

ISO 14291:2012-07 (E)

Vacuum gauges - Definitions and specifications for quadrupole mass spectrometers

| Contents | | Page |
|--------------------|--|-------------|
| Foreword | | iv |
| Introduction | | v |
| 1 | Scope | 1 |
| 2 | Terms and definitions | 1 |
| 2.1 | Definitions of components | 1 |
| 2.2 | Definitions of physical parameters | 5 |
| 3 | Symbols and abbreviated terms | 8 |
| 4 | Principle of QMS | 9 |
| 5 | Specifications for a QMS to be provided by manufacturers | 9 |
| 5.1 | Mass range | 9 |
| 5.2 | Type of ion source | 9 |
| 5.3 | Type of ion detector | 9 |
| 5.4 | Mass resolution | 10 |
| 5.5 | Mass number stability | 10 |
| 5.6 | Sensitivity | 10 |
| 5.7 | Linear response range | 10 |
| 5.8 | Minimum detectable partial pressure | 10 |
| 5.9 | Minimum detectable concentration | 10 |
| 5.10 | Maximum operational pressure | 10 |
| 5.11 | Scanning parameter | 10 |
| 5.12 | Signal output | 11 |
| 5.13 | Potentials | 11 |
| 5.14 | Detector specifications | 11 |
| 5.15 | Set point | 11 |
| 5.16 | Maximum bake-out temperature | 11 |
| 5.17 | Nominal operating conditions | 11 |
| 5.18 | Warm-up time | 11 |
| 5.19 | Filament material | 11 |
| 5.20 | Electron emission current | 11 |
| 5.21 | Filament exchange | 11 |
| 5.22 | Detector exchange | 11 |
| 5.23 | Fitting to chamber | 12 |
| 5.24 | Mounting orientation | 12 |
| 5.25 | Dimensions | 12 |
| 5.26 | Internal volume | 12 |
| 5.27 | Mass of sensor head and electronic unit | 12 |
| 5.28 | Input power of electronic unit | 12 |
| 5.29 | Cable | 12 |
| 5.30 | Software | 12 |
| 5.31 | Interface | 12 |
| 5.32 | Storage and transportation condition | 12 |
| 6 | Optional specifications for QMS to be provided by manufacturers | 13 |
| 6.1 | Mass resolution | 13 |
| 6.2 | Fragmentation or cracking pattern | 13 |
| 6.3 | Temperature coefficient of sensitivity | 13 |

| | | |
|-----|---------------------------|----|
| 6.4 | QMS sensor cleaning | 13 |
| 6.5 | Degassing | 13 |
| 6.6 | Degassing power | 13 |
| 6.7 | Photographs | 13 |
| 6.8 | Inspection record | 13 |
| 6.9 | Outgassing rate | 13 |
| | Bibliography | 14 |