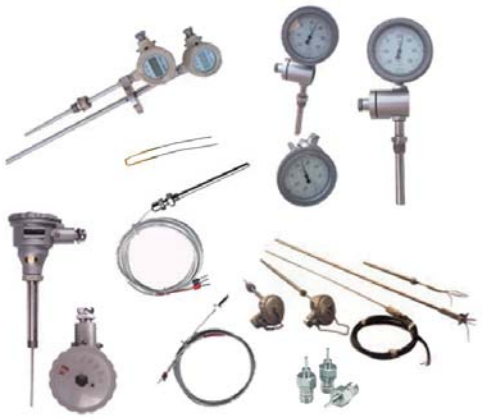
2.2.3. RTD Input Module

RTD Introduction

Resistance Temperature Detectors (RTD), as the name implies, are sensors used to measure temperature by correlating the resistance of the RTD element with temperature. Most RTD elements consist of a length of fine coiled wire wrapped around a ceramic or glass core. The element is usually quite fragile, so it is often placed inside a sheathed probe to protect it. The RTD element is made from a pure material whose resistance at various temperatures has been documented. RTDs are also relatively immune to electrical noise and therefore well suited for temperature measurement in industrial environments, especially around motors, generators and other high voltage equipment.

Applications



RTD Input Module		
Model Name	**I-7013(D)**	**I-7033(D)** **M-7033(D)**
Pictures		
RTD Input		
Channels	1	3
Wiring	2/3/4 wire	2/3/4 wire
★ Sensor Type	Pt100, Pt1000, Ni120	Pt100, Pt1000, Ni120
Resolution	16-bit	16-bit
★ Accuracy	±0.05%	±0.1%
★ Sampling Rate	10 Hz	15 Hz (Total)
★ Individual Channel Configuration	-	-
★ Overvoltage Protection	±5 VDC	±25 VDC
Open Wire Detection	Yes	Yes
3-wire RTD Lead Resistance Elimination	Yes	Yes
Resistance Measurement	3.2 KΩ Max.	
System		
★ Dual Watchdog	Yes	Yes
ESD (IEC 61000-4-2)	-	-
EFT (IEC 61000-4-4)	-	-
Intra-Module Isolation, Field-to-Logic	3000 VDC	
Power Input	10 ~ 30 VDC	
Power Consumption	0.7 W; 1.3 W for (D) version	1.0 W; 1.6 W for (D) version

Over-current Protection

For the current measurement module, it may be damaged when there is high current or voltage introduced into the current loop. The protection for current measurement is improved to +/-120 VDC and +/-1000 mA.. A high current or voltage in the current loop will not damage the current measurement, so the whole system can work normally.