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Specification

TEMPLATE LIST



**Instrument Specs and Index**

***Specification Templates List***

**TABLE 1 - Operating Parameter Device Categories and Form Titles**

| **Form Number** | **Form Title** | **Rev** |
| --- | --- | --- |
| A1001 | Analysis Device | 1 |
| A1002 | Analysis Device with Composition or Property | 1 |
| C1001 | Valve or Regulator Device | 1 |
| C1002 | Isolation Valve or Shutoff Device | 1 |
| C1003 | Desuperheating Control Valve Device | 1 |
| C1004 | Recirculation Valve device | 1 |
| F1001 | Flow Device | 1 |
| F1002 | Gas Flow Device with Composition Parameters | 1 |
| F1003 | Bulk Solids Flow Device | 1 |
| F1101 | Line  | 1 |
| L1001 | Level Device | 1 |
| P1001 | Differential Pressure Device | 1 |
| P1002 | Pressure Relief or Safety Relief Device | 1 |
| P1003 | Pressure Device | 1 |
| P1004 | Tank or Line Venting Device | 1 |
| T1001 | Temperature Device | 1 |
| T1002 | Non-contact Temperature Measurement Device | 1 |
| W1001 | Weight or Force Device  | 1 |

**TABLE 2 - Device Specification Categories and Form Titles**

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| --- | --- | --- |
| **Form Number** | **Form Title** | **Rev** |
| **Analysis Devices** |
| A2111 | Fixed Point Gas Transmitter Monitor/Control Unit | 1 |
| A2131 | Open Path Gas Detector | 1 |
| A2141 | Semi-continuous Analyzer | 1 |
| A2143 | Online Catalytic Combustion Based TOC Analyzer | 1 |
| A2151 | Insitu Gas Analyzer | 1 |
| A2161 | Continuous Extractive Gas Analyzer | 1 |
| A2171 | Opacity or Dust Monitor w/wo Integral Transmitter | 1 |
| A2172 | Opacity or Dust Transmitter or Interface Unit | 1 |
| A2181 | Online Colorimetric Based Wet-chemical Analyzer | 1 |
| A2183 | Online ISE Based Wet-chemical Analyzer | 1 |
| A2185 | Online Respirometry Based BOD or Toxicity Analyzer | 1 |
| A2187 | Online Thermal Digestion Based COD or Analyzer | 1 |
| A2189 | Online Chemical Oxidation Based TOC, TIC and TC Analyzer | 1 |
| A2191 | Dissolved Gas Sensor w/wo Mounting Assembly | 1 |
| A2192 | Dissolved Gas Transmitter/Analyzer/Monitor | 1 |
| A2201 | Online Liquid Particle Counter Sensor w/wo Analyzer | 1 |
| A2203 | Remote or Portable Airborne Particle counter w/wo Pump | 1 |
| A2205 | Online or Handheld Particle Counter or Monitor | 1 |
| A2207 | Remote or Handheld Condensation Particle Counter | 1 |
| A2301 | Ion Selective Sensor w/wo Insertion Assembly | 1 |
| A2311 | Liquid Density or Specific Gravity Transmitter | 1 |
| A2321 | Nuclear Type Density Transmitter w/wo Switches  | 1 |
| A2331 | Continuous Extractive Oil in Water Monitor w/wo Switches | 1 |
| A2332 | Insitu Oil in Water Sensor w/wo Insertion Assembly | 1 |
| A2333 | Oil in Water Monitor/Controller w/wo Switches | 1 |
| A2341 | pH/ORP Sensor w/wo Insertion Assembly | 1 |
| A2342 | pH/ORP/Conductivity/Resistivity Transmitter/Analyzer/Monitor | 1 |
| A2345 | Continuous TOC Sensor w/wo Transmitter or Analyzer | 1 |
| A2349 | Continuous UV-VIS Sensor w/wo Controller | 1 |
| A2351 | Turbidity or Photometric Sensor w/wo Transmitter | 1 |
| A2352 | Turbidity or Photometric Transmitter or Controller | 1 |
| A2361 | Viscosity and Density Sensor w/wo Integral Transmitter | 1 |
| A2363 | Gas Density Meter w/wo Calculated Variables | 1 |
| A2371 | Moisture Analyzer or Dew Point Xmtr w/wo Sample Sys | 1 |
| A2372 | Single Channel Moisture Analyzer or Dew Point Xmtr | 1 |
| A2373 | Humidity or Dew Point w/wo Temperature Transmitter | 1 |
| A2381 | Conductivity Sensor w/wo Insertion Assembly | 1 |
| A2391 | Entrained/Holdup Gas Monitor | 1 |
| A2411 | Smoke and/or Carbon Monoxide Alarm | 1 |
| A2511 | Smoke Detector | 1 |
| A2512 | Beam Smoke or Open-Air Smoke Imaging Detector | 1 |
| A2611 | Soil Moisture or Water Potential Sensor with Probe | 1 |
| A2612 | Soil Moisture and Temperature and Salinity Profiling Probe | 1 |
| A2613 | Hand-held Moisture Content Meter w/wo Auxiliary Probe | 1A |
| A2901 | Sample Gas Conditioning System w/wo Phase Separation | 1 |
| A2902  | Sample Probe or Extractor | 1 |
| A2903 | Steam and Water Grab Sample and Conditioning System | 1 |
| A2904 | Grab Sample or Bottle Sampling System | 1 |
| A2905 | Steam and Water Grab Sampling System | 1 |
| A2906 | Automated Steam and Water Sample Conditioning System | 1 |
| A2910  | Analyzer Controller | 1 |
| **Burner or Combustion Devices** |
| B2001 | Flame Scanner w/wo Flame Relay or Amplifier | 1 |
| B2002 | Optical Flame Detector w/wo Video Camera | 1 |
| **Valve or Regulator Devices** |
| C2001 | Linear Motion Type Control Valve Assembly | 1 |
| C2002 | Linear Motion Type Control Valve Assembly with Auxiliaries | 1 |
| C2011 | Rotary Motion Type Control Valve Assembly | 1 |
| C2012 | Rotary Motion Type Control Valve Assembly with Auxiliaries | 1 |
| C2021 | Severe Service Isolation Valve Assembly | 1 |
| C2022 | Severe Service Control Valve Assembly w/Auxiliaries | 1 |
| C2023 | Cryogenic Service Isolation Valve Assembly with Auxiliaries | 1 |
| C2024 | Cryogenic Service Control Valve Assembly w/Auxiliaries | 1 |
| C2031 | Desuperheater Device/Control Valve Assembly | 1 |
| C2041 | Linear Motion Type Motor Operated Valve Assembly | 1 |
| C2042 | Rotary Motion Type Motor Operated Valve Assembly | 1 |
| C2043 | Electric Actuator and Auxiliaries | 1 |
| C2051 | Linear Motion Type Isolation Valve Assembly | 1 |
| C2052 | Rotary Motion Type Isolation Valve Assembly | 1 |
| C2061 | Linear Motion Type Emergency Valve Assembly | 1 |
| C2062 | Rotary Motion Type Emergency Valve Assembly | 1 |
| C2101 | Automatic Recirculation Valve w/wo Back Pressure Regulator | 1 |
| C2105 | Check Valve or Automatic Control Valve | 1 |
| C2111 | Pressure Regulator w/wo Pilot Valve | 1 |
| C2131 | Self-Acting Temperature Regulator Valve | 1 |
| C2141 | Air-Release or Air/Vacuum and Combination Air Valves | 1 |
| C2211 | Solenoid Valve or Manifold Assembly | 1 |
|   **Flow Devices** |
| F2001 | Air Flow Traverse Probe w/wo Flow Straightener | 1 |
| F2011 | Elbow Flow Meter | 1 |
| F2021 | Flow Nozzle w/wo Meter Tube | 1 |
| F2031 | Orifice Plate (with Sizing Data) | 1 |
| F2032 | Orifice or Restriction Orifice Plate | 1 |
| F2041 | Orifice Plate Assembly w/wo Meter Tube | 1 |
| F2061 | Paddle Flow Switch or Transmitter | 1 |
| F2062 | Waterflow Detector w/wo Retard | 1 |
| F2071 | Pitot Tube w/wo Insertion Assembly | 1 |
| F2081 | Segmental Wedge Flow Element | 1 |
| F2091 | Target Flowmeter/Switch w/wo Insertion Assembly | 1 |
| F2101 | V-Shaped Cone Flowmeter | 1 |
| F2111 | Venturi or Flow Tube w/wo Meter Tube | 1 |
| F2121 | Laminar Flow element w/wo Transmitter | 1 |
| F2211 | Flume Flowmeter | 1 |
| F2231 | Rotameter/Variable Area Flowmeter-Direct Reading Type | 1 |
| F2251 | Variable Area Flowmeter or Transmitter w/wo Switches | 1 |
| F2261 | Weir Flowmeter Assembly | 1 |
| F2271 | Piston or Shuttle Flow Switch | 1 |
| F2301 | Coriolis Solids Mass Flowmeter w/wo Switches | 1 |
| F2311 | Free-Falling or Conveyed Bulk Solids Flowmeter | 1 |
| F2312 | Belt Scale System | 1 |
| F2313 | Impact or Solid-Particle Mass Flowmeter | 1 |
| F2314 | Microwave Solids Flow or Velocity Transmitter | 1 |
| F2315 | Microwave Solids Flow or Blocked Chute Switch | 1 |
| F2321 | Magnetic Flowmeter w/wo Integral Totalizer Indicator | 1 |
| F2322 | Insertion Type Magnetic Flowmeter w/wo Transmitter | 1 |
| F2331 | Radiation-Based Bulk Solids Flowmeter | 1 |
| F2341 | Ultrasonic Flowmeter w/wo Switches | 1 |
| F2342 | Ultrasonic Flare Gas Sensor w/wo Insertion Assembly | 1 |
| F2343 | Clamp-on Ultrasonic Flowmeter | 1 |
| F2351 | Thermal Mass Flowmeter w/wo Switches | 1 |
| F2361 | Thermal Mass Flow Switch | 1 |
| F2371 | Turbine Flowmeter Direct-Reading Type | 1 |
| F2372 | Turbine Flowmeter w/wo Switches | 1 |
| F2375 | Paddlewheel Flowmeter w/wo Switches | 1 |
| F2381 | Vortex or Swirl Flowmeter w/wo Totalizer Indicator | 1 |
| F2382 | Insertion Type Vortex Flowmeter w/wo Transmitter | 1 |
| F2391 | Sonar Flowmeter w/wo Entrained Gas Monitor | 1 |
| F2411 | Positive Displacement Flowmeter Direct-Reading Type | 1 |
| F2431 | Gear-Type PD Flowmeter w/wo Transmitter | 1 |
| F2432 | Helical Gear PD Flowmeter w/wo Transmitter | 1 |
| F2441 | Rotary-Type Gas PD Meter w/wo Transmitter | 1 |
| F2451 | Sliding/Rotary Vane Type PD Flowmeter | 1 |
| F2461 | Piston-Type PD Flowmeter w/wo Transmitter | 1 |
| F2471 | Nutating Disc PD Meter w/wo Transmitter | 1 |
| F2511 | Multi-Gas Flowmeter w/wo Controller | 1 |
| F2521 | Coriolis Mass Flowmeter w/wo Totalizer Indicator | 1 |
| F2611 | Sight Flow Indicator w/wo Illuminator | 1 |
| F2711 | Meter Tube w/wo Flow Straightener | 1 |
| **Hand Control Devices** |
| H2021 | Manual Sampling Valve | 1 |
| H2031 | Manual Pull Station | 1 |
| **Level Devices** |
| L2101 | Capacitance or RF Admittance Level Transmitter | 1 |
| L2111 | Diff Pressure Level Transmitter-Flange Mounted  | 1 |
| L2112 | Diff Pressure Level Transmitter with Remote Sensor | 1 |
| L2113 | Diff Pressure Level Transmitter with Seals | 1 |
| L2114 | Submersible Level Transmitter w/wo Data Logger | 1 |
| L2121 | Displacer-Type Level or Density Transmitter or Controller | 1 |
| L2122 | Displacer-Type Level Indicator w/wo Switches | 1 |
| L2131 | Tank Level Gauge or Transmitter w/wo Switches | 1 |
| L2141 | Nuclear Radiation-Based Level Transmitter w/wo Switches | 1 |
| L2151 | Resistance-Tape Level Transmitter w/wo Switches | 1 |
| L2161 | Non-contact Radar Level Transmitter For Liquid | 1 |
| L2162 | Guided Wave Radar Level or Interface Transmitter | 1 |
| L2163 | Non-contact Radar Level Transmitter For Solids | 1 |
| L2171 | Non-contact Ultrasonic Level Transmitter w/wo Switches | 1 |
| L2181 | Magnetostrictive Level or Interface Transmitter or Switch | 1 |
| L2191 | Laser Level Transmitter w/wo Switches | 1 |
| L2201 | Non-contact Volumetric Level Scanner w/woVisualization | 1 |
| L2211 | Professional Precipitation Sensor or Rain Gauge | 1 |
| L2212 | Snow Depth Sensor or Gauge | 1 |
| L2301 | Capacitance or RF Admittance Level Switch | 1 |
| L2302 | Conductivity Level Probe or Switch | 1 |
| L2303 | Capacitive or Proximity Level Switch | 1 |
| L2305 | Thermal Dispersion Level Switch | 1 |
| L2311 | Float or Displacer Level Switch w/wo External Cage | 1 |
| L2312 | Tank Level Gauge or Indicator w/wo Switches | 1 |
| L2313 | Tilt Level Switch | 1 |
| L2314 | Single Level Float Sensor or Switch | 1 |
| L2315 | Multi-level Float Sensor or Switch w/wo Temp Sensor | 1 |
| L2321 | Nuclear Radiation-Based Level Switch | 1 |
| L2351 | Ultrasonic Contact-Type Level Switch | 1 |
| L2361 | Vibrating Element Level Switch | 1 |
| L2371 | Rotary Level Switch | 1 |
| L2381 | Optical Level Switch w/wo Remote Controller | 1 |
| L2391 | Diaphragm Level Switch | 1 |
| L2501 | Liquid Level Gauge Glass w/wo Illuminator | 1 |
| L2511 | Magnetic Liquid Level Gauge or Indicator w/wo Switches | 1 |
| L2521 | Electromechanical Servo/Plumb Bob LevelTransmitter | 1 |
| **Pressure or Differential Pressure Devices** |
| P2001 | Pressure Gauge | 1 |
| P2002 | Digital Press or Diff Press Gauge w/wo Output Signal | 1 |
| P2011 | Pressure Gauge with Diaphragm Seal | 1 |
| P2101 | Differential Pressure Gauge | 1 |
| P2201 | Pressure Transmitter w/wo Integral Isolating Diaphragm | 1 |
| P2202 | Pressure Sensor/Transducer or Transmitter w/wo Switches | 1 |
| P2211 | Pressure Transmitter with Remote Diaphragm Seal | 1 |
| P2301 | Differential Pressure Transmitter | 1 |
| P2311 | Differential Pressure Transmitter with Seals | 1 |
| P2312 | Diff Pressure Transmitter with Remote Sensor | 1 |
| P2401 | Mechanical Pressure Switch | 1 |
| P2402 | Electronic Pressure Switch w/wo Transmitter | 1 |
| P2501 | Mechanical Differential Pressure Switch | 1 |
| P2502 | Electronic Differential Pressure Switch w/wo Transmitter | 1 |
| **Pressure Safety Devices** |
| P2901 | Rupture Disk Assembly w/wo Burst Sensor | 1 |
| P2902 | Explosion or Pressure Relief Vent | 1 |
| P2911 | Pressure Relief Tank Vent w/wo Integral Flame Arrester | 1 |
| P2912 | Emergency Pressure or Vacuum Vent | 1 |
| P2913 | Pilot Operated Pressure Vacuum Relief Valve | 1 |
| P2921 | Pressure Relief Valve | 1 |
| P2923 | Safety Relief Valve | 1 |
| P2924 | Pilot Operated Pressure Relief or Safety Relief Valve | 1 |
| P2925 | Hydraulic Pilot Operated Relief Valve w/wo Unloader | 1 |
| P2931 | Flame or Detonation Arrester w/wo Temperature Sensor | 1 |
| **Receiver Devices** |
| R2021 | Panel-mount or Rail Mount Process Controller | 1A |
| R2031 | Panel-mount or Rail Mount Temperature Controller | 1A |
| R2111 | Panel-mount or Rail Mount Digital Indicator or Meter | 1A |
| R2114 | Panel-mount or Rail Mount Counter or Totalizer | 1A |
| R2118 | Panel-mount Indicator light w/wo Integral switch | 1A |
| R2121 | Panel-mount Switch w/wo Integral light | 1A |
| R2221 | Field Signal Indicator w/wo Switches | 1 |
| R2311 | Circular Chart Recorder w/wo Controller or Probe | 1A |
| R2321 | Continuous Strip Chart Recorder w/wo Probe | 1A |
|  **Speed Devices** |
| S2001 | Wind Speed and Direction Sensor | 1 |
| S2011 | Magnetic Rotation Speed and Direction Sensor | 1 |
| S2013 | Magnetic Rotation Speed or Angular Position Encoder | 1 |
| S2014 | Optical Rotation Speed or Angular Position Encoder | 1 |
| S2021 | Rotation or Zero Speed Switch | 1 |
| S2022 | Rotation or Zero Speed Switch with Integral Sensor | 1 |
| S2023 | Rotation Speed Switch or Monitor-Rail Mount | 1 |
| S2025 | Rotation Speed Switch with Transmitter | 1 |
| S2402 | Handheld Tachometer or Surface Speed Meter | 1 |
| S2411 | Panel Mount Tachometer w/wo Transmitter | 1 |
| **Temperature Devices** |
| T2001 | Bimetallic Thermometer w/wo Thermowell | 1 |
| T2101 | Filled-System Thermometer w/wo Thermowell | 1 |
| T2111 | Filled-System Temperature Switch w/wo Thermowell | 1 |
| T2121 | Filled-System Temperature Transmitter w/wo Thermowell | 1 |
| T2201 | RTD Assembly w/wo Thermowell | 1 |
| T2211 | Thermistor Assembly | 1 |
| T2221 | RTD/Thermocouple Temperature Transmitter-Field Mount | 1 |
| T2222 | RTD/Thermocouple Temperature Transmitter-Head Mount | 1 |
| T2223  | Temperature Transmitter or Switch-Rail Mount | 1 |
| T2224 | Temperature Transmitter Assembly with Integral Sensor | 1 |
| T2301 | Thermocouple Assembly w/wo Thermowell | 1 |
| T2302  | Multipoint RTD/Thermocouple Assembly w/wo Thermowell | 1 |
| T2401 | Radiation or Infrared Thermometer or Pyrometer | 1 |
| T2402 | Handheld IR Thermometer w/wo Secondary Measurement | 1 |
| T2501 | Thermowell or Protecting Tube Assembly | 1 |
| **Multivariable Devices** |
| U2001 | Professional or Military Grade Weather Station | 1 |
| U2002 | Multivariable Data Logger or Remote Monitoring Station | 1 |
| U2005 | Flood Warning System or Sensor | 1 |
| U2011 | Annunciator w/wo Event Recording | 1 |
| U2012 | Annunciator Lamp Cabinet or Indicator | 1 |
| U2013 | Fire Alarm Control Panel w/wo Integral Annunciator | 1A |
| U2014 | Fire Panel Remote Annunciator or Indicator | 1 |
| U2015 | Pressure Relief Device Monitor or Annunciator | 1 |
| U2051 | Multivariable Flow Transmitter w/wo Calculation | 1 |
| U2321 | Muti-point or Hybrid Strip Chart Recorder | 1A |
| U2335 | Paperless Digital Recorder w/wo Remote I/O | 1A |
| U2347 | Insitu Water Multi-Parameter Probe w/wo Transmitter | 1 |
| U2348 | Insitu Water Multi-parameter Multiprobe with Transmitter | 1 |
| U2402 | Thermal or Hot-wire Anemometer with Probe | 1 |
| U2910 | Flow Computer or Totalizer or Transmitter | 1 |
| U2911 | Tank Data Integration or Monitor or Calculator w/wo Switches | 1 |
| U2912 | Tank or Leak/Point Level Alarm or Control | 1 |
| U2913 | Multi-Tank or Multi-Channel On-Off Level Controller | 1 |
| **Vibration or Mechanical Analysis Devices** |
| V2101 | Vibration Sensor/Transducer or Transmitter | 1 |
| V2201 | Vibration Transmitter/Alarm or Conditioner Module | 1 |
| V2301 | Vibration Switch | 1 |
| V2311 | Machinery Monitoring or Protection System | 1 |
| **Machinery Analysis Safety Devices** |
| VZ2013 | Safety Rotary Encoder w/wo Integrated Safety Functions | 1 |
| VZ2015 | Safety Linear Encoder w/wo Integrated Safety Functions | 1 |
| VZ2111 | Safety Speed Monitor or Relay or Controller | 1 |
| VZ2211 | Safety Relay or Safety Control Relay | 1 |
| VZ2311 | Safety Controller or Expansion Module or Unit | 1 |
| VZ2411 | Presence Sensing/Pressure-Sensitive Safety Mat System | 1 |
| VZ2511 | Safety Light Curtain – Point of Control | 1 |
| VZ2512 | Safety Light Curtain – Perimeter Access Control |  |
| **Weight Devices** |
| W2011 | Precision Scale or Balance | 1 |
| W2015 | Bench or Floor or Platform Scale | 1 |
| W2017 | Truck or Vehicle Scale | 1 |
| W2018 | Railroad Track or Combo Truck Scale | 1 |
| W2111 | Hanging Weight Indicator or Crane Scale | 1 |
| W2211 | Load Cell or Weighing Module | 1 |
| W2221 | Weight Indicator or Remote Display | 1 |
| W2910 | Weighing or Batch Indicator or Controller | 1 |
| **Relay or Compute or Converter Devices** |
| Y2211 | Signal Conditioner or Converter or Transmitter | 1 |
| Y2511 | Fieldbus Junction Component | 1 |
| Y2611 | Audible Signal Device | 1 |
| Y2612 | Visual Signal Device | 1 |
| **Position Devices** |
| Z2011 | Electromechanical Limit Switch | 1 |
| Z2012 | Proximity Sensor or Switch | 1 |
| Z2015 | Magnetic or Optical Linear Position or Length Encoder | 1 |
| Z2021 | Photoelectric or Distance Sensor or Switch | 1 |
| Z2111 | Position Sensor or Transducer or Transmitter | 1 |
| Z2121 | Industrial Inclination or Tilt Sensor or Inclinometer |  |

Total Operating Parameter Forms 18

Total Device Specification Forms 270