

| Modul                     | Klemme                   | Bez.      | Adresse                  | Funktion  | Modul                    | Klemme     | Bez.    | Adresse | Funktion                                   | Modul                     | Klemme     | Bez. | Adresse | Funktion                            |
|---------------------------|--------------------------|-----------|--------------------------|---|--------------------------|------------|---------|---------|--|---------------------------|------------|------|---------|-------------------------------------|
| X20T6402 (6x Thermomodul) | - 112KF 11               |           |                          |   | X20D6371 (6x Digital IN) | - 113KF 16 |         |         |  | X20D6332 (6x Digital OUT) | - 114KF 24 |      |         |                                     |
|                           | 11                       | TC1+      |                          | Temperatur 1  |                          | 11         | DI 1    |         | Z-Achse Endlage (-) unten                  |                           | 11         | DO 1 |         | Türzuhaltung Entriegeln             |
|                           | 12                       | TC1-      |                          |   |                          | 21         | DI 2    |         | Z-Achse Endlage (+) oben                   |                           | 21         | DO 2 |         | Ampel ROT                           |
|                           | 21                       | TC2+      |                          | Temperatur 2  |                          | 22         | DI 3    |         | Beschlichter Endlage (-)                   |                           | 12         | DO 3 |         | Ampel GELB                          |
|                           | 22                       | TC2-      |                          | "   |                          | 22         | DI 4    |         | Beschlichter Endlage (+)                   |                           | 22         | DO 4 |         | Ampel GRÜN                          |
|                           | 13                       | TC3+      |                          | Temperatur 3  |                          | 13         | DI 5    |         | Beschlichter Ref. (Home)                   |                           | 13         | DO 5 |         | Signal an SP-ICE3 (nicht verwendet) |
|                           | 14                       | TC3-      |                          | "   |                          | 23         | DI 6    |         | Beschlichter Ref. (max.)                   |                           | 23         | DO 6 |         | O <sub>2</sub> -Messbereich         |
|                           | 23                       | TC4+      |                          | Temperatur 4  |                          | 14         | +24V DC |         |  |                           | 14         | GND  |         |                                     |
|                           | 24                       | TC4-      |                          | "   |                          | 24         | +24V DC |         |  |                           | 24         | GND  |         |                                     |
|                           | 15                       | TC5+      |                          | Temperatur 5  |                          | 15         | +24V DC |         |  |                           | 15         | GND  |         |                                     |
| 16                        | TC5-                     |           | "                        | 25  | +24V DC                  |            |         | 25      | GND  |                           |            |      |         |                                     |
| 25                        | TC6+                     |           | Temperatur 6             | 16  | +24V DC                  |            |         | 16      | GND  |                           |            |      |         |                                     |
| 26                        | TC6-                     |           | "                        | 26  | +24V DC                  |            |         | 26      | GND  |                           |            |      |         |                                     |
| X20A4622 (4x Analog OUT)  | - 112KF 12               |           |                          |   | X20D6371 (6x Digital IN) | - 113KF 17 |         |         |  | X20D6332 (6x Digital OUT) | - 114KF 25 |      |         |                                     |
|                           | 11                       | AO1 I+    |                          |   |                          | 11         | DI 1    |         | Meldung Ventil Schutzgas Kammer AUF        |                           | 11         | DO 1 |         | Ventil Schutzgas Kammer             |
|                           | 12                       | AO1 U+    |                          | Umwälzpumpe Gasführung SOLL 0-100% (0-10V)              |                          | 21         | DI 2    |         | Meldung Ventil Schutzgas Kammer ZU         |                           | 21         | DO 2 |         | Ventil Schutzgas Wärmetauscher      |
|                           | 13                       | AO1 I-/U- |                          |   |                          | 12         | DI 3    |         | Meldung Ventil Schutzgas Wärmetauscher AUF |                           | 12         | DO 3 |         | Ventil Schutzgas Hauptventil        |
|                           | 21                       | AO2 I+    |                          | Analogausgang 2 (0/4-20mA)                              |                          | 22         | DI 4    |         | Meldung Ventil Schutzgas Wärmetauscher ZU  |                           | 22         | DO 4 |         | Ventil Vakuum Kammer                |
|                           | 22                       | AO2 U+    |                          | Analogausgang 2 (0-10V)                                 |                          | 13         | DI 5    |         | Reserve                                    |                           | 13         | DO 5 |         | Ventil Vakuumk Z-Achse              |
|                           | 23                       | AO2 I-/U- |                          |   |                          | 23         | DI 6    |         |  |                           | 23         | DO 6 |         | Reserve Gasführung Ventil 6         |
|                           | 14                       | AO3 I+    |                          |   |                          | 14         | +24V DC |         |  |                           | 14         | GND  |         |                                     |
|                           | 15                       | AO3 U+    |                          |   |                          | 24         | +24V DC |         |  |                           | 24         | GND  |         |                                     |
|                           | 16                       | AO3 I-/U- |                          |   |                          | 15         | +24V DC |         |  |                           | 15         | GND  |         |                                     |
| 24                        | AO4 I+                   |           |                          | 25  | +24V DC                  |            |         | 25      | GND  |                           |            |      |         |                                     |
| 25                        | AO4 U+                   |           |                          | 16  | +24V DC                  |            |         | 16      | GND  |                           |            |      |         |                                     |
| 26                        | AO4 I-/U-                |           |                          | 26  | +24V DC                  |            |         | 26      | GND  |                           |            |      |         |                                     |
| X20A4622 (4x Analog OUT)  | - 112KF 13               |           |                          |   | X20D6371 (6x Digital IN) | - 113KF 18 |         |         |  | X20D6332 (6x Digital OUT) | - 114KF 26 |      |         |                                     |
|                           | 11                       | AO1 I+    |                          | Analogausgang 1 (0/4-20mA)                              |                          | 11         | DI 1    |         | Signal von SP-ICE3 (nicht verwendet)       |                           | 11         | DO 1 |         | Reserve Gasführung Ventil 7         |
|                           | 12                       | AO1 U+    |                          | Analogausgang 1 (0-10V)                                 |                          | 21         | DI 2    |         | Umwälzpumpe Gasführung FU Betrieb          |                           | 21         | DO 2 |         | Reserve Gasführung Ventil 8         |
|                           | 13                       | AO1 I-/U- |                          |   |                          | 12         | DI 3    |         | Umwälzpumpe Gasführung FU Fehler           |                           | 12         | DO 3 |         | Reserve Gasführung Ventil 9         |
|                           | 21                       | AO2 I+    |                          | Analogausgang 2 (0/4-20mA)                              |                          | 22         | DI 4    |         | Vakuumpumpe Betrieb                        |                           | 22         | DO 4 |         | Reserve Gasführung Ventil 10        |
|                           | 22                       | AO2 U+    |                          | Analogausgang 2 (0-10V)                                 |                          | 13         | DI 5    |         | Vakuumpumpe Störung                        |                           | 13         | DO 5 |         | Reserve Gasführung Ventil 11        |
|                           | 23                       | AO2 I-/U- |                          |   |                          | 23         | DI 6    |         | Bauplattformheizung Störung                |                           | 23         | DO 6 |         | Reserve Gasführung Ventil 12        |
|                           | 14                       | AO3 I+    |                          |   |                          | 14         | +24V DC |         |  |                           | 14         | GND  |         |                                     |
|                           | 15                       | AO3 U+    |                          |   |                          | 24         | +24V DC |         |  |                           | 24         | GND  |         |                                     |
|                           | 16                       | AO3 I-/U- |                          |   |                          | 15         | +24V DC |         |  |                           | 15         | GND  |         |                                     |
| 24                        | AO4 I+                   |           |                          | 25  | +24V DC                  |            |         | 25      | GND  |                           |            |      |         |                                     |
| 25                        | AO4 U+                   |           |                          | 16  | +24V DC                  |            |         | 16      | GND  |                           |            |      |         |                                     |
| 26                        | AO4 I-/U-                |           |                          | 26  | +24V DC                  |            |         | 26      | GND  |                           |            |      |         |                                     |
| X20A4622 (4x Analog IN)   | - 112KF 14               |           |                          |   | X20D6371 (6x Digital IN) | - 113KF 19 |         |         |  | X20D6332 (6x Digital OUT) | - 114KF 27 |      |         |                                     |
|                           | 11                       | AI1 I+    |                          | O <sup>2</sup> Messung Filter (4-20mA)                  |                          | 11         | DI 1    |         | Vakuummessung Grenzwert                    |                           | 11         | DO 1 |         | Reserve Gasführung Ventil 13        |
|                           | 12                       | AI1 U+    |                          | "   |                          | 21         | DI 2    |         | Vakuummessung Störung                      |                           | 21         | DO 2 |         | Reserve Gasführung Ventil 14        |
|                           | 13                       | AI1 I-/U- |                          | "   |                          | 12         | DI 3    |         | Fremdlüfter Umwälzpumpe Störung            |                           | 12         | DO 3 |         | Reserve Gasführung Ventil 15        |
|                           | 21                       | AI2 I+    |                          | O <sup>2</sup> Messung Bauraum (4-20mA)                 |                          | 22         | DI 4    |         | Reserve                                    |                           | 22         | DO 4 |         | Reserve Gasführung Ventil 16        |
|                           | 22                       | AI2 U+    |                          | "   |                          | 13         | DI 5    |         | "  |                           | 13         | DO 5 |         | Reserve Gasführung Ventil 17        |
|                           | 23                       | AI2 I-/U- |                          | "   |                          | 23         | DI 6    |         | "  |                           | 23         | DO 6 |         | Reserve Gasführung Ventil 18        |
|                           | 14                       | AI3 I+    |                          | Druck Druckluft (4-20mA)                                |                          | 14         | +24V DC |         |  |                           | 14         | GND  |         |                                     |
|                           | 15                       | AI3 U+    |                          | "   |                          | 24         | +24V DC |         |  |                           | 24         | GND  |         |                                     |
|                           | 16                       | AI3 I-/U- |                          | "   |                          | 15         | +24V DC |         |  |                           | 15         | GND  |         |                                     |
| 24                        | AI4 I+                   |           | Druck Schutzgas (4-20mA) | 25  | +24V DC                  |            |         | 25      | GND  |                           |            |      |         |                                     |
| 25                        | AI4 U+                   |           | "                        | 16  | +24V DC                  |            |         | 16      | GND  |                           |            |      |         |                                     |
| 26                        | AI4 I-/U-                |           | "                        | 26  | +24V DC                  |            |         | 26      | GND  |                           |            |      |         |                                     |
| X20A4622 (4x Analog IN)   | - 112KF 15               |           |                          |   | X20D6371 (6x Digital IN) | - 113KF 20 |         |         |  | X20D6332 (6x Digital OUT) | - 114KF 28 |      |         |                                     |
|                           | 11                       | AI1 I+    |                          | Vakuum Istwert 0-10V                                    |                          | 11         | DI 1    |         | Taster Tür Kammer Entriegeln               |                           | 11         | DO 1 |         | Umwälzpumpe Gasführung              |
|                           | 12                       | AI1 U+    |                          | "   |                          | 21         | DI 2    |         | Reserve                                    |                           | 21         | DO 2 |         | Vakuumpumpe                         |
|                           | 13                       | AI1 I-/U- |                          | "   |                          | 12         | DI 3    |         | "  |                           | 12         | DO 3 |         | Bauplattform Heizung                |
|                           | 21                       | AI2 I+    |                          | "   |                          | 22         | DI 4    |         | "  |                           | 22         | DO 4 |         | Lozer Extern (nicht verwendet)      |
|                           | 22                       | AI2 U+    |                          | Temperatur Bauplattform (Heizung) (0-200°C / 0 ... 10V) |                          | 13         | DI 5    |         | "  |                           | 13         | DO 5 |         | Lozer System ON (nicht verwendet)   |
|                           | 23                       | AI2 I-/U- |                          | "   |                          | 23         | DI 6    |         | "  |                           | 23         | DO 6 |         | Reserve                             |
|                           | 14                       | AI3 I+    |                          | "   |                          | 14         | +24V DC |         |  |                           | 14         | GND  |         |                                     |
|                           | 15                       | AI3 U+    |                          | "   |                          | 24         | +24V DC |         |  |                           | 24         | GND  |         |                                     |
|                           | 16                       | AI3 I-/U- |                          | "   |                          | 15         | +24V DC |         |  |                           | 15         | GND  |         |                                     |
| 24                        | AI4 I+                   |           | "                        | 25  | +24V DC                  |            |         | 25      | GND  |                           |            |      |         |                                     |
| 25                        | AI4 U+                   |           | "                        | 16  | +24V DC                  |            |         | 16      | GND  |                           |            |      |         |                                     |
| 26                        | AI4 I-/U-                |           | "                        | 26  | +24V DC                  |            |         | 26      | GND  |                           |            |      |         |                                     |
| X20S1110 (6x Safety IN)   | - 115KF 51               |           |                          |   | X20D6371 (6x Digital IN) | - 113KF 21 |         |         |  | X20D6332 (6x Digital OUT) | - 114KF 29 |      |         |                                     |
|                           | 11                       | Pulse 1   |                          | Si 1 Not-Halt Kanal 1                                   |                          | 11         | DI 1    |         | Meldung Vakuumventil Kammer AUF            |                           | 11         | DO 1 |         | Reserve                             |
|                           | 12                       | Si 1      |                          | Not-Halt Kanal 1  |                          | 21         | DI 2    |         | Meldung Vakuumventil Kammer ZU             |                           | 21         | DO 2 |         | "                                   |
|                           | 21                       | Pulse 2   |                          | Si 2 Not-Halt Kanal 2                                   |                          | 12         | DI 3    |         | Meldung Vakuumventil Z-Achse AUF           |                           | 12         | DO 3 |         | "                                   |
|                           | 22                       | Si 2      |                          | Not-Halt Kanal 2  |                          | 22         | DI 4    |         | Meldung Vakuumventil Z-Achse ZU            |                           | 22         | DO 4 |         | "                                   |
|                           | 13                       | Pulse 3   |                          | Si 3 Schutztüre Prozesskammer Kanal 1                   |                          | 13         | DI 5    |         | Reserve                                    |                           | 13         | DO 5 |         | "                                   |
|                           | 14                       | Si 3      |                          | Schutztüre Prozesskammer Kanal 1                        |                          | 23         | DI 6    |         | "  |                           | 23         | DO 6 |         | "                                   |
|                           | 23                       | Pulse 4   |                          | Si 4 Schutztüre Prozesskammer Kanal 2                   |                          | 14         | +24V DC |         |  |                           | 14         | GND  |         |                                     |
|                           | 24                       | Si 4      |                          | Rückführung Not-Halt Schütze                            |                          | 24         | +24V DC |         |  |                           | 24         | GND  |         |                                     |
|                           | 15                       | Si 5      |                          | Rückführung Bedienschut Schütze                         |                          | 15         | +24V DC |         |  |                           | 15         | GND  |         |                                     |
| 25                        | Si 6                     |           | Not-Halt von Laser Ch1   | 25  | +24V DC                  |            |         | 25      | GND  |                           |            |      |         |                                     |
| 16                        | Si 7                     |           | Not-Halt von Laser Ch2   | 16  | +24V DC                  |            |         | 16      | GND  |                           |            |      |         |                                     |
| 26                        | Si 8                     |           | Not-Halt von Laser Ch2   | 26  | +24V DC                  |            |         | 26      | GND  |                           |            |      |         |                                     |
| X20S63300 (6x Safety OUT) | - 115KF 52               |           |                          |   | X20D6371 (6x Digital IN) | - 113KF 22 |         |         |  | X20D6332 (6x Digital OUT) | - 114KF 30 |      |         |                                     |
|                           | 11                       | SO 1      |                          | Not-Halt Schütze  |                          | 11         | DI 1    |         | Reserve                                    |                           | 11         | DO 1 |         | Reserve                             |
|                           | 21                       | SO 2      |                          | Bedienschut Schütze                                     |                          | 21         | DI 2    |         | "  |                           | 21         | DO 2 |         | "                                   |
|                           | 12                       | SO 3      |                          | Enable Achse 1&2  |                          | 12         | DI 3    |         | "  |                           | 12         | DO 3 |         | "                                   |
|                           | 22                       | SO 4      |                          | Enable Achse 3&4  |                          | 22         | DI 4    |         | "  |                           | 22         | DO 4 |         | "                                   |
|                           | 13                       | SO 5      |                          | Reserve   |                          | 13         | DI 5    |         | "  |                           | 13         | DO 5 |         | "                                   |
|                           | 23                       | SO 6      |                          | Reserve   |                          | 23         | DI 6    |         | "  |                           | 23         | DO 6 |         | "                                   |
|                           | 14                       | GND       |                          |   |                          | 14         | +24V DC |         |  |                           | 14         | GND  |         |                                     |
|                           | 24                       | GND       |                          |   |                          | 24         | +24V DC |         |  |                           | 24         | GND  |         |                                     |
|                           | 15                       | GND       |                          |   |                          | 15         | +24V DC |         |  |                           | 15         | GND  |         |                                     |
| 25                        | GND                      |           |                          | 25  | +24V DC                  |            |         | 25      | GND  |                           |            |      |         |                                     |
| 16                        | GND                      |           |                          | 16  | +24V DC                  |            |         | 16      | GND  |                           |            |      |         |                                     |
| 26                        | GND                      |           |                          | 26  | +24V DC                  |            |         | 26      | GND  |                           |            |      |         |                                     |
| X20S0842 (6x Safety IN)   | - 115KF 53a (Kombimodul) |           |                          |   | X20D6371 (6x Digital IN) | - 113KF 23 |         |         |  | X20D6332 (6x Digital OUT) | - 114KF 31 |      |         |                                     |
|                           | 11                       | Pulse 1   |                          | Si 1 Sauerstoffsenssor Bauraum Alarm                    |                          | 11         | DI 1    |         | Reserve                                    |                           | 11         | DO 1 |         | Reserve                             |
|                           | 12                       | Si 1      |                          | Taster Quittieren                                       |                          | 21         | DI 2    |         | "  |                           | 21         | DO 2 |         | "                                   |
|                           | 21                       | Pulse 2   |                          | Si 2 Schutztür Abdeckung Kanal 1                        |                          | 12         | DI 3    |         | "  |                           | 12         | DO 3 |         | "                                   |
|                           | 22                       | Si 2      |                          | Schutztür Abdeckung Kanal 2                             |                          | 22         | DI 4    |         | "  |                           | 22         | DO 4 |         | "                                   |
|                           | 13                       | Pulse 3   |                          | Si 3 Not-Halt von Zelle Kanal 1                         |                          | 13         | DI 5    |         | "  |                           | 13         | DO 5 |         | "                                   |
|                           | 14                       | Si 3      |                          | Not-Halt von Zelle Kanal 2                              |                          | 23         | DI 6    |         | "  |                           | 23         | DO 6 |         | "                                   |
|                           | 23                       | Pulse 4   |                          | Si 4 SiK von Zelle Kanal 1                              |                          | 14         | +24V DC |         |  |                           | 14         | GND  |         |                                     |
|                           | 24                       | Si 4      |                          | SiK von Zelle Kanal 2                                   |                          | 24         | +24V DC |         |  |                           | 24         | GND  |         |                                     |
|                           | 15                       | Si 5      |                          | Reserve   |                          | 15         | +24V DC |         |  |                           | 15         | GND  |         |                                     |
| 25                        | Si 6                     |           | Reserve                  | 25  | +24V DC                  |            |         | 25      | GND  |                           |            |      |         |                                     |
| 16                        | Si 7                     |           | Reserve                  | 16  | +24V DC                  |            |         | 16      | GND  |                           |            |      |         |                                     |
| 26                        | Si 8                     |           | Reserve                  | 26  | +24V DC                  |            |         | 26      | GND  |                           |            |      |         |                                     |
| X20S0842 (6x Safety OUT)  | - 115KF 53b (Kombimodul) |           |                          |   | X20D6371 (6x Digital IN) | - 113KF 23 |         |         |  | X20D6332 (6x Digital OUT) | - 114KF 31 |      |         |                                     |
|                           | 11                       | SO 1+     |                          | Reserve   |                          | 11         | DI 1    |         | Reserve                                    |                           | 11         | DO 1 |         | Reserve                             |
|                           | 12                       | SO 1-     |                          | Reserve   |                          | 21         | DI 2    |         | "  |                           | 21         | DO 2 |         | "                                   |
|                           | 21                       | SO 2+     |                          | Reserve   |                          | 12         | DI 3    |         | "  |                           | 12         | DO 3 |         | "                                   |
|                           | 22                       | SO 2-     |                          | Reserve   |                          | 22         | DI 4    |         | "  |                           | 22         | DO 4 |         | "                                   |
|                           | 13                       | SO 3+     |                          | Reserve   |                          | 13         | DI 5    |         | "  |                           | 13         | DO 5 |         | "                                   |
|                           | 14                       | SO 3-     |                          | Reserve   |                          | 23         | DI 6    |         | "  |                           | 23         | DO 6 |         | "                                   |
|                           | 23                       | SO 4+     |                          | Reserve   |                          | 14         | +24V DC |         |  |                           | 14         | GND  |         |                                     |
|                           | 24                       | SO 4-     |                          | Reserve   |                          | 24         | +24V DC |         |  |                           | 24         | GND  |         |                                     |
|                           | 15                       | SO 5      |                          | Reserve   |                          | 15         | +24V DC |         |  |                           | 15         | GND  |         |                                     |
| 16                        | GND                      |           | Reserve                  | 25  | +24V DC                  |            |         | 25      | GND  |                           |            |      |         |                                     |
| 25                        | SO 6                     |           | Reserve                  | 16  | +24V DC                  |            |         | 16      | GND  |                           |            |      |         |                                     |
| 26                        | GND                      |           |                          | 26  | +24V DC                  |            |         | 26      | GND  |                           |            |      |         |                                     |
| X20DCI976 (Encoder modul) | - 116KF 61               |           |                          |   | X20D6371 (6x Digital IN) | - 113KF 23 |         |         |  | X20D6332 (6x Digital OUT) | - 114KF 31 |      |         |                                     |
|                           | 11                       | CA-01     |                          | Encoder Spur A  |                          | 11         | DI 1    |         | Reserve                                    |                           | 11         | DO 1 |         | Reserve                             |
|                           | 12                       | CB-01     |                          | Encoder Spur B  |                          | 21         | DI 2    |         | "  |                           | 21         | DO 2 |         | "                                   |
|                           | 13                       | CR-01     |                          | Encoder Richtung  |                          | 12         | DI 3    |         | "  |                           | 12         | DO 3 |         | "                                   |
|                           | 14                       | DI-01     |                          | Reserve   |                          | 22         | DI 4    |         | "  |                           | 22         | DO 4 |         | "                                   |
|                           | 15                       | +24V      |                          | Reserve   |                          | 13         | DI 5    |         | "  |                           | 13         | DO 5 |         | "                                   |
|                           | 16                       | GND       |                          | Reserve   |                          | 23         | DI 6    |         | "  |                           | 23         | DO 6 |         | "                                   |
|                           | 21                       | n.c.      |                          | n.c.  |                          | 14         | +24V DC |         |  |                           | 14         | GND  |         |                                     |
|                           | 22                       | n.c.      |                          | n.c.  |                          | 24         | +24V DC |         |  |                           | 24         | GND  |         |                                     |
|                           | 23                       | n.c.      |                          | n.c.  |                          | 15         | +24V DC |         |  |                           | 15         | GND  |         |                                     |
| 24                        | DI-02                    |           | Reserve                  | 25  | +24V DC                  |            |         | 25      | GND  |                           |            |      |         |                                     |
| 25                        | +5V                      |           | Encoder +5V Versorgung   | 16  | +24V DC                  |            |         | 16      | GND  |                           |            |      |         |                                     |
| 26                        | GND                      |           | Encoder GND Versorgung   | 26  | +24V DC                  |            |         | 26      | GND  |                           |            |      |         |                                     |