

Anschluß-Hinweise IDP 101

Connection Information IDP 101

Interpolations- und Digitalisierungs-Platine – 5fach
 Interpolation and Digitising PCB – 5fold

Ausführungen/Versions:

| Id.-Nr. | max. Eingangs-Freq./ min. Flankenabstand | Referenzimpuls-Breite/ Three-State-Funktion | Stecker Connectors |
|------------|---------------------------------------------|-------------------------------------------------|----------------------------------|
| | max. Input Freq./ min. Edgeseparation | Reference impulse width Three-state Function | |
| 262 417 01 | 25 kHz/2 μ s | 90°el./kein Three-State no Three-State | abgewinkelt right angle mount |
| 02 | 25 kHz/2 μ s | 270°el./Three-State | |
| 03 | 50 kHz/1 μ s | 90°el./kein Three-State no Three-State | |
| 276 485 01 | 25 kHz/2 μ s | 90°el./kein Three-State no Three-State | gerade vertical mount |
| 03 | 50 kHz/1 μ s | | |

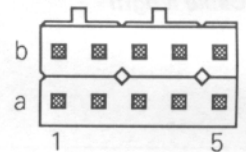
Kabelbaugruppen für Meßsystem-Eingang und IDP-Ausgang lieferbar.
 Cable assembly for encoder input and IDP output available.

Pinbelegungen

Pin Layouts

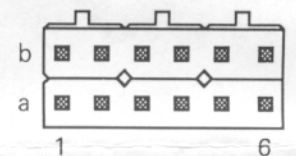
10poliger Platinenstecker, Eingang $11 \mu A_{SS}$
 10-pole PCB connector, input $11 \mu A_{pp}$

| Pin | 1a | 1b | 2a | 2b | 3a | 3b | 4a | 4b | 5a | 5b |
|--------|---------------------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Signal | (0 V) Schirm ground | U_P +5 V | frei free | U_n 0 V | (-) I_0 | (+) I_0 | (-) I_2 | (+) I_2 | (-) I_1 | (+) I_1 |

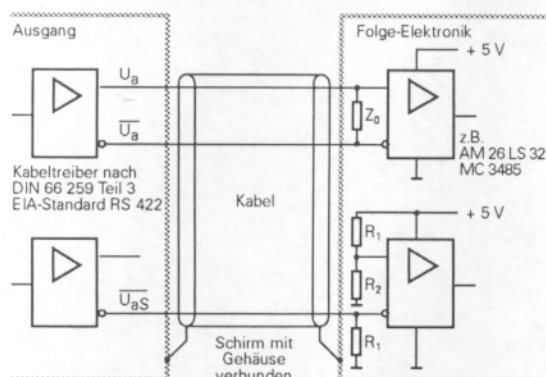


12poliger Platinenstecker, Ausgang TTL
 12-pole PCB connector, output TTL

| Pin | 1a | 1b | 2a | 2b | 3a | 3b | 4a | 4b | 5a | 5b | 6a | 6b |
|--------|-----|-------------------------|------|-------------------------|----------------|----------|----------------|----------|----------------|----------|----------------|----------|
| Signal | 0 V | Sensor sensor 0 V | +5 V | Sensor sensor 5 V | \bar{U}_{aS} | U_{aS} | \bar{U}_{a0} | U_{a0} | \bar{U}_{a2} | U_{a2} | \bar{U}_{a1} | U_{a1} |

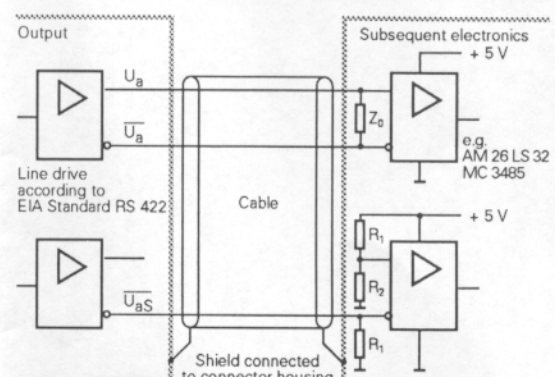


Empfohlene Eingangsschaltung der Folge-Elektronik



$Z_0 = 120 \Omega$, $R_1 = 4,7 \text{ k}\Omega$, $R_2 = 1,8 \text{ k}\Omega$

Recommended Input Circuitry of Subsequent Electronics



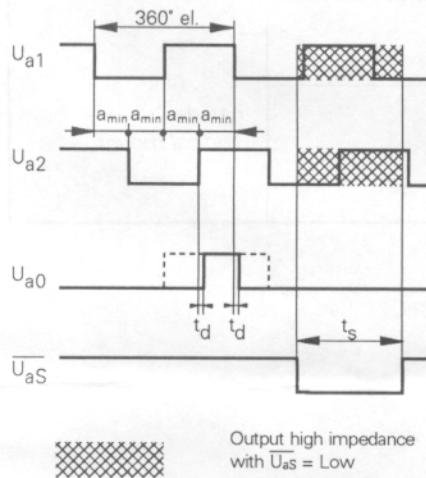
$Z_0 = 120 \Omega$, $R_1 = 4.7 \text{ k}\Omega$, $R_2 = 1.8 \text{ k}\Omega$

Specifications IDP 101

| | | |
|----------------------------------|------------------------|----------------------------------------------------------------------------------|
| Operating temperature | 0 to 70°C | |
| Storage temperature | -30 to 80°C | |
| Humidity grade | F as per DIN 40040 | |
| Vibration (50 to 2000 Hz) | ≤ 20 m/s ² | |
| Shock (11 ms duration) | ≤ 300 m/s ² | |
| Voltage supply | $U_P = 5 V \pm 5\%$ | |
| Current consumption | Encoder light source: | see encoder specifications |
| | PCB electronics: | typ. 45 mA, max. 80 mA (without current for measuring system or output load) |
| | Output load: | Increase in current consumption with the recommended output circuitry max. 80 mA |

Encoder input for HEIDENHAIN encoders with sinusoidal scanning signals.
Signal amplitudes: 11 μA_{pp} Current signals

Output signals



Incremental signals: TTL square-wave pulse U_{a1} , U_{a2} and their inverted pulse trains $\overline{U_{a1}}$ and $\overline{U_{a2}}$.

Reference signal: 1 square wave pulse U_{a0} and its inverted pulse $\overline{U_{a0}}$ 90°el. or 270°el. (270° special version)

Pulse width: $t_d \leq \pm 0.05 ms$

Fault detection signal: 1 square-wave pulse $\overline{U_{as}}$

Pulse width: $t_s \geq 20 ms$

Three-state: Outputs for U_{a1} , U_{a2} , $\overline{U_{a1}}$ and $\overline{U_{a2}}$ can be switched to high impedance with $\overline{U_{as}} = LOW$ when a signal error has been detected (special version).

Signal level: $U_H \geq 2.5 V$ with $-I_H \leq 20 mA$

$U_L \leq 0.5 V$ with $I_L \leq 20 mA$

Load capacity: $-I_H \leq 20 mA$, $I_L \leq 20 mA$, $C_{Last} \leq 1000 pF$ to 0 V

Short circuit stability: Momentary short circuit of all outputs against 0 V permissible. One output permanently short-circuit proof at ambient temperature below 25°C (77°F).

Switching time:

Rise time: $t_+ = typ. 10 ns, max. 30 ns$

Fall time: $t_- = typ. 10 ns, max. 30 ns$

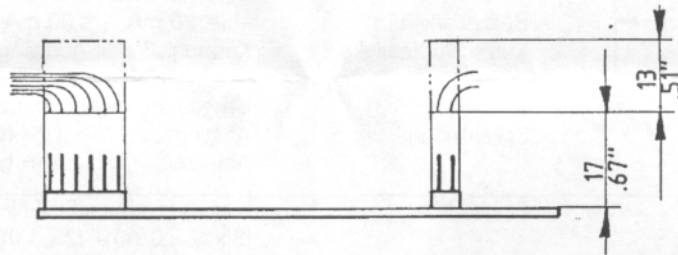
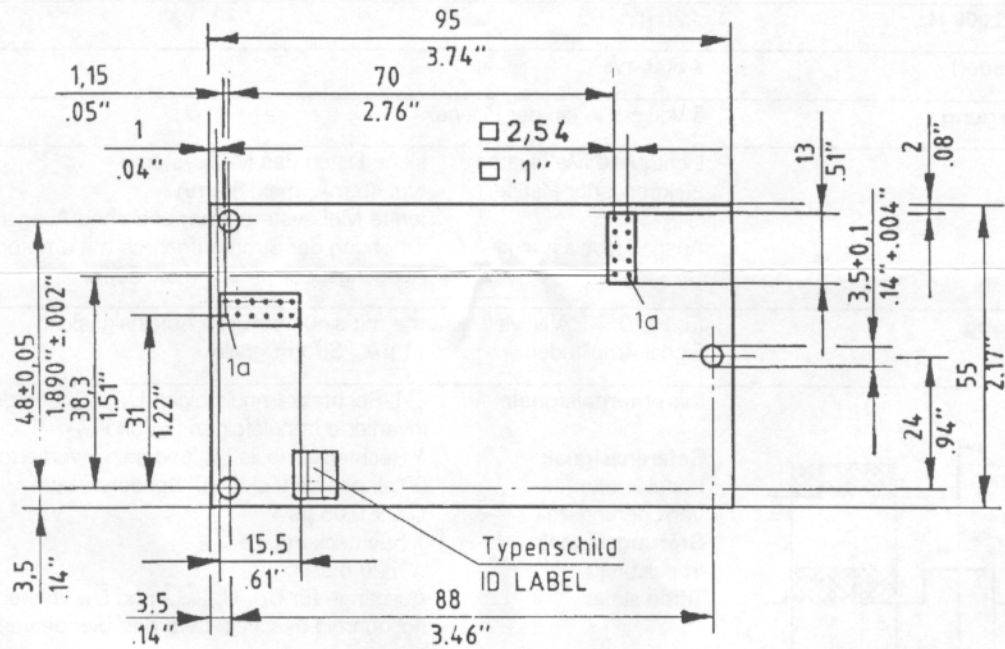
Cable length

Input: max. 30 m (100 ft) with HEIDENHAIN cable
[3 x (2 x 0.14) + (2 x 1.0)] mm² (at $I_{encoder} \leq 140 mA$)

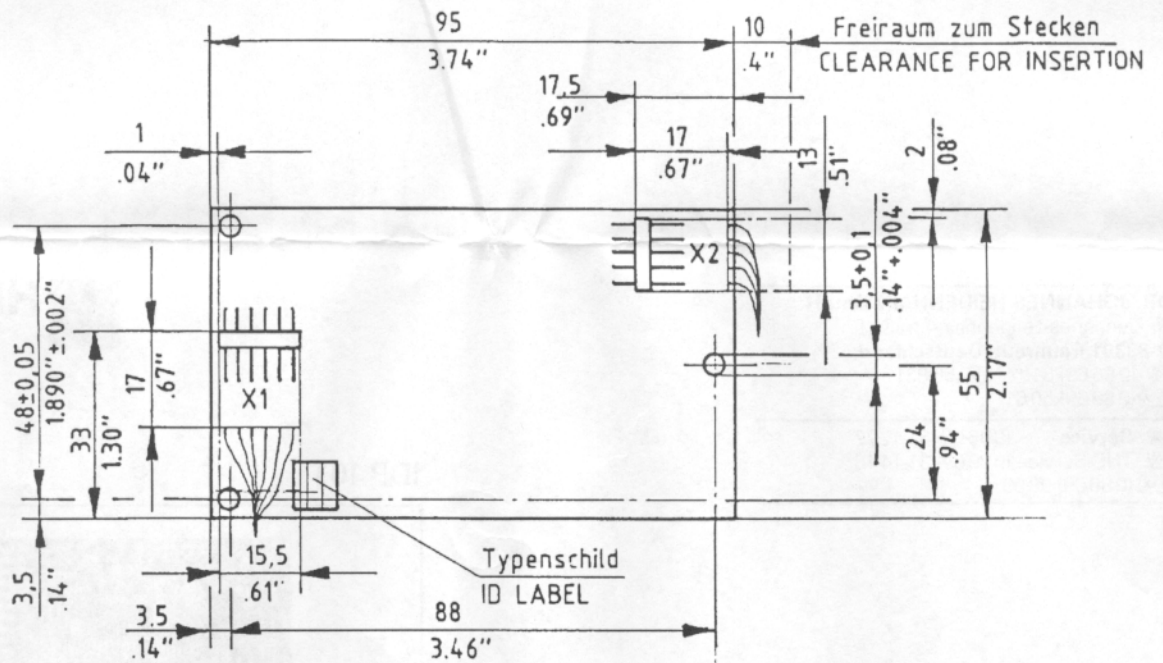
Output: max. 50 m (164 ft) with HEIDENHAIN cable
[(4 x 2 x 0.14) + (4 x 0.5)] mm²
and differential line receiver at input of subsequent electronics.

Anschlußmaße mm Dimensions inch

Platine mit geraden Steckern
PCB with vertical connectors



Platine mit abgewinkelten Steckern
PCB with right angle connectors

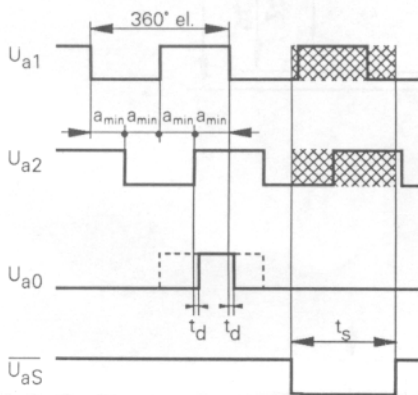


Technische Daten IDP 101

| | |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Arbeitstemperatur | 0 bis 70°C |
| Lagertemperatur | -30 bis 80°C |
| Feuchtekategorie | F nach DIN 40040 |
| Vibration (50 bis 2000 Hz) | ≤ 20 m/s ² |
| Schock (11 ms Dauer) | ≤ 300 m/s ² |
| Spannungsversorgung | 5 Volt ± 5% (an der Platine) |
| Stromaufnahme | Lichtquelle Meßsystem: siehe Daten des Meßsystems Elektronik der Platine: typ. 45 mA, max. 80 mA (ohne Meßsystemstrom und ohne Ausgangsbelastung) Ausgangsbelastung: Erhöhung der Stromaufnahme mit empfohlener Ausgangsbeschaltung max. 80 mA |

| | |
|-------------------|--------------------------------------------------------------------------------------------------------------------|
| Meßsystem-Eingang | für HEIDENHAIN-Meßsysteme mit sinusförmigen Abtastsignalen. Signal-Amplituden: 11 µA _{SS} Stromsignale |
|-------------------|--------------------------------------------------------------------------------------------------------------------|

Ausgangssignale



Ausgänge hochohmig bei $U_{aS} = \text{Low}$

| | |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inkrementalsignale: | TTL-Rechteck-Impulsfolgen U_{a1} , U_{a2} und deren invertierte Impulsfolgen \overline{U}_{a1} und \overline{U}_{a2} . |
| Referenzsignal: | 1 Rechteck-Impuls U_{a0} und sein invertierter Impuls \overline{U}_{a0} Impulsbreite: 90°el. oder 270°el. (270° Sonderversion) |
| Verzögerungszeit: | $t_d \leq \pm 0,05 \mu\text{s}$ |
| Störungssignal: | 1 Rechteck-Impuls \overline{U}_{aS} |
| Impulsbreite: | $t_s \geq 20 \text{ ms}$ |
| Three-state: | Ausgänge für U_{a1} , U_{a2} , \overline{U}_{a1} und \overline{U}_{a2} können bei $\overline{U}_{aS} = \text{LOW}$ hochohmig geschaltet werden (Sonderversion). |

| | |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Signalpegel: | $U_H \geq 2,5 \text{ V}$ bei $-I_H \leq 20 \text{ mA}$ $U_L \leq 0,5 \text{ V}$ bei $I_L \leq 20 \text{ mA}$ |
| Belastbarkeit: | $-I_H \leq 20 \text{ mA}$, $I_L \leq 20 \text{ mA}$, $C_{\text{Last}} \leq 1000 \text{ pF}$ gegen 0 V |
| Kurzschlußfestigkeit: | Kurzschluß aller Ausgänge gegen 0 V kurzzeitig zulässig. Ein Ausgang dauernd kurzschlußfest bei Umgebungstemperatur unter 25°C. |
| Schaltzeiten: | Anstiegszeit: $t_+ = \text{typ. } 10 \text{ ns, max. } 30 \text{ ns}$ Abfallzeit: $t_- = \text{typ. } 10 \text{ ns, max. } 30 \text{ ns}$ |

| | |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Kabellänge | Eingang: max. 30 m mit HEIDENHAIN-Kabel [3 x (2 x 0,14) + (2 x 1,0)] mm ² (bei $I_{\text{Meßsystem}} \leq 140 \text{ mA}$) |
| | Ausgang: max. 50 m mit HEIDENHAIN-Kabel [(4 x 2 x 0,14) + (4 x 0,5)] mm ² und Differenzleitungsempfänger am Eingang der Folge-Elektronik. |

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