|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Noise Level Calculation 噪声计算** | | By |  | |
| According to 计算依据 | | | **API 521-2014** | |
| **Data Input 数据输入** | | | **Sketch** | |
| Mass flow through valve, qm  额定泄放量 | kg/s | **$$001** |  | |
| Inlet pressure, P1  泄放状态入口压力 | MPa(A) | **$$002** |
| Gas temperature, T  泄放温度 | K | **$$003** |
| Outlet pressure, P2  安全阀背压 | MPa(A) | **$$004** |
| Relative molecular mass, M  气体相对摩尔质量 | g/mol | **$$005** |
| Ratio of the specific heats, k  气体绝热指数 | / | **$$006** |
| Height of the vent aboveground, h  泄放点距地面高度 | m | **$$007** |
| Distance from sound source, r  距泄放点任意距离r处 | m | **$$008** |
| **Calculation 计算结果** | | | | |
| Speed of sound in the gas, c  泄放状态介质声速 | m/s |  | | **$$009** |
| Relieving outlet pressure, Po  泄放状态出口压力 | MPa(A) |  | | **$$010** |
| Pressure ratio, PR  泄放状态压力比 | / |  | | **$$011** |
| Base Noise level, L  基础噪声强度 | dB | Figure 18 | | **$$012** |
| Noise level at distance 30 m, L30  距排放点30米处噪声强度 | dB |  | | **$$013** |
| Noise level at distance r, Lp  距排放点r米处噪声强度 | dB |  | | **$$014** |

Note: The above calculations are based on spherical spreading of the sound. If distances much larger than the height of the vent aboveground are of concern, add 3 dB to the calculated result to correct for hemispherical diffusion.

注：以上计算以声音作球面传播为依据，如果传播距离远大于放空点在地面以上的高度(10m为限)，计算结果应加上3dB作为修正。