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# IQAN-LC6-X05 Input Devices

Electronic Control Systems



ENGINEERING YOUR SUCCESS.

### Application

The IQAN-LC6-X05 is a mini-coordinate joystick that incorporates ergonomic design with ruggedness, functionality, light weight and high flexibility for mobile market applications. The unit is designed to withstand aggressive conditions in different types of mobile equipment. The LC6 has a compact ergonomic design and small dimensions make it ideal for armrest and panel mounting.

### Design and function

The IQAN-LC6-X05 is designed for outdoor use. The housing and handle have potted electronics and are rated up to IP67.

The ergonomic handle has a unique, patent pending, rotary knob function that adds a fourth proportional function integrated in the handle. The design gives the user a benefit to control all joystick proportional functions without changing their grip on the handle, and makes the LC6 ideal for repetitive, precise motion control during extended periods in mobile applications. The 4th axis default fitted ring has a small diameter, however, if needed, the operator can attach a larger sized ring to provide a different grip feeling. The handle makes it ideal for applications as rototilt and articulated steering.

All proportional output signals in joystick, rocker and knob are of contactless Hall effect type with dual sensors to provide redundancy for safety and reliability. A magnet shielding technology is used to protect the joystick from external magnetic fields.

IQAN-LC6-X05 joystick redundant signals allow error checking to make it easy for the application designer to meet high safety requirements by using IQAN software. The primary signal for each axis is 10%-90% of supply voltage. The corresponding secondary signal is 90%-10% of supply voltage.

The joystick has tough base material for long life and made using selected components and conforms to strict international requirements.

### Specifications

#### General (joystick and handle)

Weight	160 g (base)
Weight	80 g (handle)
Power supply (Vs)	4.5 to 5.5 Vdc
Current (base)	Max 45 mA (@ 5Vdc)
Current (rocker)	Max 23 mA (@ 5Vdc)
Current (knob rotary)	Max 23 mA (@ 5Vdc)
CE marking	2004/108/EC

#### Mechanical

Angle of movement	
Base	20°
Rocker	20°
Knob	20°
Expected life	5 million cycles

#### Environmental

Temperature	
Operating,	-40 to +70° C
Storage,	-40 to +85° C
Sealing	IP65 <sup>1</sup>

#### Analog outputs

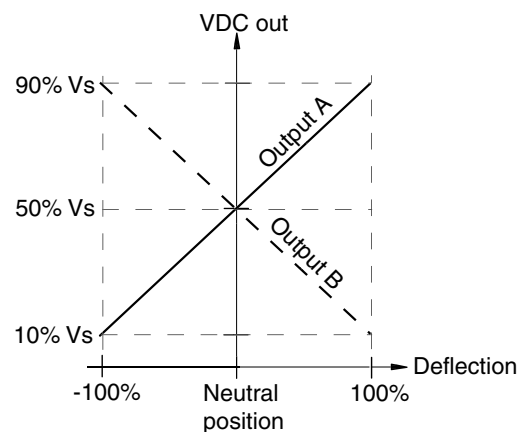
Analog output range	10%-90% Vs
Resolution	<2 mV)

#### Connection

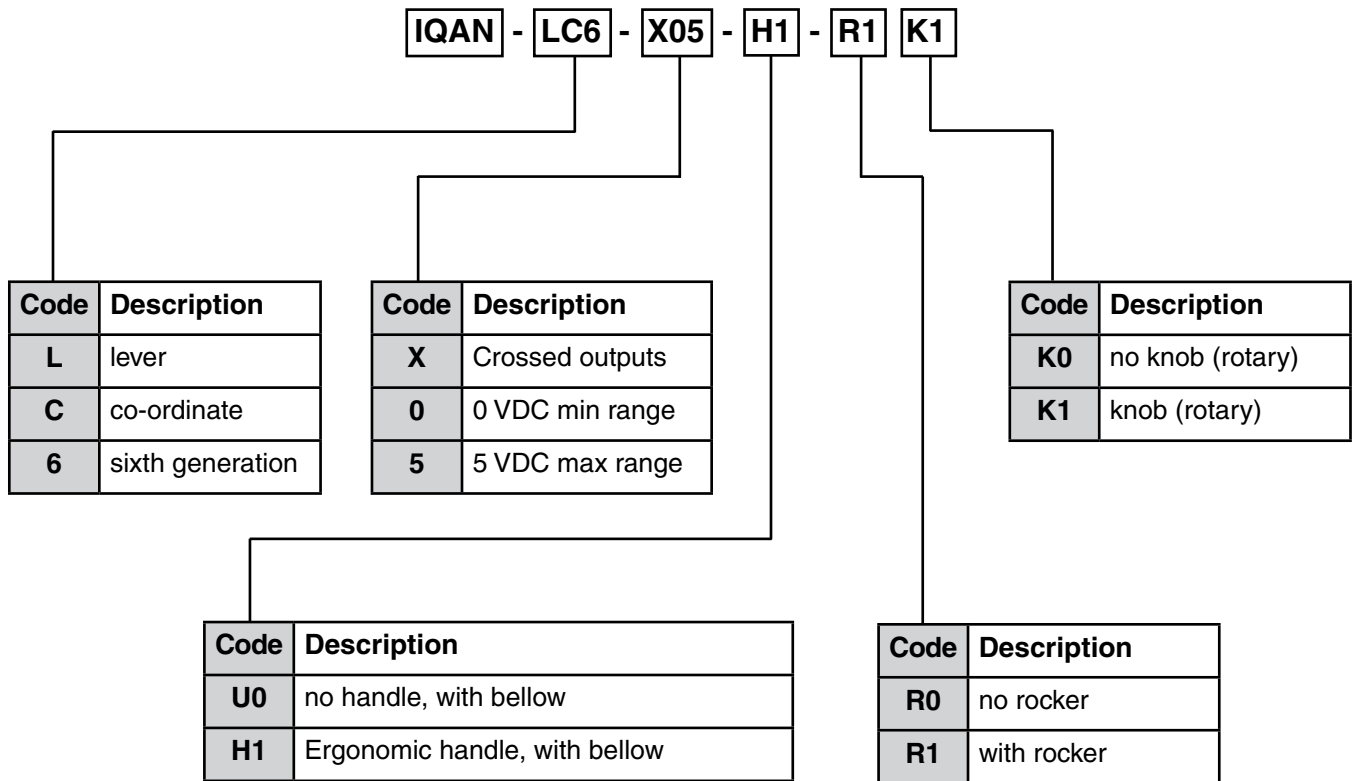
LC6-X05-U0	Molex MicroFit 3.0
LC6-X05-H1-R1K0	Molex MicroFit 3.0
LC6-X05-H1-R1K1	Molex MicroFit 3.0

1) With sealed handle and below, depending on connector

**Deflection vs. output diagram**



**Model code**

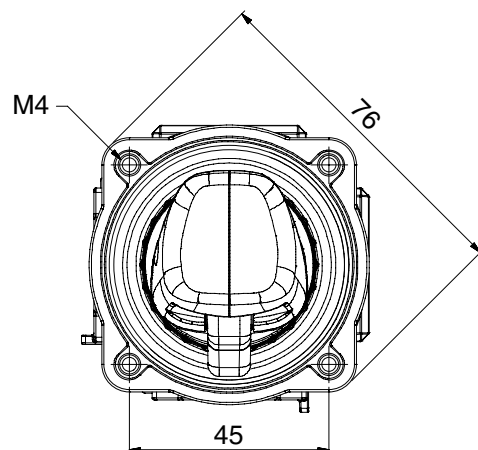
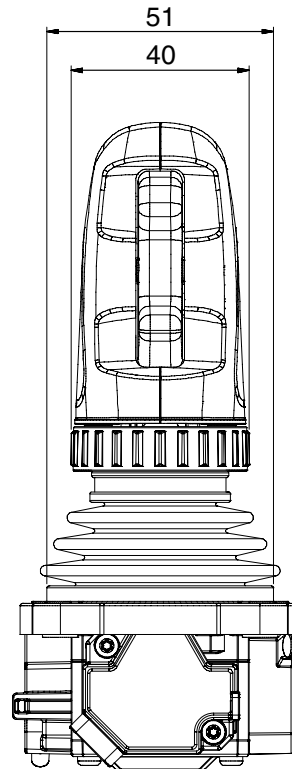
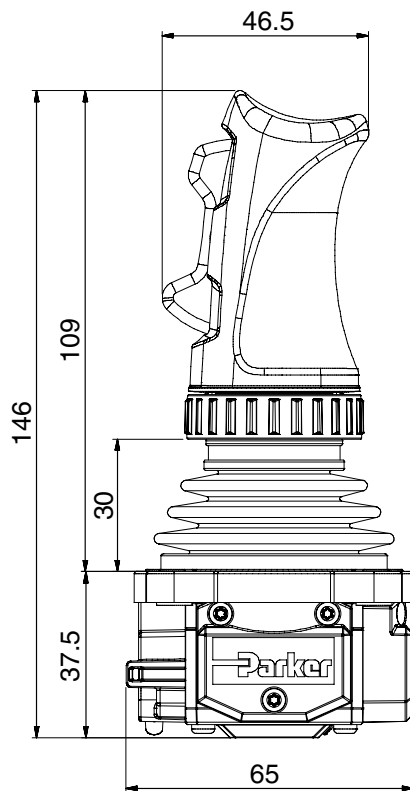
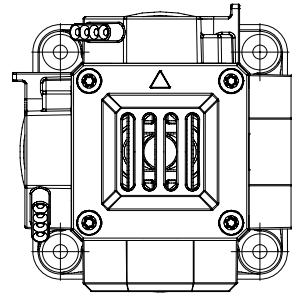


**Ordering part numbers**

IQAN-LC6-X05-U0: 20077757  
 IQAN-LC6-X05-H1-R1K0: 20077758  
 IQAN-LC6-X05-H1-R1K1: 20077759

Connectors kit, -LC6 20077764

Cables, -LC6 20077763



units = mm

### Environmental Protection

#### EMI

ISO 13766/ISO 14982 (radiated emission)  
ISO 11452-4:2005 (conducted susceptibility)  
ISO 11452-2:2004 (radiated susceptibility)  
ISO 7637-3:2007 (immunity vs supply transients)

#### ESD

ISO 10605:2001, (Handling, Operation)

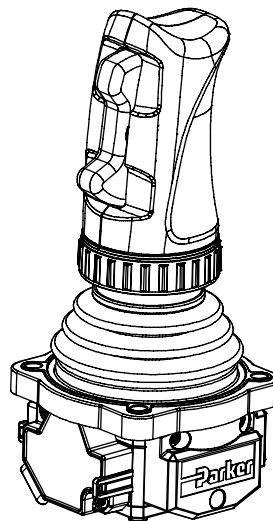
#### Mechanical

IEC 60068-2-29:1987 Eb (bump)  
IEC 60068-2-64:2008 Fh (random vibration)

#### Climate Environment

IEC 60529:2001 IP65 (water)<sup>1</sup>  
IEC 60068-2-78:2001 (damp heat, steady state)  
IEC 60068-2-30 :1985 Db (var1,damp,cyclic)  
IEC 60068-2-14:1984 Nb (change of temp.)  
IEC 60068-2-2:1993 Bb (dry heat)  
IEC 60068-2-1:1993 Ab (cold)  
IEC 60068-2-52:1996 Kb (salt,mist,cyclic)

1) With sealed handle and bellow, connector dependent.



## WARNING

**FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.**

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