```
# Correlation matrix of the readings from the vibration sensors  and the fault detection
data = FaultPandasFrame
plt.figure(figsize=(20,8))
sns.heatmap(data.corr(), annot = True)
```

:[14]: <AxesSubplot:>

Fault detected based on vibration readings from sensor 1

Fault detected based on vibration readings from sensor 1

fault_detected
- 0
- 1

3591, 998, 951, 40, 94, 1134, 10, 1966, 494

Count

vibration readings from sensor
0-0.2, 0.2-0.4, 0.4-0.6, 0.6-0.8, 0.8-1.0

Percentage of fault detected by vibrations from sensor 1

fault_detected
- 0
- 1

78.28%, 21.72%
90.48%, 9.52%
2.49%, 97.51%
0.52%, 99.48%

count

Vibration
(0.0233, 0.236] (0.236, 0.447] (0.447, 0.658] (0.658, 0.87] (0.87, 1.081]

The percentage of fault detected within each bins in sensor 1

fault_detected
- 0
- 1

percentage

vibration readings from sensor
0-0.2, 0.2-0.4, 0.4-0.6, 0.6-0.8, 0.8-1.0

Fault detected based on vibration readings from sensor 8

Fault detected based on vibration readings from sensor 8

Percentage of fault detected by vibrations from sensor 8

Fault detected based on vibration readings from sensor 14

Count

fault_detected
0
1

vibration range	0 count	1 count
0-0.2	3594	940
0.2-0.4	956	47
0.4-0.6	92	1149
0.6-0.8	3	2002
0.8-1.0		494
1.0-1.2		14
1.2-1.4		1

vibration readings from sensor

Percentage of fault detected by vibrations from sensor 14

count

fault_detected
0
1

79.23%, 20.77%
94.37%, 5.63%
3.61%, 96.39%
0.15%, 99.85%
12.50%, 87.50%

(0.0238, 0.223]   (0.223, 0.421]   (0.421, 0.619]   (0.619, 0.817]   (0.817, 1.015]   (1.015, 1.213]

Vibration