

# Crank angle encoder set

Precise angle signals from 0 ... 12 000 1/min

The Crank Angle Encoder Set, Type 2614DK..., provides the reference for all measurements related to the crank angle. It is typically used for combustion analysis applications on engines.

- Speed range 0 ... 12 000 1/min
- Auto adjustment of encoder and electronics
- Suitable for start measurements
- Direct connection to KiBox2

### Description Type 2614DK...

The Crank Angle Encoder Set consists of an angle encoder and a separate electronics module which can be used on a variety of engines in combination with all data acquisition systems with LVDS or TTL signal input. The fact that the encoder functions from standstill enables it to be used to conduct engine start measurements. Such applications include accurate measurements during the starting of test vehicles and in a low temperature test chamber. The optical sensor provides a resolution of 720x0,5°. The set Type 2614DK1, can be directly connected to the Kistler KiBox or other indicating systems using LVDS input. For indicating systems with TTL input we recommend Type 2614DK0. A matching TTL connecting cable is available in our range of optional accessories. In contrast to other methods, optical crank angle encoders provide maximum accuracy over a wide speed range and the highest level of interference immunity.

### Applications

Combustion analysis data is generally represented on the basis of degrees [°] of crank angle. The crank angle encoder provides an angular and a TDC relationship, necessary for the calculation of any crank angle-based result related to a combustion cycle (e.g. indicated mean effective pressures or maximum pressures).



### Technical data of crank angle encoder Type 2614D11

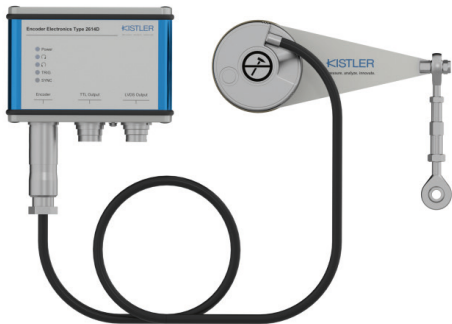
Crank angle signal	°	720x0,5
Speed range	1/min	0 ... 12.000
Temperature range	° C	-40 ... 85
Mechanical Interface/Mounting diameter (mounting compatibility to Type 2614C11)	mm	60
Electrical connection		cable with plug l = 2 m
Weight	g	360



### Technical data of crank angle encoder Type 2614D21

Control and indication LED's		Power Rotation cw <sup>1</sup> /ccw <sup>2</sup> Trigger Synchronization
Output signal to indicating system		LVDS-Signal TTL-Signal
Power supply	VDC	8 ... 48
Temperature range	° C	-30 ... 70
Dimensions	mm	108x74x36
Weight	g	290

<sup>1</sup> clockwise  
<sup>2</sup> counter clockwise



Crank angle encoder Set Type 2614DK...

This information corresponds to the current state of knowledge. Kistler reserves the right to make technical changes. Liability for consequential damage resulting from the use of Kistler products is excluded.

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### Mounting/mechanical adaption of the encoder

The angle encoder must be mounted directly on the free end of the crankshaft, sufficiently rigidly to prevent slipping under torsion. This is achieved by providing the extension with a matching flange with three holes (Fig. 1).

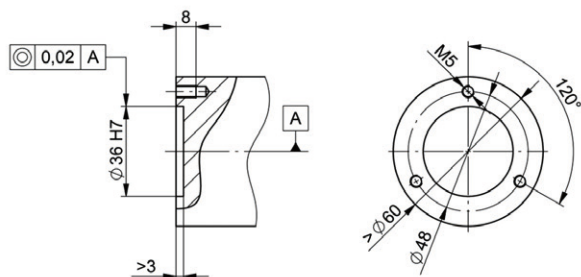


Fig. 1: Mounting flange for installing crank angle encoder Type 2614D11

To avoid vibration, the encoder must also be centered very accurately. It can be mounted at any position. Its case must then be attached to a rigid part of the engine with an arm and a rod.

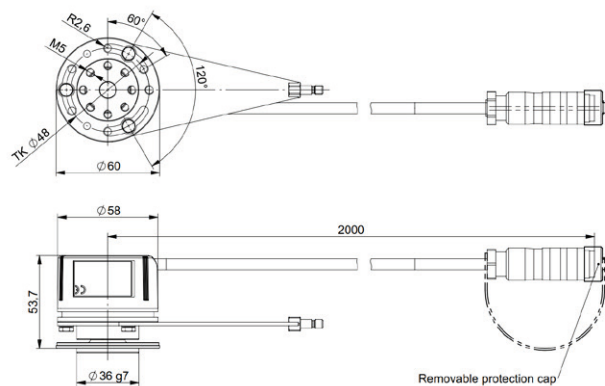


Fig. 2: Dimensions of crank angle encoder Type 2614D11

### Installation of the crank angle encoder set

#### Type 2614DK0

##### System setup with TTL-signal output

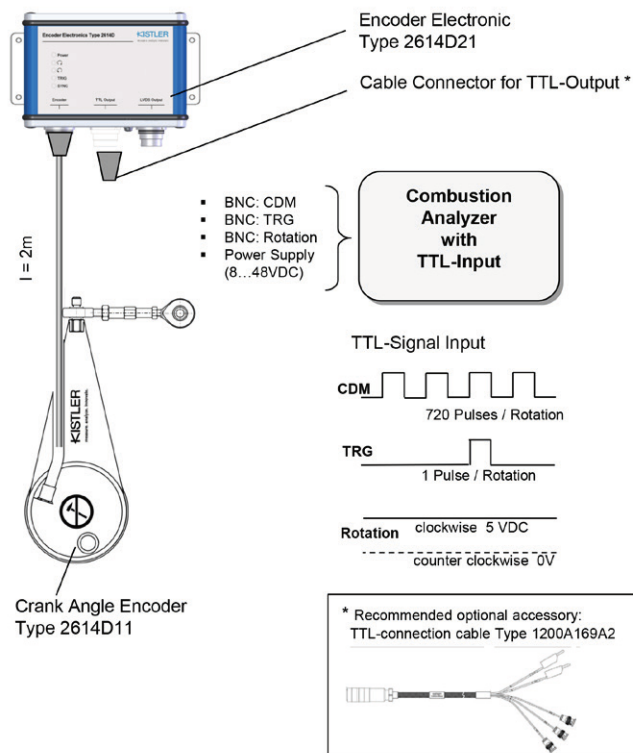


Fig. 3: Crank angle encoder set Type 2614DK0

#### Type 2614DK1

##### System setup with LVDS-signal output

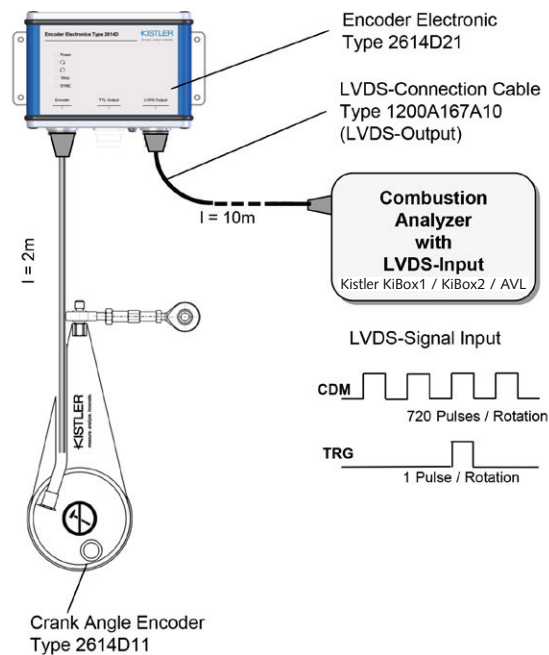


Fig. 4: Crank angle encoder set Type 2614DK1

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### System setup with direct connection to KiBox2 Type 2895A

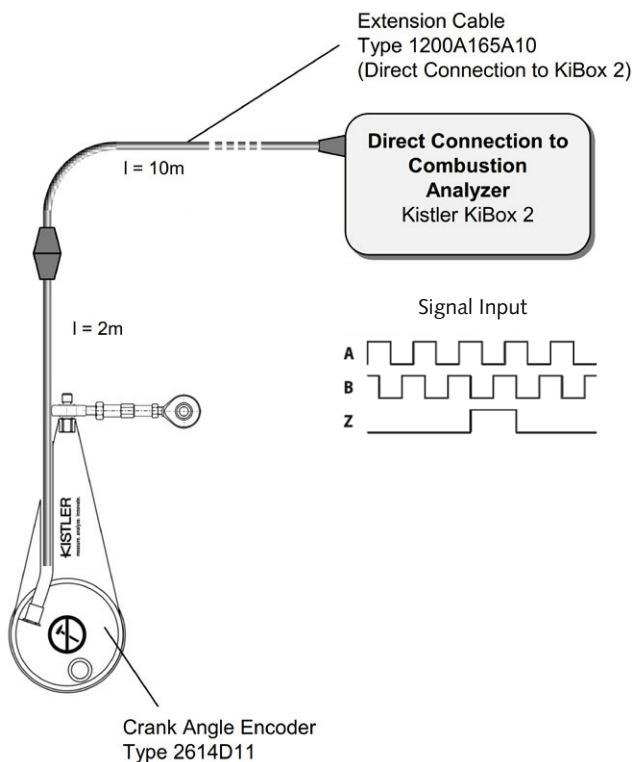


Fig. 5: System setup of Crank Angle Encoder Set 2614DK2 incl. extension cable Type 1200A165A10 for direct connection to KiBox2 Type 2895A

• Crank Angle Encoder incl. link rod (65013726) and mounting material	2614D11
• Encoder Electronic incl. mounting plate (55118749)	2614D21
• Extension cable (L=10m) for direct connection to KiBox2 (only for Type 2614DK2)	1200A165A10
• LVDS connecting cable (L=10 m), (only for Type 2614DK1)	1200A167A10
• Cable connector for TTL-interface at 2614D21 (only for Type 2614DK0)	55138869
• Case with inlays	55122415

2614D11

2614D21

1200A165A10

1200A167A10

55138869

55122415

• TTL connecting cable (L = 2 m) incl. AC-adaptor 24 VDC for power supply of 2614D21	1200A169A2
• Encoder electronic for crank angle encoder 2614D11 with special resolution: <ul style="list-style-type: none"> <li>– TTL signal output: 0,1°CA</li> <li>– LVDS signal output: 0,5°CA</li> <li>– Speed range: 60 ... 12'000 1/min</li> </ul>	2614D21Y0529
• BNC extension cable (L = 5 m)	1603B5
• BNC extension cable (L = 10 m)	1603B10
• Cable connector for TTL-interface at 2614D21	55138869
• Torque arm replacement set to crank angle encoder Type 2614C11	2614CZ1

Type/Mat.-No.  
1200A169A2

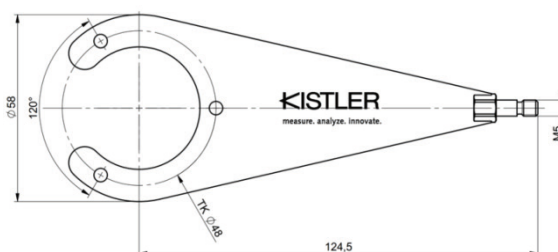
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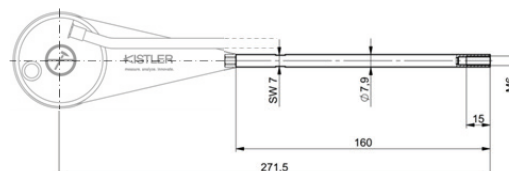
1603B10

55138869

2614CZ1



- Extension rod, retrofit set to crank angle 2614CZ2  
encoder Type 2614D11 / 2614C11,  
replacement compatible to AVL crank  
angle encoder Type 365C / 366C



### Ordering key

### Crank angle encoder set

Type 2614D11 Type 2614D21 incl. cable connector for TTL-interface at 2614D21	<b>0</b>
Type 2614D11 Type 2614D21 incl. LVDS connecting cable Type 1200A167A10	<b>1</b>
Type 2614D11 incl. extension cable Type 1200A165A10 for direct connection to KiBox2 Type 2895A	<b>2</b>

Type 2614DK ☐