

## 1. General summary

INDRAMAT offers digital single-turn (GDS 1.1) and multiturn (GDM 1.1) encoders.

The GDS 1.1 has a resolution of one motor revolution, while the GDM 1.1 has an absolute resolution of 4096 motor revolutions.

The encoder signals are evaluated by the auxiliary plug-in card DFF1.1 or the feedback input of the drive controller. The card is inserted into one of the slots on the digital drive controller.

The encoders are in an enclosure which has a protection category of IP 65. A coupling unit makes it possible to directly mount these onto the mechanical system of a machine or plant.

## 2. Technical data

Protection category:	IP 65
Resolution:	$256 \times 2^{13} = 2\,097\,152$ increments per revolution
Accuracy of the system:	+/- 0.5 angular minutes
The resolution of the multiturn encoder DSM:	4096 revolutions of the rotor
Operating principle of the sensor:	optical scanning of a code disc
Maximum RPM:	6000 RPMs
Mass:	1120 grams
Rotor moment of inertia:	$100.6 \cdot 10^{-6} \text{ kgm}^2$
Torque at 20° C:	> 0.01 Nm
Vibrations (10 to 2000 Hz):	< 100 m/s <sup>2</sup>
Shock (11 ms):	max. 1000 m/s <sup>2</sup>
Operating temperature range:	0° C to 105° C
Storage temperature range:	-30° C to +105° C
Axial shaft load:	maximum 100 N
Radial shaft load:	maximum 200 N
Recommended type of coupling unit:	Control - flex CPQ 15 - xx - xx Made by Schmidt-Kupplung
Permissible cable length:	150 meters

### 3. Ordering information

Type of encoder	Order number
Digital single-turn encoder GDS 1.1	250531
Digital multi-turn encoder GDM 1.1	250532

### 4. Dimensional data

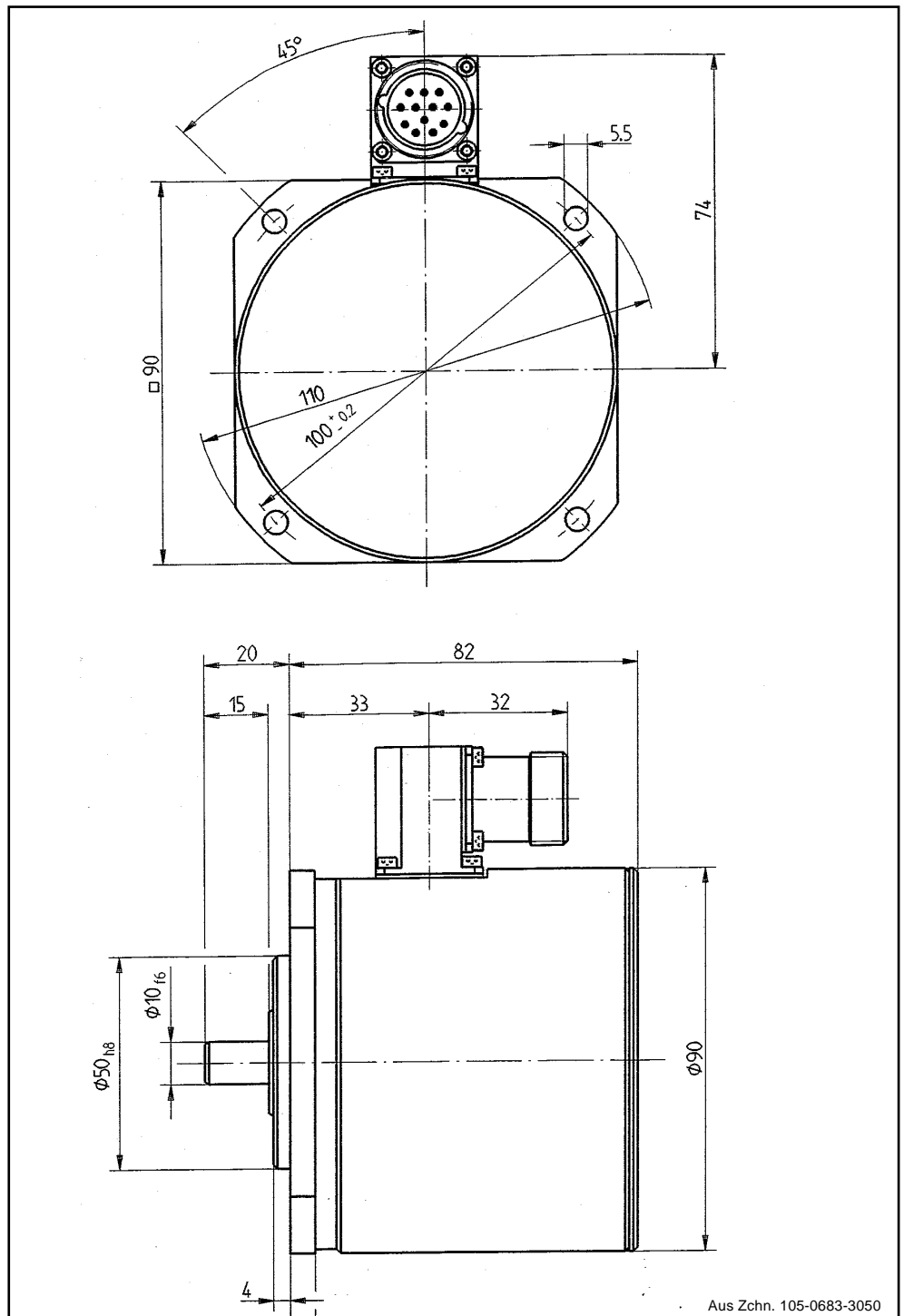


Figure 1: GDS and GDM - dimensional data

## 5. Electrical connections

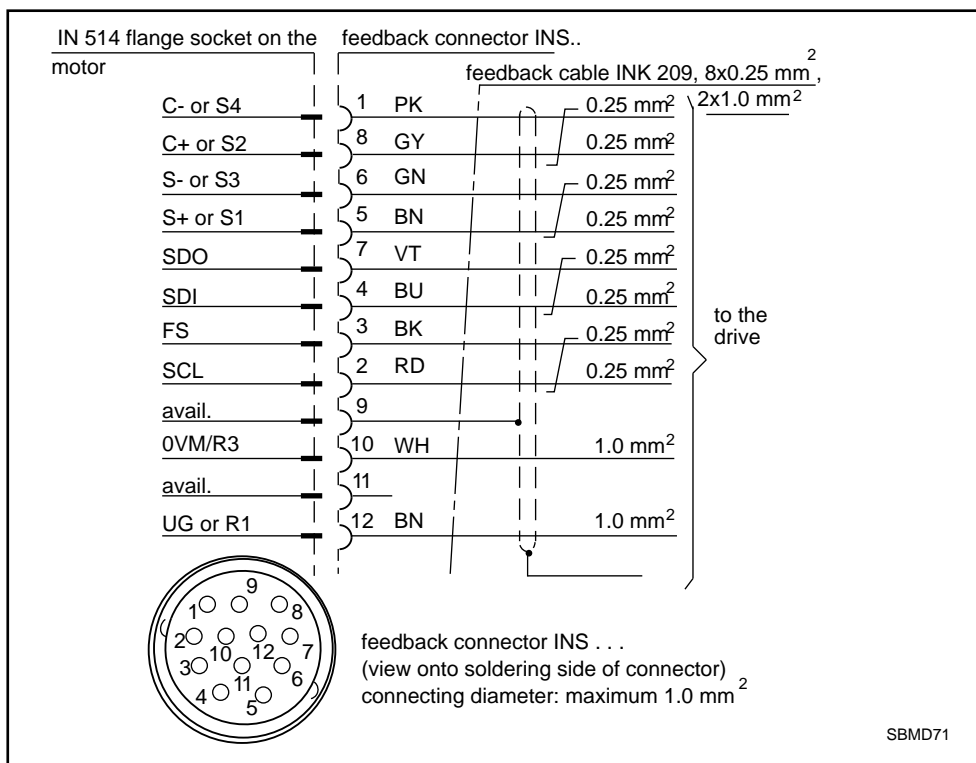


Figure 2: GDS 1.1 and GDM 1.1 - schematic diagram

Type	connectors of INDRAMAT cable NK 209	connectors suited for all cables for outside diameter of 6 to 10 mm
straight connector	INS 513	INS 512
angle connector	INS 511	INS 510

Figure 3: Connectors for GDS 1.1 and GDM 1.1

Type designation	IN 209
Protection cate. transition cable/connector	IP 65
Cable diameter	8.8 mm
Bending radius fixed routing	40 mm
Bending radius flexible routing	90 mm
(lifespan > 500 000 bending loads)	
Specific weight	0.102 kg/m
Permissible ambient temperature for operation and storage	-30° to + 80°
Cable surface	poor adhesion, prevents sticking in drag chains
Maximum cable length	75 meters
Chemical characteristics	absolute resistance to mineral oils and greases, silicone and halogen free

Figure 4: INDRAMAT cable IN 209 - technical data