle or regulate flow).

In the electric actuator world a **limit switch** is the device that controls the end position of the actuator, the **actuator limits**. This term is often confused with a limit switch that is used on pneumatic actuators to transmit valve position. When using electric actuators the "pneumatic limit switch option" is known of as **auxiliary switches, extra limit switches or auxiliary limit switches**. Contrary to pneumatic actuators where the limit switch is mounted externally with an electric actuator the **auxiliary limit switches** are installed inside the actuator enclosure. **Actuator limits** for compact quarter turn electric actuators are normally 0 (closed) and 90 (open) degrees.

ICI electric actuators are equipped with **manual over rides**. A **manual over ride** allows the user to rotate the valve manually in the event of a power failure. Our 400 lb-in (45.2 Nm) actuators and larger are equipped with **declutching manual over rides**. **Declutching manual over rides** disengage from the gear train enabling the user to turn the valve with greater ease.

ICI also manufactures a line of **electric fail-safe devices** which are battery back up systems that invert 12Vdc battery power to 115Vac square sine wave power upon unexpected loss of main supply power allowing standard actuators to operate valves open or close in an emergency.

REFERENCE TOOLS

ISO MOUNTING DIMENSIONS: ISO 5211:2001(E)

Flange Type	Female Drive	Bolt Circle
F03	9mm (.354" Sq.)	36mm (1.417" Sq.)
F04	11mm (.433" Sq.)	42mm (1.654" Sq.)
F03/F04 (Flange Not ISO)	9mm (.354" Sq.)	42mm (1.654" Sq.)
F05	14mm (.551" Sq.)	50mm (1.969" Sq.)
F07	17mm (.669" Sq.)	70mm (2.756" Sq.)
F10	22mm (.866" Sq.)	102mm (4.016" Sq.)
F12	27mm (1.063" Sq.)	125mm (4.921" Sq.)
F14	36mm (1.417" Sq.)	140mm (5.512" Sq.)
F16	46mm (1.811" Sq.)	165mm (6.496" Sq.)
F25	55mm (2.165" Sq.)	254mm (10.000" Sq.)
F30	75mm (2.953" Sq.)	298mm (11.732" Sq.)

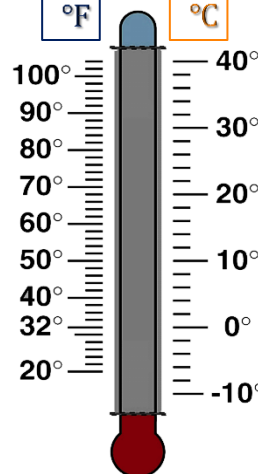
* The dimensions above were taken from the International Standard ISO 5211 First edition 2001-02-15 and are only a small representation of the information available in International Standard ISO 5211.

TEMPERATURE CONVERSION

°F	°C
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$$^{\circ}\text{C} = \frac{5 \cdot (^{\circ}\text{F} - 32)}{9}$$

$$^{\circ}\text{F} = ^{\circ}\text{C} \cdot \frac{9}{5} + 32$$



IP Code	Min. NEMA Rating
IP65	4,4X
IP67	6
IP68	6P

NEMA ENCLOSURE TYPE RATINGS

TYPE 1	General purpose intended for indoor use to prevent accidental contact with enclosed equipment.
TYPE 4	Water and dust tight intended for indoor or outdoor use to protect enclosed equipment from splashing water, seeping of, falling or hose directed water and severe external condensation, they are sleet proof.
TYPE 4X	Water and dust tight with same provisions as Type 4 enclosure but also are corrosion resistant.
TYPE 6	Water and dust tight sleet resistant intended for indoor or outdoor use where occasional submersion may be encountered with a static head of no more then 6 feet for no longer then 30 minutes.
TYPE 7	Class I, Division 1 and 2, Groups A, B, C or D intended for indoor hazardous locations. Division 1: Hazardous vapors are present. Division 2: Hazardous contained but may not be present. Groups A, B, C & D classifies different gases and vapors.
TYPE 9	Class II, Division 1 and 2, Groups E, F or G intended for indoor hazardous locations. Division 1: Air suspended dust. Division 2: Surface accumulated non-air suspended. Groups E, F & G classifies different dust types.