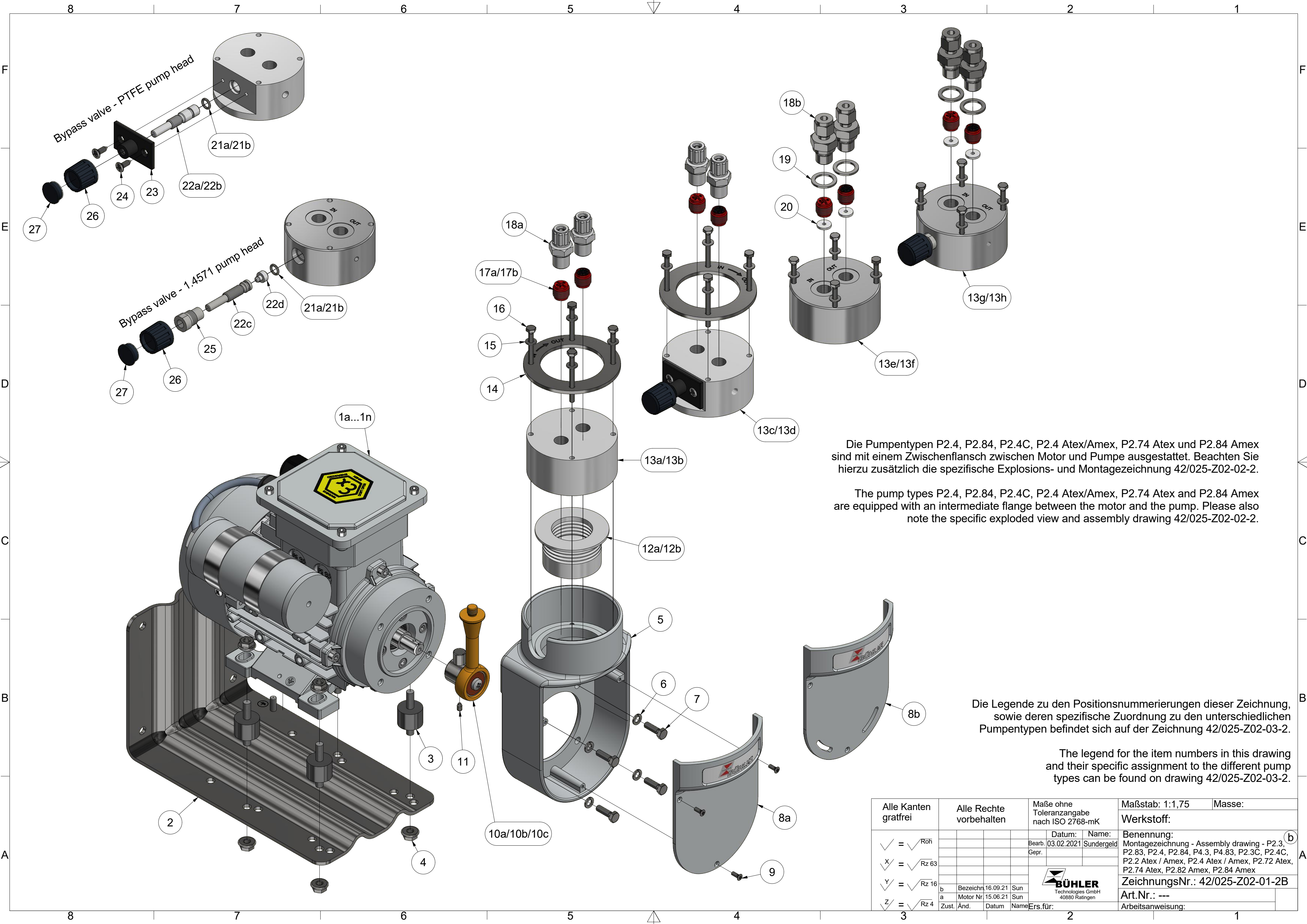


## 10 Documents joints

- Schémas : 42/025-Z02-01-2, 42/025-Z02-02-2, 42/025-Z02-03-2
- Déclaration de conformité : KX 42 0001
- Mode d'emploi : Moteur électrique
- Attestations : FM21NUS0010, FM21NCA0007
- RMA - Déclaration de décontamination



Die Pumpentypen P2.4, P2.84, P2.4C, P2.4 Atex/Amex, P2.74 Atex und P2.84 Amex sind mit einem Zwischenflansch zwischen Motor und Pumpe ausgestattet. Beachten Sie hierzu zusätzlich die spezifische Explosions- und Montagezeichnung 42/025-Z02-02-2.

The pump types P2.4, P2.84, P2.4C, P2.4 Atex/Amex, P2.74 Atex and P2.84 Amex are equipped with an intermediate flange between the motor and the pump. Please also note the specific exploded view and assembly drawing 42/025-Z02-02-2.

Die Legende zu den Positionsnummerierungen dieser Zeichnung, sowie deren spezifische Zuordnung zu den unterschiedlichen Pumpentypen befindet sich auf der Zeichnung 42/025-Z02-03-2.

The legend for the item numbers in this drawing and their specific assignment to the different pump types can be found on drawing 42/025-Z02-03-2.

|                         |  |                            |  |                                                 |  |                                                                                                                                                                               |        |
|-------------------------|--|----------------------------|--|-------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Alle Kanten<br>gratfrei |  | Alle Rechte<br>vorbehalten |  | Maße ohne<br>Toleranzangabe<br>nach ISO 2768-mK |  | Maßstab: 1:1,75                                                                                                                                                               | Masse: |
| ✓ = √ R0f               |  |                            |  | Datum:                                          |  | Werkstoff:                                                                                                                                                                    |        |
| X/ = √ Rz 63            |  |                            |  | Bearb. 03.02.2021                               |  | Name:                                                                                                                                                                         |        |
| Y/ = √ Rz 16            |  |                            |  | Gepr.                                           |  | Benennung:                                                                                                                                                                    |        |
| Z/ = √ Rz 4             |  |                            |  |                                                 |  | Montagezeichnung - Assembly drawing - P2.3, P2.83, P2.4, P2.84, P4.3, P4.83, P2.3C, P2.4C, P2.2 Atex / Amex, P2.4 Atex / Amex, P2.72 Atex, P2.74 Atex, P2.82 Amex, P2.84 Amex |        |
|                         |  |                            |  |                                                 |  | ZeichnungsNr.: 42/025-Z02-01-2B                                                                                                                                               |        |
|                         |  |                            |  |                                                 |  | Art.Nr.: ---                                                                                                                                                                  |        |
|                         |  |                            |  |                                                 |  | Arbeitsanweisung:                                                                                                                                                             |        |





| Zeichnungsnummer/Drawing no. 42/025-Z02-03-2   Rev.B   Date: 16.09.2021   Autor: Sundergeld<br>Änderung: B = P4 Motoren hinzugefügt   Geprüft am:   Prüfer: |                                                                               |                                                                            | Legende und spezifische Zuordnung der Positionsnummern aus den Montagezeichnungen<br>Legend and specific assignment for the item numbers of the assembly drawings |       |      |       |      |       |       |       |           |           |           |           |            |            |            |            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------|-------|------|-------|-------|-------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|
| Pos. No.                                                                                                                                                    | Description                                                                   | Beschreibung                                                               | P2.3                                                                                                                                                              | P2.83 | P2.4 | P2.84 | P4.3 | P4.83 | P2.3C | P2.4C | P2.2 Atex | P2.2 Amex | P2.4 Atex | P2.4 Amex | P2.72 Atex | P2.74 Atex | P2.82 Amex | P2.84 Amex |
| 1a                                                                                                                                                          | Motor 230V 50/60Hz                                                            | Motor 230V 50/60Hz                                                         | X                                                                                                                                                                 | X     | X    | X     | ---  | ---   | X     | X     | ---       | ---       | ---       | ---       | ---        | ---        | ---        | ---        |
| 1b                                                                                                                                                          | Motor 115V 50/60Hz                                                            | Motor 115V 50/60Hz                                                         | X                                                                                                                                                                 | X     | X    | X     | ---  | ---   | X     | X     | ---       | ---       | ---       | ---       | ---        | ---        | ---        | ---        |
| 1c                                                                                                                                                          | Motor 230/400V 50/60Hz                                                        | Motor 230/400V 50/60Hz                                                     | X                                                                                                                                                                 | X     | X    |       | ---  | ---   | X     | X     | ---       | ---       | ---       | ---       | ---        | ---        | ---        | ---        |
| 1d                                                                                                                                                          | Motor 230V 50/60Hz with two shaft ends                                        | Motor 230V 50/60Hz mit 2 Wellenenden                                       | ---                                                                                                                                                               | ---   | ---  | ---   | X    | X     | ---   | ---   | ---       | ---       | ---       | ---       | ---        | ---        | ---        | ---        |
| 1e                                                                                                                                                          | Motor 115V 50/60Hz with two shaft ends                                        | Motor 115V 50/60Hz mit 2 Wellenenden                                       | ---                                                                                                                                                               | ---   | ---  | ---   | X    | X     | ---   | ---   | ---       | ---       | ---       | ---       | ---        | ---        | ---        | ---        |
| 1f                                                                                                                                                          | Motor 230V 50/60Hz Atex, IECEX                                                | Motor 230V 50/60Hz Atex, IECEX                                             | ---                                                                                                                                                               | ---   | ---  | ---   | ---  | ---   | ---   | ---   | X         | ---       | X         | ---       | X          | X          | ---        | ---        |
| 1g                                                                                                                                                          | Motor 115V 50/60Hz Atex, IECEX                                                | Motor 115V 50/60Hz Atex, IECEX                                             | ---                                                                                                                                                               | ---   | ---  | ---   | ---  | ---   | ---   | ---   | X         | ---       | X         | ---       | X          | X          | ---        | ---        |
| 1h                                                                                                                                                          | Motor 380-420V 50Hz Atex, IECEX                                               | Motor 380-420V 50Hz Atex, IECEX                                            | ---                                                                                                                                                               | ---   | ---  | ---   | ---  | ---   | ---   | ---   | X         | ---       | X         | ---       | X          | X          | ---        | ---        |
| 1i                                                                                                                                                          | Motor 500V 50Hz Atex, IECEX                                                   | Motor 500V 50Hz Atex, IECEX                                                | ---                                                                                                                                                               | ---   | ---  | ---   | ---  | ---   | ---   | ---   | X         | ---       | X         | ---       | X          | X          | ---        | ---        |
| 1j                                                                                                                                                          | Motor 230V 50/60Hz Cl.I, Div.2                                                | Motor 230V 50/60Hz Cl.I, Div.2                                             | ---                                                                                                                                                               | ---   | ---  | ---   | ---  | ---   | ---   | ---   | ---       | X         | ---       | X         | ---        | ---        | X          | X          |
| 1k                                                                                                                                                          | Motor 115V 50/60Hz Cl.I, Div.2                                                | Motor 115V 50/60Hz Cl.I, Div.2                                             | ---                                                                                                                                                               | ---   | ---  | ---   | ---  | ---   | ---   | ---   | ---       | X         | ---       | X         | ---        | ---        | X          | X          |
| 2                                                                                                                                                           | Montagekonsole                                                                | Mounting bracket                                                           | X                                                                                                                                                                 | X     | ---  | ---   | X    | X     | X     | ---   | X         | X         | ---       | ---       | X          | ---        | X          | ---        |
| 3                                                                                                                                                           | Gummi-Metall-Puffer                                                           | Shock absorber                                                             | X                                                                                                                                                                 | X     | ---  | ---   | X    | X     | X     | ---   | X         | X         | ---       | ---       | X          | ---        | X          | ---        |
| 4                                                                                                                                                           | Mutter DIN 6923 - M6                                                          | Nut DIN 6923 - M6                                                          | X                                                                                                                                                                 | X     | ---  | ---   | X    | X     | X     | ---   | X         | X         | ---       | ---       | X          | ---        | X          | ---        |
| 5                                                                                                                                                           | Pumpenkonsole                                                                 | Pump housing                                                               | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | X          | X          | X          | X          |
| 6                                                                                                                                                           | Federring DIN 127 B5,1                                                        | Spring washer DIN 127 B5,1                                                 | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | X          | X          | X          | X          |
| 7                                                                                                                                                           | Schraube DIN 933 M5x16                                                        | Screw DIN 933 M5x16                                                        | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | X          | X          | X          | X          |
| 8a                                                                                                                                                          | Konsolendeckel - standard                                                     | Cover - standard                                                           | X                                                                                                                                                                 | X     | X    | X     | X    | X     | ---   | ---   | X         | X         | X         | X         | X          | X          | X          | X          |
| 8b                                                                                                                                                          | Konsolendeckel mit Schlitzen                                                  | Cover with slots                                                           | ---                                                                                                                                                               | ---   | ---  | ---   | ---  | ---   | X     | X     | ---       | ---       | ---       | ---       | ---        | ---        | ---        | ---        |
| 9                                                                                                                                                           | Schraube DIN 966 M3x8                                                         | Screw DIN 966 M3x8                                                         | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | X          | X          | X          | X          |
| 10a                                                                                                                                                         | Kurbeltrieb für 400l/h Pumpen (Stößel gold)                                   | Crank drive for 400l/h pumps (plunger gold)                                | X                                                                                                                                                                 | ---   | X    | ---   | X    | ---   | X     | X     | X         | X         | X         | X         | ---        | ---        | ---        | ---        |
| 10b                                                                                                                                                         | Kurbeltrieb für 700l/h Pumpen (Stößel grün)                                   | Crank drive for 700l/h pumps (plunger green)                               | ---                                                                                                                                                               | ---   | ---  | ---   | ---  | ---   | ---   | ---   | ---       | ---       | ---       | ---       | X          | X          | ---        | ---        |
| 10c                                                                                                                                                         | Kurbeltrieb für 800l/h Pumpen (Stößel schwarz)                                | Crank drive for 800l/h pumps (plunger black)                               | ---                                                                                                                                                               | X     | ---  | X     | ---  | X     | ---   | ---   | ---       | ---       | ---       | ---       | ---        | ---        | X          | X          |
| 11                                                                                                                                                          | Schraube DIN 915 M4x6 oder ISO 4028 M4X6 TX 8                                 | Screw DIN 915 M4x6 or ISO 4028 M4X6 TX 8                                   | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | X          | X          | X          | X          |
| 12a                                                                                                                                                         | Faltenbalg für 400l/h Pumpen (4 Falten)                                       | Below for 400l/h pumps (4 folds)                                           | X                                                                                                                                                                 | ---   | X    | ---   | X    | ---   | X     | X     | X         | X         | X         | X         | ---        | ---        | ---        | ---        |
| 12b                                                                                                                                                         | Faltenbalg für 700l/h und 800l/h Pumpen (8 Falten)                            | Below for 700l/h and 800l/h pumps (8 folds)                                | ---                                                                                                                                                               | X     | ---  | X     | ---  | X     | ---   | ---   | ---       | ---       | ---       | ---       | X          | X          | X          | X          |
| 13a                                                                                                                                                         | Pumpenkörper - PTFE für 400l/h Pumpen                                         | Pump head - PTFE for 400l/h pumps                                          | X                                                                                                                                                                 | ---   | X    | ---   | X    | ---   | X     | X     | X         | X         | X         | X         | ---        | ---        | ---        | ---        |
| 13b                                                                                                                                                         | Pumpenkörper - PTFE für 800l/h Pumpen                                         | Pump head - PTFE for 800l/h pumps                                          | ---                                                                                                                                                               | X     | ---  | X     | ---  | X     | ---   | ---   | ---       | ---       | ---       | ---       | ---        | ---        | X          | X          |
| 13c                                                                                                                                                         | Pumpenkörper - PTFE mit Bypassventil für 400l/h Pumpen                        | Pump head - PTFE with bypass valve for 400l/h pumps                        | X                                                                                                                                                                 | ---   | X    | ---   | X    | ---   | X     | X     | X         | X         | X         | X         | ---        | ---        | ---        | ---        |
| 13d                                                                                                                                                         | Pumpenkörper - PTFE mit Bypassventil 800l/h Pumpen                            | Pump head - PTFE with bypass valve for 800l/h pumps                        | ---                                                                                                                                                               | X     | ---  | X     | ---  | X     | ---   | ---   | ---       | ---       | ---       | ---       | ---        | ---        | X          | X          |
| 13e                                                                                                                                                         | Pumpenkörper - 1.4571 für 400l/h und 700l/h Pumpen                            | Pump head - 1.4571 for 400l/h and 700l/h pumps                             | X                                                                                                                                                                 | ---   | X    | ---   | X    | ---   | X     | X     | X         | X         | X         | X         | X          | X          | ---        | ---        |
| 13f                                                                                                                                                         | Pumpenkörper - 1.4571 für 800l/h Pumpen                                       | Pump head - 1.4571 for 800l/h pumps                                        | ---                                                                                                                                                               | X     | ---  | X     | ---  | X     | ---   | ---   | ---       | ---       | ---       | ---       | ---        | ---        | X          | X          |
| 13g                                                                                                                                                         | Pumpenkörper - 1.4571 mit Bypassventil für 400l/h und 700l/h Pumpen           | Pump head - 1.4571 with bypass valve for 400l/h and 700l/h pumps           | X                                                                                                                                                                 | ---   | X    | ---   | X    | ---   | X     | X     | X         | X         | X         | X         | X          | X          | ---        | ---        |
| 13h                                                                                                                                                         | Pumpenkörper - 1.4571 mit Bypassventil für 800l/h Pumpen                      | Pump head - 1.4571 with bypass valve for 800l/h pumps                      | ---                                                                                                                                                               | X     | ---  | X     | ---  | X     | ---   | ---   | ---       | ---       | ---       | ---       | ---        | ---        | X          | X          |
| 14                                                                                                                                                          | Montagering - nur für PTFE Pumpenkörper                                       | Mounting ring - only for pump heads made of PTFE                           | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | ---        | ---        | X          | X          |
| 15                                                                                                                                                          | Spannscheibe DIN 6796 d=4                                                     | Clamping washer DIN 6796 d=4                                               | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | X          | X          | X          | X          |
| 16                                                                                                                                                          | Schraube DIN 933 M4x45                                                        | Screw DIN 933 M4x45                                                        | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | X          | X          | X          | X          |
| 17a                                                                                                                                                         | Ventil - geeignet bis zu 100°C Gaseingangstemperatur                          | Valve - suitable up to 100°C gas inlet temperature                         | X                                                                                                                                                                 | ---   | ---  | ---   | X    | ---   | X     | ---   | X         | X         | ---       | ---       | ---        | ---        | ---        | ---        |
| 17b                                                                                                                                                         | Ventil - geeignet bis zu 160°C Gaseingangstemperatur                          | Valve - suitable up to 160°C gas inlet temperature                         | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | X          | X          | X          | X          |
| 18a                                                                                                                                                         | Kunststoff Einschraubverschraubung - diverse Typen - siehe Pumpendatenblätter | Plastic fitting - various types - see pump data sheets                     | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | ---        | ---        | X          | X          |
| 18b                                                                                                                                                         | Edelstahl Rohrverschraubung - diverse Typen - siehe Pumpendatenblätter        | Stainless steel fitting - various types - see pump data sheets             | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | X          | X          | X          | X          |
| 19                                                                                                                                                          | Dichtring - nur für Edelstahl Pumpenkörper                                    | Sealing ring - only for pump heads made of 1.4571                          | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | X          | X          | X          | X          |
| 20                                                                                                                                                          | Verdränger - nur für Edelstahl Pumpenkörper                                   | Displacer - only for pump heads made of 1.4571                             | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | X          | X          | X          | X          |
| 21a                                                                                                                                                         | O-Ring - FKM                                                                  | O-Ring made of FKM                                                         | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | X          | X          | X          | X          |
| 21b                                                                                                                                                         | O-Ring - FFKM                                                                 | O-Ring made of FFKM                                                        | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | X          | X          | X          | X          |
| 22a                                                                                                                                                         | Spindel für Bypassventil - geeignet bis zu 100°C Gaseingangstemperatur        | Spindle for PTFE bypass valve - suitable up to 100°C gas inlet temperature | X                                                                                                                                                                 | ---   | ---  | ---   | X    | ---   | X     | ---   | X         | X         | ---       | ---       | ---        | ---        | ---        | ---        |
| 22b                                                                                                                                                         | Spindel für Bypassventil - geeignet bis zu 160°C Gaseingangstemperatur        | Spindle for PTFE bypass valve - suitable up to 160°C gas inlet temperature | ---                                                                                                                                                               | X     | X    | X     | ---  | X     | ---   | X     | ---       | ---       | X         | X         | X          | X          | X          | X          |
| 22c                                                                                                                                                         | Spindel für Edelstahl Bypassventil                                            | Spindle for 1.4571 bypass valve                                            | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | X          | X          | X          | X          |
| 22d                                                                                                                                                         | Spindelspitze                                                                 | Spindle tip                                                                | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | X          | X          | X          | X          |
| 23                                                                                                                                                          | Montageplatte Bypassventil                                                    | Mounting plate bypass valve                                                | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | ---        | ---        | X          | X          |
| 24                                                                                                                                                          | Schraube DIN 7982 4,2x13                                                      | Screw DIN 7982 4,2x13                                                      | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | ---        | ---        | X          | X          |
| 25                                                                                                                                                          | Spindelaufnahme                                                               | Spindle holder                                                             | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | X          | X          | X          | X          |
| 26                                                                                                                                                          | Drehknopf                                                                     | Knob                                                                       | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | X          | X          | X          | X          |
| 27                                                                                                                                                          | Deckel                                                                        | Cover                                                                      | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | X          | X          | X          | X          |
| 28                                                                                                                                                          | Zwischenflansch                                                               | Intermediate flange                                                        | ---                                                                                                                                                               | ---   | X    | X     | ---  | ---   | ---   | X     | ---       | ---       | X         | X         | ---        | X          | ---        | X          |
| 28a/28b                                                                                                                                                     | Kupplungsnahe                                                                 | Coupling hub                                                               | ---                                                                                                                                                               | ---   | X    | X     | ---  | ---   | ---   | X     | ---       | ---       | X         | X         | ---        | X          | ---        | X          |
| 28c                                                                                                                                                         | Kupplungsstern                                                                | Spider                                                                     | ---                                                                                                                                                               | ---   | X    | X     | ---  | ---   | ---   | X     | ---       | ---       | X         | X         | ---        | X          | ---        | X          |
| 29                                                                                                                                                          | Kupplungsflansch                                                              | Coupling flange                                                            | ---                                                                                                                                                               | ---   | X    | X     | ---  | ---   | ---   | X     | ---       | ---       | X         | X         | ---        | X          | ---        | X          |
| 30                                                                                                                                                          | Montagering                                                                   | Mounting ring                                                              | ---                                                                                                                                                               | ---   | X    | X     | ---  | ---   | ---   | X     | ---       | ---       | X         | X         | ---        | X          | ---        | X          |
| 31                                                                                                                                                          | Schraube DIN 933 M6x20                                                        | Screw DIN 933 M6x20                                                        | ---                                                                                                                                                               | ---   | X    | X     | ---  | ---   | ---   | X     | ---       | ---       | X         | X         | ---        | X          | ---        | X          |
| 32                                                                                                                                                          | Unterlegscheibe DIN 125 A6,4                                                  | Washer DIN 125 A6,4                                                        | ---                                                                                                                                                               | ---   | X    | X     | ---  | ---   | ---   | X     | ---       | ---       | X         | X         | ---        | X          | ---        | X          |
| 33                                                                                                                                                          | Unterlegscheibe DIN 125 A5,3                                                  | Washer DIN 125 A5,3                                                        | ---                                                                                                                                                               | ---   | X    | X     | ---  | ---   | ---   | X     | ---       | ---       | X         | X         | ---        | X          | ---        | X          |
| 34                                                                                                                                                          | Schraube DIN 933 M5x20                                                        | Screw DIN 933 M5x20                                                        | ---                                                                                                                                                               | ---   | X    | X     |      |       | ---   | X     | ---       | ---       | X         | X         | ---        | X          | ---        | X          |
| X                                                                                                                                                           | Kompletter Pumpenkopf - diverse Kombinationsmöglichkeiten                     | Complete pump head - various combinations                                  | X                                                                                                                                                                 | X     | X    | X     | X    | X     | X     | X     | X         | X         | X         | X         | X          | X          | X          | X          |

**EG-/EU Konformitätserklärung**  
**EC/EU Declaration of Conformity**



Hiermit erklärt Bühler Technologies GmbH, dass  
die nachfolgenden Produkte den wesentlichen  
Anforderungen der Richtlinie

**2006/42/EG**  
**(MRL)**

in ihrer aktuellen Fassung entsprechen.

Die Produkte sind Maschinen nach Artikel 2 a).

*Herewith declares Bühler Technologies GmbH  
that the following products correspond to the  
essential requirements of Directive*

**2006/42/EC**  
**(MD)**

*in its actual version.*

*The products are machines according to article 2 (a).*

**Produkt / products:** Messgaspumpen / *Sample gas pumps*  
**Typ / type:** P 2.3, P 2.83, P 2.4, P 2.84, P 2.6

Das Betriebsmittel ist für den Einbau in Gasanalysesystemen bestimmt und für das Fördern von  
ausschließlich gasförmigen Medien vorgesehen.

*The equipment is designed for installation in gas analyser systems and is designed to transport only  
gaseous media*

Das oben beschriebene Produkt der Erklärung erfüllt die einschlägigen  
Harmonisierungsrechtsvorschriften der Union:

*The object of the declaration described above is in conformity with the relevant Union harmonisation  
legislation:*

**EN 809:1998+A1:2009 + AC:2010**

**EN 60204-1:2018**

Zusätzlich wurden berücksichtigt:  
*In addition, the following standards have been used:*  
**EN ISO 12100:2010**

Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.  
*This declaration of conformity is issued under the sole responsibility of the manufacturer.*

Dokumentationsverantwortlicher für diese Konformitätserklärung ist Herr Stefan Eschweiler mit  
Anschrift am Firmensitz.

*The person authorised to compile the technical file is Mr. Stefan Eschweiler located at the company's  
address.*

Ratingen, den 15.09.2022

Stefan Eschweiler  
Geschäftsführer – *Managing Director*

Frank Pospiech  
Geschäftsführer – *Managing Director*



# UK Declaration of Conformity



The manufacturer Bühler Technologies GmbH declares, under the sole responsibility, that the product complies with the requirements of the following UK legislation:

## **Machinery Safety Regulations 2008**

The following legislation were regarded:

## **Electrical Equipment Safety Regulations 2016**

## **Electromagnetic Compatibility Regulations 2016**

**Products:** Sample gas pumps

**Types:** P 2.3  
P 2.83  
P 2.4  
P 2.84  
P 2.6

The equipment is designed for installation in gas analyser systems and is designed to transport only gaseous media.

The object of the declaration described above is in conformity with the relevant designated standards:

**EN 809:1998+A1:2009 + AC:2010**

**EN 60204-1:2018**

In addition, the following standards have been used:

**EN ISO 12100:2010**

Ratingen in Germany, 01.11.2022

A handwritten signature in blue ink, appearing to read 'Stefan Eschweiler', written over a horizontal line.

Stefan Eschweiler  
Managing Director

A handwritten signature in blue ink, appearing to read 'Frank Pospiech', written over a horizontal line.

Frank Pospiech  
Managing Director



## Istruzioni di servizio

Prescrizioni sulla sicurezza uso e manutenzione del prodotto

Via Achille Grandi, 23 47030, San Mauro Pascoli (FC)

[www.orange1.eu](http://www.orange1.eu)

### Indicazioni sulle misure di sicurezza ed istruzioni per i motori trifase e i motori monofase

I simboli di seguito riportati servono da riferimento alle misure di sicurezza ed alle istruzioni supplementari contenute nelle presenti istruzioni di servizio.

Istruzioni speciali di sicurezza e garanzia

Pericolo



Attenersi strettamente alle misure di sicurezza ed alle istruzioni supplementari contenute nelle presenti istruzioni di servizio per la salvaguardia di persone e cose.



Le macchine elettriche rotanti presentano parti sotto tensione o in movimento e parti molto calde. Il trasporto, il collegamento per la messa in funzione e la manutenzione devono essere eseguiti da personale qualificato e responsabile (vedere IEC 364). Interventi inadeguati possono causare danni a persone e cose.

Tutti i lavori di collegamento devono essere eseguiti da personale qualificato.

### UTILIZZO PRESCRITTO E CONDIZIONI DI FUNZIONAMENTO

I motori a bassa tensione sono destinati a impianti industriali e sono conformi alle norme armonizzate EN 60034/IEC34. Se non espressamente previsto è vietato l'utilizzo in zone classificate per pericolo di esplosione ed incendio. I motori sono adatti a temperature ambiente che vanno da -20°C a +40°C ed a luoghi con altitudine fino a 1000 m. s.l.m.

Controllare attentamente i dati indicati sulla targa prima della messa in funzione del motore. I motori in bassa tensione sono considerati come componenti da installare in altre macchine ai sensi della Direttiva Comunitaria sulle macchine 2006/42/EC. La messa in funzione è proibita fino ad avvenuto accertamento della conformità finale a tale direttiva. Le macchine elettriche rotanti alimentate da rete sono conformi alle norme EN 50081 e EN 50082 riguardanti fenomeni di compatibilità elettromagnetica - Direttiva 2004/108/EC e non sono necessari particolari accorgimenti di schermatura. Nel caso di funzionamento intermittente, gli eventuali disturbi generati dai dispositivi di inserzione devono essere limitati mediante adeguati cablaggi.

I lavori sulla macchina elettrica devono avvenire a macchina ferma e scollegata dalla rete (compresi gli equipaggiamenti ausiliari). Se sono presenti protezioni elettriche, eliminare ogni possibilità di avviamento improvviso attenendosi alle specifiche raccomandazioni sull'impiego delle varie apparecchiature.

Nei motori monofase il condensatore può rimanere caricato tenendo temporaneamente in tensione i morsetti anche a motore fermo.

### TRASPORTO, IMMAGAZZINAMENTO

Al ricevimento della fornitura accertarsi che non sussistano danni imputabili al trasporto e nell'eventualità dare comunicazione immediata, contestandoli allo spedizioniere ed astenendosi dalla messa in funzione.

Quando sono forniti con il motore, serrare saldamente i golfari a vite; poiché essi servono per il sollevamento del solo motore, non si devono sollevare macchine o accessori aggiuntivi ad esso accoppiati. Se necessario, fare ricorso a mezzi di trasporto adeguati e sufficientemente dimensionati. Se sul motore sono presenti due golfari utilizzare sempre entrambi per il sollevamento. Se i motori vengono immagazzinati accertarsi che l'ambiente sia asciutto, senza polvere ed esente da vibrazioni (v eff. <0,2 mm/s) al fine di evitare danneggiamenti ai cuscinetti. Prima della messa in funzione misurare la resistenza di isolamento. Se si misurano valori di resistenza <1,5MΩ, essiccare l'avvolgimento. Per la procedura di essiccazione rivolgersi direttamente al nostro ufficio tecnico.

### INSTALLAZIONE



Tutte le operazioni di allacciamento elettrico devono essere eseguite da

personale qualificato con motore fermo disinserito e nell'impossibilità di essere riavviato.

Il rotore è equilibrato dinamicamente con mezza chiave. Gli organi di accoppiamento devono essere equilibrati con mezza chiave su mandrino liscio. Giunti e pulegge devono essere montati mediante apparecchiature apposite al fine di non danneggiare i cuscinetti del motore. Dopo il montaggio controllare che gli organi di accoppiamento siano ben fissi sull'estremità albero e spinti contro l'arresto. Se il mozzo dell'organo di accoppiamento fosse più corto dell'estremità d'albero la differenza dovrà essere compensata mediante bussola distanziatrice. Pulegge troppo piccole o troppo larghe compromettono il buon funzionamento dei cuscinetti.

I motori devono essere installati in posizione tale che l'aria di raffreddamento possa entrare ed uscire facilmente. La ventilazione non deve essere impedita e l'aria di scarico, anche di gruppi adiacenti, non deve essere riaspirata dalla ventola. Evitare di avere fonti di calore tali da influenzare la temperatura sia dell'aria sia del motore.

In caso di installazione all'aperto proteggere il motore con opportuni accorgimenti dall'irraggiamento solare e dalle intemperie, si consiglia di proteggere il motore con dispositivi salvamotore, limitatori elettronici di coppia qualora il motore non sia dotato di termistori.

Nel caso di ambienti con forti escursioni termiche ed ove si preveda la formazione di condensa, il motore deve essere dotato di apposite scaldiglie anticondensa, fuori di scolo sono da praticarsi nella posizione più idonea a seconda della posizione di installazione.

Nel caso di installazione di motori con flangia B14, assicurarsi che la lunghezza dei bulloni di fissaggio sia adeguata con il loro diametro e la profondità del foro: viti troppo lunghe possono causare danni all'avvolgimento del motore. Quando i fori sono forniti chiusi con viti e guarnizioni o-ring, ripristinare le guarnizioni in fase di accoppiamento.

Controllare il senso di rotazione a motore non accoppiato facendo attenzione di assicurare la linguetta al fine di evitarne un distacco violento durante la rotazione.

Se il senso di rotazione non è quello voluto, togliere tensione e quando il motore si sarà fermato:

nel caso di motore trifase scambiare tra loro due delle tre fasi

nel caso di motore monofase scambiare tra loro i cavi dell'avvolgimento ausiliario

L'allacciamento elettrico deve essere eseguito in modo sicuro e permanente: utilizzare adeguati capicorda.

Le parti metalliche del motore che normalmente non sono sotto tensione devono essere francamente collegate a terra mediante un cavo di sezione adeguata di colore giallo-verde, utilizzando l'apposito morsetto contrassegnato all'interno della scatola morsetteria.

Nella scatola morsetteria non devono essere presenti corpi estranei, sporcizia ed umidità. Chiudere gli imbocchi dei cavi qualora restino inutilizzati ed usare adeguati passacavi qualora non siano stati forniti con il motore. Controllare che il diametro del cavo sia compatibile con il pressacavo fornito ed utilizzato.

Richiudere sempre il coperchio della scatola morsetteria per non alterare il grado di protezione previsto.

### COLLEGAMENTO

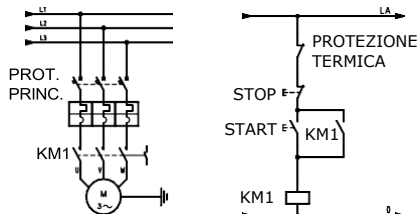
Il collegamento elettrico deve sempre essere eseguito da personale qualificato in accordo con le vigenti norme IEE, EN 60204 ed eventuali prescrizioni locali.

Fare sempre riferimento ai dati stampati sulla targa di tensione e frequenza per assicurarsi un corretto accoppiamento alla rete di alimentazione. Se non specificato si possono assumere tolleranze di ±5% sulla tensione e ±1% sulla frequenza indicati in targa.

I diagrammi di collegamento vengono normalmente forniti con il motore o sono stampati nella scatola morsetteria, qualora mancassero, fare riferimento a quelli forniti nel presente manuale.

Assicurarsi che, nel caso di avviamento stella/triangolo, il passaggio da stella a triangolo sia eseguito solo quando la corrente di avviamento sia diminuita al valore corrispondente a quello di stella: ciò è importante per evitare il rischio di sovraccarichi non ammessi.

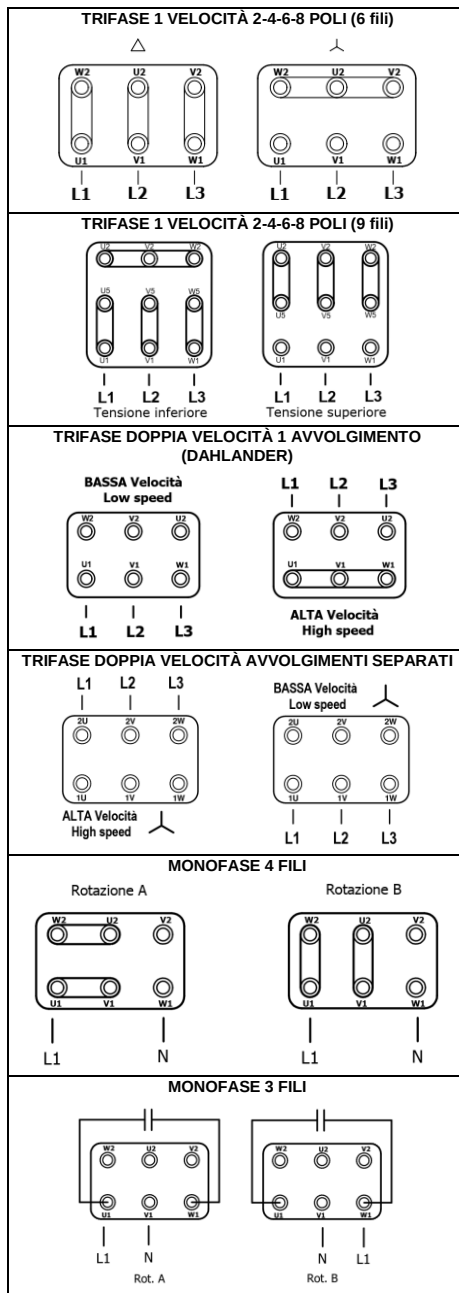
Nel caso in cui il motore sia provvisto di protettore termico, collegare i cavi del protettore ad un contatto ausiliario del contattore sulla linea di alimentazione.



### FUNZIONAMENTO:

Una volta avviato il motore a pieno carico controllare che parta e giri silenziosamente, e che non si verifichino vibrazioni eccessive o forti rumori anormali.

Per un primo esame di un eventuale anomalia fare riferimento alla tabella in calce.



### MANUTENZIONE:

All'occorrenza e periodicamente (in funzione dell'ambiente e del servizio) verificare e ripristinare se necessario:

- la pulizia del motore (assenza di oli, sporcizia, residui di lavorazione) ed il libero passaggio dell'aria di ventilazione
- il corretto serraggio delle connessioni elettriche, degli organi di accoppiamento e fissaggio meccanico del motore
- le condizioni delle tenute statiche e rotanti
- il livello di vibrazione del motore (v eff <3,5 mm/s per Pn<15KW v eff <4,5 mm/s per Pn>15KW) il livello di rumore e nel caso questo si presenti anormale verificare il fissaggio motore, l'equilibratura della macchina accoppiata o l'esigenza di sostituzione dei cuscinetti.

| ANOMALIA                                                                                    |                     |                            | Possibili cause                                | Rimedio                                |
|---------------------------------------------------------------------------------------------|---------------------|----------------------------|------------------------------------------------|----------------------------------------|
| Cuscinetto troppo caldo                                                                     | Cuscinetto rumoroso | Motore gira irregolarmente |                                                |                                        |
|                                                                                             |                     |                            | Cinghia troppo tesa                            | Diminuire la tensione della cinghia    |
|                                                                                             |                     |                            | Il giunto trasmette sforzi al motore           | Riallineare il motore o il giunto      |
|                                                                                             |                     |                            | Temperatura aria raffreddamento >40°C (104 °F) | Ristabilire temperatura raffreddamento |
|                                                                                             |                     |                            | Motore non montato correttamente               | Controllare la forma costruttiva       |
|                                                                                             |                     |                            | Sbilanciamento causato dalla puleggia o giunto | Controllare la bilanciatura            |
|                                                                                             |                     |                            | Fissaggio labile del motore                    | Controllare il fissaggio               |
| Se i rimedi sopra descritti non sono sufficienti, vi consigliamo di sostituire i cuscinetti |                     |                            |                                                |                                        |

| ANOMALIA  |              |                      |                       | Possibili cause                                              | Rimedio                                           |
|-----------|--------------|----------------------|-----------------------|--------------------------------------------------------------|---------------------------------------------------|
| Non parte | Troppo caldo | Diminuzione velocità | Intervento protezioni |                                                              |                                                   |
|           |              |                      |                       | Coppia resistente troppo alta                                | Controllare il motore e la coppia di carico       |
|           |              |                      |                       | Tensione alimentazione troppo bassa                          | Verificare rete di alimentazione                  |
|           |              |                      |                       | Interruzione di una fase                                     | Verificare rete di alimentazione                  |
|           |              |                      |                       | Errato collegamento                                          | Verificare con schema                             |
|           |              |                      |                       | Sovraccarico                                                 | Controllare dati di targa                         |
|           |              |                      |                       | Frequenza di inserzioni troppo elevata                       | Controllare il tipo di servizio indicato in targa |
|           |              |                      |                       | Ventilazione insufficiente                                   | Controllare i canali di ventilazione              |
|           |              |                      |                       | Corto circuito nell'avvolgimento o nella scatola morsetteria | Verificare resistenza isolamento                  |
|           |              |                      |                       | Eccessiva durata dell'avviamento                             | Verificare condizioni di avviamento               |



## Service instructions

### Safety prescriptions

#### Product use and maintenance

Via Achille Grandi, 23 47030, San Mauro Pascoli (FC)  
PROTEZIONE

### Indications on safety prescriptions and special instructions for three phase and single phase motors

These symbols will draw your attention to the safety measures and additional instructions given in these Operating Instructions.

Special instructions regarding safety and warning

For reasons of protection of persons and objects, follow the safety measures and additional instructions given in these Operating Instructions.

Electric rotating machines present dangers from live and rotating parts, and probably very hot surfaces. All work on them including transportation, connection, commissioning and maintenance must be by qualified and responsible specialists (IEC 364 must be observed). Inadequate work can lead to severe damage to persons and property.

All work on electrical connections to the motors must be performed only by qualified personnel.

### SPECIFIED USE AND WORKING CONDITIONS

These low voltage motors are only intended for use in industrial plants and are in accordance with the relevant sections of EN 60034/IEC34. Their use in hazardous areas is prohibited, unless explicitly indicated. The motors are suitable for ambient temperatures from -20°C (68°F) to +40°C (104°F) and altitudes <= 1000m above sea level.

It is imperative to observe the data printed on the nameplate before operating the motor. Low voltage motors are components to be installed into machines in accordance with Directive 2006/42/EC. Commissioning is not allowed until the conformity of the end product with this directive has been established. These asynchronous motors comply with EN 50081, and EN 50082 standards on electromagnetic compatibility for the EMC (2004/108/EC) Directive and no particular shielding is necessary when connected to a pure sinewave voltage supply.

Before working on the motor, ensure it has stopped and is disconnected from the power supply (including auxiliary equipment). If there is any form of automatic starting, automatic resetting, relays or remote starting, avoid any possibility of unexpected re-starting, paying attention to specific recommendations on equipment application.

In single phase motors, capacitors can remain temporarily charged resulting in live terminals even after the motor has stopped. Discharge all the capacitors and ground every terminal before touching any connection.

### TRANSPORT, STORAGE

On receipt verify that the motor has not been damaged during transport and in this case avoid any installation and communicate immediately to the transport service.

Eyebolts, when provided with the motor, must be tightened properly as they are suitable only for lifting the motor, no additional loads are allowed to be attached. If necessary use sufficiently dimensioned devices as a means of transport. Do not use any projection of the motor body to hang the motor for transport purposes. If two eyebolts are present on the motor use both for lifting. Store low voltage motors in a dry, dust free and low vibration (v eff <0,2 mm/s) area to prevent bearing damage. Before commissioning, the insulation resistance must be measured. In case of values < 1,5 MΩ the winding must be dried. Contact our technical department directly for information on the drying procedure.

### INSTALLATION

All work must only be done by qualified personnel with the low voltage motor and driven machine at standstill, electrically dead and locked against restart.

The rotor has been balanced dynamically with a half key fitted. The coupling components must also be balanced with a half key on a smooth mandrel. Coupling belts and pulleys must be assembled by suitable tools to protect the bearings.

After assembly check that the coupling components are well fixed on the shaft end; they must be properly pushed against the shaft shoulder. Where the hub of the coupling gear is shorter than the shaft end, compensate the difference by use of a bush spacer. Too large or too small pulleys can impair the shaft bearing life; similarly excessive belt tension can cause low bearing life or shaft breakage.

The motors must be installed in a proper position so that cooling air can go in and out easily. The ventilation must not be hindered and the outgoing air - also from adjacent units - must not be directly sucked in again.

Avoid heat sources near the motor that might affect the temperatures both of cooling air and of the motor.

In case of outdoor installation protect the motor from solar radiation and extremes of weather.

It is advisable to protect the motor with such as over-current devices and torque limiters where it is not protected by winding temperature transducers connected to appropriate switchgear.

In case of environments with wide thermal excursions and when can be preview the presence of moisture, the motor must be equipped with heaters. Drain holes must be positioned in places dependent on the installation configuration.

In case of installation of motors with face flange B14, make sure that the fixing screws are of a proper length compared to the tapped diameter: too long screws could damage the motor winding. In case of motor provided with screws and o-ring seals, such seals shall be replaced in the right position during the assembling.

Check the direction of rotation with the motor not coupled fastening the shaft key to avoid its violent ejection during rotation.

If the direction of rotation is not as desired, disconnect the motor and wait until the motor is completely stopped:

- in the case of three phase motors interchange two phases at the terminals
- in the case of single phase motors refer to the diagram supplied with the motor

Connection must be made in such a way that a durably safe, electrical connection is maintained: adequate cable and associated equipment must be used.

Metallic parts that are normally not energized must be connected to earth by means of green-yellow cable of a proper section using the earth terminal inside the terminal box.

The terminal box must be free of foreign bodies, dirt and humidity. Open cable gland holes must be sealed.

Use appropriate cable glands if these are not included with the motor. Check if the cable diameter is compatible with the cable gland installed.

Always close the terminal box cover in order not to invalidate the protection class of the motor.

### CONNECTION

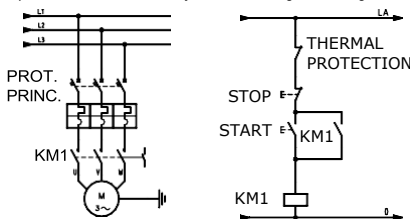
The electrical connection must be done by qualified personnel in accordance with appropriate regulations such as IEE, EN 60204 and local prescriptions.

Always refer to the data printed on the nameplate for voltage and frequency to ensure the motor is appropriate for the mains supply. If not specified it is possible to assume tolerances of ±5% on voltage and ±1% on frequency indicated on the nameplate.

The connection diagrams are normally supplied together with the motor or are printed in the terminal box. If they are missing please refer to this manual or contact directly to our technical office.

Check and make sure that, in the case of star/delta start, the switching from star to delta can only be executed after the starting current of the star step has fallen; this is important because of the risk of not permitted operational loads.

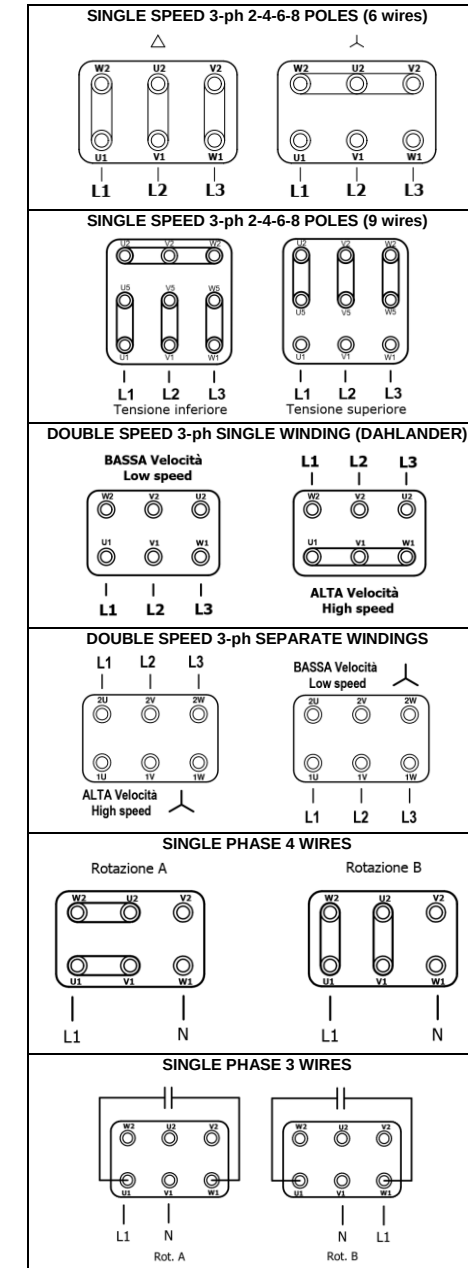
In case the motor is provided with thermal protector connect the thermal protector cables to a auxiliary contact following the drawing:



### OPERATION:

Once the motor is running at full load check if the motor starts freely and runs smoothly and ensure excessive vibrations and high noise are absent.

For a first check following a failure please refer to the table below.



### MAINTENANCE:

If necessary and periodically (depending on the environment and duty) verify and maintain as necessary to ensure:

- motor cleanliness (oil, dirt and machining residuals absence) and free passage of cooling air
- correct tightening of electrical connections, of fastening screws
- free motor running with low vibration (v eff <3,5mm/s for Pn<15KW v eff <4,5 mm/s for Pn>15KW) and
- absence of anomalous noises; where there is high vibration and/or noise verify the motor fastenings, machine balancing and that the bearings are in good condition.

| FAULT                                                                                     |               |                     | Possible causes                        | Remedy                            |
|-------------------------------------------------------------------------------------------|---------------|---------------------|----------------------------------------|-----------------------------------|
| Bearing too hot                                                                           | Bearing noise | Motor runs unevenly |                                        |                                   |
|                                                                                           |               |                     | Pulley tension too high                | Reduce pulley tension             |
|                                                                                           |               |                     | Coupling forces are pulling or pushing | Realign motor, correct coupling   |
|                                                                                           |               |                     | Coolant temperature above 40°C (104°F) | Adjust temperature of cooling air |
|                                                                                           |               |                     | Motor incorrectly mounted              | Correct the motor mounting        |
|                                                                                           |               |                     | Unbalance caused by pulley or coupling | Balance finely                    |
|                                                                                           |               |                     | Motor fastening insecure               | Improve fastening                 |
| If the remedies described here are insufficient, we recommend replacement of the bearings |               |                     |                                        |                                   |

| FAULT         |         |                 |                                 | Possible causes                            | Remedy                                         |
|---------------|---------|-----------------|---------------------------------|--------------------------------------------|------------------------------------------------|
| Doesn't start | Too hot | Speed reduction | Protective devices intervention |                                            |                                                |
|               |         |                 |                                 | Resisting torque is too high               | Reduce the load torque                         |
|               |         |                 |                                 | Mains voltage too low                      | Increase mains voltage                         |
|               |         |                 |                                 | Phase interruption                         | Check mains supply                             |
|               |         |                 |                                 | Wrong connection                           | Check with the wiring diagram                  |
|               |         |                 |                                 | Overload                                   | compare data on rating plate with measurements |
|               |         |                 |                                 | Switching frequency too high               | Observe rated duty type                        |
|               |         |                 |                                 | Insufficient ventilation                   | Check ventilation passages                     |
|               |         |                 |                                 | Short circuit of winding or terminal board | Measure insulation resistance                  |
|               |         |                 |                                 | Starting time exceeded                     | Reduce load torque/load inertia                |



# CERTIFICATE OF CONFORMITY



1. **ELECTRICAL EQUIPMENT PER US REQUIREMENTS**

2. **Certificate No:** FM21NUS0010

3. **Equipment:** Model P2.3, P2.4, P2.83, P2.84, P4.3 and P4.83 Sample Gas  
(Type Reference and Name) Pumps

4. **Name of Listing Company:** Bühler Technologies GmbH

5. **Address of Listing Company:** Harkortstrasse 29  
Ratingen  
D-40880  
Germany

6. The examination and test results are recorded in confidential report number:

3038101 dated 24<sup>th</sup> May 2010

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

FM Class 3810:2005

**Certificate issued by:**

J.E. Marquedant  
VP, Manager - Electrical Systems

2 December 2021

Date

To verify the availability of the Approved product, please refer to [www.approvalguide.com](http://www.approvalguide.com)

**THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE**

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA  
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: [information@fmapprovals.com](mailto:information@fmapprovals.com) [www.fmapprovals.com](http://www.fmapprovals.com)



# SCHEDULE



to US Certificate of Conformity No: FM21NUS0010

8. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.

9. **Equipment Ratings:**

The P2.3, P2.4, P2.83 and P2.84 pumps (models 4256\*\*\*\*\*9\*00, 4257\*\*\*\*\*9\*00, 4263\*\*\*\*\*9\*00 and 4264\*\*\*\*\*9\*00) operate at 115 Vac, at a current of 1.5 to 1.6 A, or 2.3 to 2.78 A, depending upon motor utilized. The P4.3 and P4.83 pumps (models 4280\*\*\*\*\*9\*00 and 4281\*\*\*\*\*9\*00) operate at 115 Vac, at a current of 2.55 to 2.8 A, or 2.8 to 3.4 A, depending upon motor utilized. The pumps are rated for an ambient temperature range of -20°C to +60°C.

10. **Description of Equipment:**

**General** – The sample pumps move sample gases from stacks to an analyzer. A sample pump consists of a motor and a pump head, which can be split by an intermediate flange with variable versions.

**Construction** – The sample pumps are of painted metal construction. The motors for the pumps provide a terminal box fitted with an M16x1.5 cable gland suitable for use with a 6 to 10 mm diameter cable.

**Model types** – Approved model number variants are as defined below.

**42aabcdef9g00. Sample Gas Pumps, where:**

aa = Base model: 56, 57, 63, 64, 80, 81

(where 56 = P2.3, 57 = P2.4, 63 = P2.83, 64 = P2.84, 80 = P4.3, 81 = P4.83)

b = Motor voltage: 2

c = Pump head position: 1, 2

d = Pump head material: 1, 2, 3, 4

e = Valve material: 1, 2

f = Screw-in connections: 9, 1, 2, 3, 5

g = Connection kit for parallel operation: 0, 1, 2

11. **Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

12. **Schedule Drawings**

A copy of the technical documentation has been kept by FM Approvals.

13. **Certificate History**

Details of the supplements to this certificate are described below:

**THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE**

# **SCHEDULE**



to US Certificate of Conformity No: FM21NUS0010

| Date                            | Description                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 24 <sup>th</sup> May 2010       | Original Issue.                                                                                                                                                                                                                                                                                                                                                                                                                |
| 24 <sup>th</sup> July 2012      | <u>Supplement 1:</u><br>Report Reference: 120709 dated 24 <sup>th</sup> July 2012.<br>Description of the Change: Create separate certificate for ordinary location certificate. Refer to FM21US0082X certificate history for changes to hazardous location pump variants under revision 120709.                                                                                                                                |
| 24 <sup>th</sup> September 2021 | <u>Supplement 2:</u><br>Report Reference: RR228650 dated 24 <sup>th</sup> September 2021.<br>Description of the Change: Re-create certificate in new format. Reformat model number scheme in Certificate and Approval Guide listing. Remove erroneous references to FM Class 3600 and FM Class 3611 from certificate. Refer to FM21US0082X certificate history for changes to hazardous location pump variants under RR228650. |
| 2 <sup>nd</sup> December 2021   | <u>Supplement 3:</u><br>Report Reference: RR230190 dated 2 <sup>nd</sup> December 2021.<br>Description of the Change: Addition of alternate motor supplier/type, impacting equipment ratings field of certificate.                                                                                                                                                                                                             |

**THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE**

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T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: [information@fmaprovals.com](mailto:information@fmaprovals.com) [www.fmaprovals.com](http://www.fmaprovals.com)



# CERTIFICATE OF CONFORMITY



1. **ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS**
2. **Certificate No:** FM21NCA0007
3. **Equipment:** Model P2.3, P2.4, P2.83, P2.84, P4.3 and P4.83 Sample Gas  
**(Type Reference and Name)** Pumps
4. **Name of Listing Company:** Bühler Technologies GmbH
5. **Address of Listing Company:** Harkortstrasse 29  
Ratingen  
D-40880  
Germany
6. The examination and test results are recorded in confidential report number:  
3038101C\_Rev120709 dated 24<sup>th</sup> July 2012
7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:  
CAN/CSA-C22.2 No. 61010-1:R2009
8. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.

## Certificate issued by:

J.E. Marquedant  
VP, Manager - Electrical Systems

2 December 2021  
Date

To verify the availability of the Approved product, please refer to [www.approvalguide.com](http://www.approvalguide.com)

**THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE**

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA  
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: [information@fmaprovals.com](mailto:information@fmaprovals.com) [www.fmaprovals.com](http://www.fmaprovals.com)



# SCHEDULE



to Canadian Certificate of Conformity No: FM21NCA0007

## 9. Equipment Ratings:

The P2.3, P2.4, P2.83 and P2.84 pumps (models 4256\*\*\*\*9\*00, 4257\*\*\*\*9\*00, 4263\*\*\*\*9\*00 and 4264\*\*\*\*9\*00) operate at 115 Vac, at a current of 1.5 to 1.6 A, or 2.3 to 2.78 A, depending upon motor utilized. The P4.3 and P4.83 pumps (models 4280\*\*\*\*9\*00 and 4281\*\*\*\*9\*00) operate at 115 Vac, at a current of 2.55 to 2.8 A, or 2.8 to 3.4 A, depending upon motor utilized. The pumps are rated for an ambient temperature range of -20°C to +60°C.

## 10. Description of Equipment:

**General** – The sample pumps move sample gases from stacks to an analyzer. A sample pump consists of a motor and a pump head, which can be split by an intermediate flange with variable versions.

**Construction** – The sample pumps are of painted metal construction. The motors for the pumps provide a terminal box fitted with an M16x1.5 cable gland suitable for use with a 6 to 10 mm diameter cable.

**Model types** – Approved model number variants are as defined below.

### 42aabcdef9g00. Sample Gas Pumps, where:

aa = Base model: 56, 57, 63, 64, 80, 81

(where 56 = P2.3, 57 = P2.4, 63 = P2.83, 64 = P2.84, 80 = P4.3, 81 = P4.83)

b = Motor voltage: 2

c = Pump head position: 1, 2

d = Pump head material: 1, 2, 3, 4

e = Valve material: 1, 2

f = Screw-in connections: 9, 1, 2, 3, 5

g = Connection kit for parallel operation: 0, 1, 2

## 11. Test and Assessment Procedure and Conditions:

This Certificate has been issued in accordance with FM Approvals Canadian Certification Requirements.

## 12. Schedule Drawings

A copy of the technical documentation has been kept by FM Approvals.

## 13. Certificate History

Details of the supplements to this certificate are described below:

| Date                       | Description     |
|----------------------------|-----------------|
| 24 <sup>th</sup> July 2012 | Original Issue. |

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# **SCHEDULE**



to Canadian Certificate of Conformity No: FM21NCA0007

| Date                            | Description                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 24 <sup>th</sup> September 2021 | <u>Supplement 1:</u><br>Report Reference: RR228650 dated 24 <sup>th</sup> September 2021.<br>Description of the Change: Re-create certificate in new format. Reformat model number scheme in Certificate and Approval Guide listing. Refer to FM21CA0055X certificate history for changes to hazardous location pump variants under RR228650. |
| 2 <sup>nd</sup> December 2021   | <u>Supplement 2:</u><br>Report Reference: RR230190 dated 2 <sup>nd</sup> December 2021.<br>Description of the Change: Addition of alternate motor supplier/type, impacting equipment ratings field of certificate.                                                                                                                            |

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# RMA-Formular und Erklärung über Dekontaminierung

## Formulaire RMA et déclaration de décontamination



RMA-Nr./ Numéro de renvoi

Die RMA-Nr. bekommen Sie von Ihrem Ansprechpartner im Vertrieb oder Service. Bei Rücksendung eines Altgeräts zur Entsorgung tragen Sie bitte in das Feld der RMA-Nr. "WEEE" ein./ Le numéro d'autorisation de retour (RMA) est mis à votre disposition par votre interlocuteur à la vente ou au service. Lors du renvoi d'un appareil usagée en vue de sa mise au rebut, veuillez saisir "WEEE" dans le champ du n° RMA.

Zu diesem Rücksendeschein gehört eine Dekontaminierungserklärung. Die gesetzlichen Vorschriften schreiben vor, dass Sie uns diese Dekontaminierungserklärung ausgefüllt und unterschrieben zurücksenden müssen. Bitte füllen Sie auch diese im Sinne der Gesundheit unserer Mitarbeiter vollständig aus./ Une déclaration de décontamination fait partie intégrante de ce bulletin de retour. Les prescriptions légales vous obligent à nous renvoyer cette déclaration de décontamination remplie et signée. Veuillez la remplir également complètement au sens de la santé de nos employés.

Firma/ Société

Firma/ Société

Straße/ Rue

PLZ, Ort/ CP, localité

Land/ Pays

Gerät/ Appareil

Anzahl/ Nombre

Auftragsnr./ Numéro de commande

Ansprechpartner/ Interlocuteur

Name/ Nom

Abt./ Dépt.

Tel./ Tél.

E-Mail

Serien-Nr./ N° de série

Artikel-Nr./ N° d'article

Grund der Rücksendung/ Motif du retour

- ☐ Kalibrierung/ Calibrage ☐ Modifikation/ Modification  
☐ Reklamation/ Réclamation ☐ Reparatur/ Réparation  
☐ Elektroaltgerät/ Appareil électrique usagé (WEEE)  
☐ andere/ autre

bitte spezifizieren/ veuillez spécifier

Ist das Gerät möglicherweise kontaminiert?/ L'appareil a-t-il été utilisé ?

- ☐ Nein, da das Gerät nicht mit gesundheitsschädlichen Stoffen betrieben wurde./ Non, car l'appareil n'a pas été utilisé avec des substances dangereuses pour la santé.  
☐ Nein, da das Gerät ordnungsgemäß gereinigt und dekontaminiert wurde./ Non, car l'appareil a été nettoyé et décontaminé en bonne et due forme.  
☐ Ja, kontaminiert mit:/ Oui, contaminé avec:



☐  
explosiv/  
explosif



☐  
entzündlich/  
inflammable



☐  
brandfördernd/  
comburant



☐  
komprimierte  
Gase/  
gaz comprimés



☐  
ätzend/  
corrosif



☐  
giftig,  
Lebensgefahr/  
toxique, danger  
de mort



☐  
gesundheitsge-  
fährdend/  
dangereux pour  
la santé



☐  
gesund-  
heitsschädlich/  
nocif pour la  
santé



☐  
umweltge-  
fährdend/  
dangereux pour  
l'environnement

Bitte Sicherheitsdatenblatt beilegen!./ Merci de joindre la fiche technique de sécurité

Das Gerät wurde gespült mit:/ L'appareil a été rincé avec:

Diese Erklärung wurde korrekt und vollständig ausgefüllt und von einer dazu befugten Person unterschrieben. Der Versand der (dekontaminierten) Geräte und Komponenten erfolgt gemäß den gesetzlichen Bestimmungen.

Falls die Ware nicht gereinigt, also kontaminiert bei uns eintrifft, muss die Firma Bühler sich vorbehalten, diese durch einen externen Dienstleister reinigen zu lassen und Ihnen dies in Rechnung zu stellen.

Firmenstempel/ Cachet de l'entreprise

Cette déclaration a été correctement complétée et signée par une personne autorisée. L'envoi des appareils et composants (décontaminés) se fait selon les conditions légales.

Si la marchandise nous est retournée sans avoir été nettoyée, donc toujours contaminée, la société Bühler se réserve le droit de faire nettoyer le produit par un prestataire externe et de vous envoyer la facture correspondante.

Datum/ Date

rechtsverbindliche Unterschrift/ Signature autorisée



### Vermeiden von Veränderung und Beschädigung der einzusendenden Baugruppe

Die Analyse defekter Baugruppen ist ein wesentlicher Bestandteil der Qualitätssicherung der Firma Bühler Technologies GmbH. Um eine aussagekräftige Analyse zu gewährleisten muss die Ware möglichst unverändert untersucht werden. Es dürfen keine Veränderungen oder weitere Beschädigungen auftreten, die Ursachen verdecken oder eine Analyse unmöglich machen.

### Umgang mit elektrostatisch sensiblen Baugruppen

Bei elektronischen Baugruppen kann es sich um elektrostatisch sensible Baugruppen handeln. Es ist darauf zu achten, diese Baugruppen ESD-gerecht zu behandeln. Nach Möglichkeit sollten die Baugruppen an einem ESD-gerechten Arbeitsplatz getauscht werden. Ist dies nicht möglich sollten ESD-gerechte Maßnahmen beim Austausch getroffen werden. Der Transport darf nur in ESD-gerechten Behältnissen durchgeführt werden. Die Verpackung der Baugruppen muss ESD-konform sein. Verwenden Sie nach Möglichkeit die Verpackung des Ersatzteils oder wählen Sie selber eine ESD-gerechte Verpackung.

### Einbau von Ersatzteilen

Beachten Sie beim Einbau des Ersatzteils die gleichen Vorgaben wie oben beschrieben. Achten Sie auf die ordnungsgemäße Montage des Bauteils und aller Komponenten. Versetzen Sie vor der Inbetriebnahme die Verkabelung wieder in den ursprünglichen Zustand. Fragen Sie im Zweifel beim Hersteller nach weiteren Informationen.

### Einsenden von Elektroaltgeräten zur Entsorgung

Wollen Sie ein von Bühler Technologies GmbH stammendes Elektroprodukt zur fachgerechten Entsorgung einsenden, dann tragen Sie bitte in das Feld der RMA-Nr. „WEEE“ ein. Legen Sie dem Altgerät die vollständig ausgefüllte Dekontaminierungserklärung für den Transport von außen sichtbar bei. Weitere Informationen zur Entsorgung von Elektroaltgeräten finden Sie auf der Webseite unseres Unternehmens.

### Éviter la modification et la détérioration du module à expédier

L'analyse d'unités défectueuses est un élément essentiel de l'Assurance Qualité de la société Bühler Technologies GmbH. Pour garantir une analyse pertinente, la marchandise doit être si possible contrôlée en l'état. Aucune modification ne doit être réalisée ni autre dommage se produire car les causes pourraient alors être masquées ou toute analyse serait rendue impossible.

### Manipulation des modules à sensibilité électrostatique

Dans le cas d'unités électroniques, il peut s'agir de composants sensibles aux charges électrostatiques. Les composants doivent être traités en respectant les directives en matière de décharges électrostatiques. Selon le cas, les composants devraient être remplacés à un poste de travail ESD. Si cela n'est pas possible, des mesures respectant les directives en matière de décharges électrostatiques devraient être prises lors du remplacement. Le transport ne doit être réalisé que dans des conditions respectant les directives en matière de décharges électrostatiques. Les emballages des composants doivent être en conformité avec les directives en matière de décharges électrostatiques. Utilisez selon le cas l'emballage de pièces de rechange ou choisissez vous-même un emballage en conformité avec les directives en matière de décharges électrostatiques.

### Montage de pièces de rechange

Veillez lors de l'insertion d'une pièce de rechange à ce que les conditions décrites ci-dessus soient respectées. Veillez à ce que le montage du produit et de tous les composants soit fait de manière appropriée. Remettez tous les câbles dans leur état d'origine avant la mise en service du produit. En cas de doute, adressez-vous au fabricant du produit pour avoir plus d'informations.

### Renvoi d'appareils électriques usagés en vue de leur mise au rebut

Si vous souhaitez expédier un produit électrique manufacturé par Bühler Technologies GmbH en vue de sa mise au rebut correcte, veuillez saisir "WEEE" dans le champ du n° RMA. Pour le transport, joignez à l'appareil usagé la déclaration de décontamination entièrement remplie et bien visible de l'extérieur. Vous trouverez davantage d'informations concernant la mise au rebut des appareils électriques usagés sur le site Internet de notre entreprise.

