**CONTROL VALVE SPECIFICATION**

E-TSM 103 Appendix

|  |  |  |  |
| --- | --- | --- | --- |
| 01 Plant | 02 Location, Room No | 03 System No | 04 Component No |
|  |  |  |  |
| 05 Quantity | | | |
|  | | | |
| 07 Date | | 08 Revised, Date Item | |
|  | |  | |

**OPERATING CONDITIONS**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 09 Medium | | | | | | | | | | 10 Valve Function | | | | | | | | | 11 Transients | | | | | |
|  | | | | | | | | | |  | | | | | | | | |  | | | | | |
| 12 Ambient Conditions | | | Pressure | | | | | | | | | | | | Temperature | | | Humidity | | | | Radiation | | |
| Normal | | |  | | | MPa/°C | | | | | | | | |  | | °C |  | | RH % | |  | | mSv/h |
| 13 Ambient Conditions | | | Pressure | | | | | | | | | | | | Temperature | | | Humidity | | | | Radiation | | |
| Abnormal | | |  | | | MPa/°C | | | | | | | | |  | | °C |  | | RH % | |  | | mSv/h |
|  | |  | | | | | | | | |  | | | | | 14 Max | | | 15 Normal | | | | 16 Min | |
| Flow liquid | |  | | | | | | | | | | Qv m3/h | | | |  | | |  | | | |  | |
|  | | | | | | | | | | | | | | | | 17 Max | | | 18 Normal | | | | 19 Min | |
| Flow gas at ref cond 0 °C 0,1MPa MPA | | | | | | | |  | | | | Qv m3/h | | | |  | | |  | | | |  | |
|  | | | | | | | | | | | | | | | | 20 Max | | | 21 Normal | | | | 22 Min | |
| Flow Steam | |  | | | | | | | | | | Qm kg/s | | | |  | | |  | | | |  | |
|  | | | | | | | | | | | | | | | | 23 Max | | | 24 Normal | | | | 25 Min | |
| Inlet Pressure |  | | | | | | | | | | | P1 MPa | | | |  | | |  | | | |  | |
|  | | | | | | | | | | | | | | | | 26 Max | | | 27 Normal | | | | 28 Min | |
| Outlet Pressure | | | |  | | | | | | | | P2 MPa | | | |  | | |  | | | |  | |
|  | | | | | | | | | | | | | | | | 29 Max | | | 30 Normal | | | | 31 Min | |
| Pressure drop |  | | | | | | | | | | | ΔP MPa | | | |  | | |  | | | |  | |
|  | | | | | | | | | | | | | | | | 32 Max | | | | | | | | |
| Max pressure drop closed valve | | | | | | |  | | | | | MPa | | | |  | | | | | | | | |
|  | | | | | | | | | | | | | | | | 33 Max | | | 34 Normal | | | | 35 Min | |
| Inlet temperature | | | | |  | | | | | | | t1 °C | | | |  | | |  | | | |  | |
|  | | | | | | | | | | | | | | | | 36 Max | | | 37 Normal | | | | 38 Min | |
| Density (if gas at 0 °C and 0,1 MPa) | | | | | | | | |  | | | | | S kg/m3 | |  | | |  | | | |  | |
|  | | | | | | | | | | | | | | | | 39 Max | | | 40 Normal | | | | 41 Min | |
| Flow coefficient | | | | | | | | | | | | kv m3/h | | | |  | | |  | | | |  | |
|  | | | | | | | | | | | | | | | | 42 Calculated | | | | | 43 Selected | | | |
| Flow coeff. At 100% lift | | | | | | | | | | | | | kv m3/h | | |  | | | | |  | | | |

**DESIGN DATA**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 44 Valve Type | | | | | | | | | | 45 Design Press | | | | | | | | | | | | | | | | | | | | | | 46 Design Temp | | | | | | | | | | | | | |
|  | | | | | | | | | |  | | | | | | | | | | | | | | MPa | | | | | | | |  | | | | | | | | | | °C | | | |
| 47 Connection Size | | | | | | | | | | 48 Connection Type | | | | | | | | | | | | | | | | | | | | | | 49 Flow tending to | | | | | | | | | | | | | |
|  | | | | | | | | | | Weld | | | |  | Flange | | | |  | | Thread | | | | |  | | | | | | Open | | | | |  | | | Close | | | |  | |
| 50 Stem Sealing Arrangement | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Single packing | | | |  | | | | Double packing with intermediate drain | | | | | | | | | | | | | | | | |  | | | | Bellows with single packing | | | | | | | | | | | | | | |  | |
| 51 Body Bonnet Sealing Arrangement | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Single gasket | | | | | | |  | | | | | Provision for seal weld | | | | | | | | | | |  | | | | | | | Pressure Seal | | | | | | | | | | |  | | | | |
| 52 Valve Characteristics | | | | | | | | | | | | | | | | | | | | 53 Seat Type | | | | | | | | | | | | | | | | | | | | | | | | | |
| EQ | |  | | | QO | | | | | |  | | Lin. | | | |  | | | Stand. | | | | | | |  | | | | Repl. | | | | | | |  | Seal weld | | | | | |  |
| 54 Hydraulic Packing Removal | | | | | | | | | | 55 Nozzle for Body Drain | | | | | | | | | | | | 56 Insevice Inspection | | | | | | | | | | | | | | | | | | | | | | | |
| Yes |  | | No | | |  | | | | Yes | | | |  | | No | |  | | | | Yes | | | |  | | | | | | | No | | |  | | | | | | | | | |
| 57 Connecting Pipe Dimension Inlet | | | | | | | | | | | | | | | | | | | | 58 Connecting Pipe Dimension Oulet | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | mm | | | | | | | | | | |  | | | | | | | | | | | | | | mm | | | | | | | | | | | |
| 59 Max Valve Length | | | | | | | | | | | | | | | | | | | | 60 Max Height | | | | | | | | | | | | | | | 61 Max Weight | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | mm | | | |  | | | | | | | | mm | | | | | | |  | | | | | | | | kg | | |

**MATERIAL**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 62 Restrictions to Co-based material | | 63 Restrictions to PTFE | | | 64 Restricitons to Aluminium | | |
| Yes | No | Yes | | No | Yes | | No |
| 65 Connecting Pipe Inlet | | | 66 Connecting Pipe Outlet | | | | |
|  | | |  | | | | |
| 67 Body Bonnet | | | 68 Stem | | | | |
|  | | |  | | | | |
| 69 Disc | | | 70 Seat | | | | |
|  | | |  | | | | |
| 71 Gasket, Body Bonnet | | | 72 Stem Packing | | | | |
|  | | |  | | | | |
| 73 Connection flanges gasket | | | 74 | | | | |
|  | | | Seat | | | Disc | |

**QUALITY**

|  |  |  |  |
| --- | --- | --- | --- |
| 75 Quality Class | 76 Design acc. to: | 77 Inspection acc. to: | 78 Seismic class |
|  |  |  |  |
| 79 Surface treatment acc. to | 80 Tightness Class (Internal Leakage)  81 | 81 Tightness Class (Leakage to Atmosphere) | |
|  |  |  | |

**ACTUATOR**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 82 Actuator Type | | | | | | | | | | | | | | | | | | | | | | | 83 Actuator Acting  84 Actuator Acting | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Motor | | |  | Pneum | | | | |  | | | Hydr. | | | | | |  | | | | |  | | | | | | | | | | | | Direct | | |  | | | | | | Reverse | | | | | | | |  | |
| 84 Electric Supply | | | | | | | | | | | | | | | | | | 85 Electric Power | | | | | | | | | | | | | | | | | | 86 Electric Control Signal | | | | | | | | | | | | | | | | | |
|  | | | | | V | |  | | | | | | | Hz | | | |  | | | | | | | | | | | | W | | | | | |  | | | | | | | | | | | | | mA | | | | |
| 87 Air Supply | | | | | | | | | | | | | | | | | | 88 Air Consumption (NPT) | | | | | | | | | | | | | | | | | | 89 Pneumatic Control Signal | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | MPa | | | |  | | | | | | m3/h | | | | | | | | | | | |  | | | | | | | | | | | | | MPa | | | | |
| 90 Positioner | | | | | | | | | | | | | | | | | | 91 Positioner Type | | | | | | | | | | | | | | | | | | 92 Positioner Supply | | | | | | | | | | | | | | | | | |
| Yes | |  | | | | | No | | | |  | | | | | | |  | | | | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | | | | |
| 93 Hand Wheel | | | | | | | | | | | | | | | | | | 94 Supply Failure | | | | | | | | | | | | | | | | | | 95 Control Signal Failure | | | | | | | | | | | | | | | | | |
| Yes | |  | | | | | No | | | |  | | | | | | | Open |  | Close | | | | | |  | | | Lock | | | | |  | | Open | | |  | | Close | |  | | | | | Lock | | | | |  |
| 96 Rated Torque | | | | | | | | | | | | | | | | | | 97 Stroke Time  9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | Nm | | | | Open | | |  | | | | | | | | | | s | | | | | Close | | | | |  | | | | | | | s | | | | | |
| 98 Req. Torque opening / closing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Start |  | | | | **/** |  | | | | Nm | | | | | | During Operation | | | | | |  | | | | | **/** |  | | | | | Nm | | | | Backseating | | | | |  | | | | **/** |  | | | | Nm | | |
| 99 Max. Permitted Torque for the Valve | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Into open pos. | | | | | | | |  | | | | | | | Nm | | Into Closed pos. | | | | | | | |  | | | | | | | Nm | | | | During operation | | | | | | | | |  | | | | | Nm | | | |
| 100 Spring-Loaded Stem Nut (if actuator is motor operated) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Yes | | | | | | | | | | | | |  | | | | | | | | | | | No | | | | | | | | | | | | | | | |  | | | | | | | | | | | | | |

**ACCESSORIES**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 101 Torque Limit Switches | | | | | | | | 102 Travel Limit Switches | | | | | | | | | | | | | | 103 Position Switches | | | | | | | | | |
| Open pos | |  | | Closed pos | | |  | Open | |  | | Close | | | |  | | | Interm | |  | Yes | |  | | | No | |  | | |
| 104 Mech Position Indicator | | | | | | | | 105 Position Potentiometer | | | | | | | | | | | | | | 106 Position Transmitter | | | | | | | | | |
| Yes |  | | No | | |  | | Yes |  | | | | | No | | | |  | | | | Yes | |  | No | | | |  | | |
| 107 Tachometer | | | | | | | | 108 Motor Brake | | | | | | | | | | | | | | 109 Motor Capacitor | | | | | | | | | |
| Yes |  | | No | |  | | | Yes |  | | | | No | | | |  | | | | | Yes |  | | No | | | |  | | |
| 110 Controller Type | | | | | | | | 111 Limit Switch setting | | | | | | | | | | | | | | 112 Torque setting | | | | | | | | | |
|  | | | | | | | | Open | | |  | | | | Close | | | | |  | | Open: | |  | | Nm | | Close | |  | Nm |

**GENERAL ACTUATOR SPECIFICATIONS**

|  |  |  |  |
| --- | --- | --- | --- |
| 113 Manufacturer | | 114 Actuator Type No | 115 Degree of Protection |
|  | |  |  |
| 116 Weight | | 117 Drawings No | 118 Wiring Diagram |
|  | Kg |  |  |

**REMARKS**

|  |
| --- |
| 119 Manufacturer to fill in item 85, 88, 91, 92, 93, 94, 98, 99, 112 |
|  |
|  |