

KiHUB

Type K3879BQ0x

On-Board Data Acquisition System

The KiHUB Type K3879BQ0x represents part of the new Kistler communication device family in order to link Kistler on-board measurement systems and ATDs used in automotive crash testing.

Basic functions of all KiHUBs and Type K3879BQ00 are:

- CrashLink®1 / CrashLink®2 / DTI connectivity
- Power distribution and internal power backup
- Trigger distribution
- 8-port Ethernet switch
- Media converter
- Trigger input
- Trigger output

Additional feature of Type K3879BQ01:

- Integrated stepdown converter to supply CL1 devices with 30 V and 100 W, which allows the KiHUB and all connected CL2 devices to be supplied within their full range of 20 ... 60 V

Additional feature of Type K3879BQ02:

- EXT connector supplies 13,2 V and 100 W to third party devices. Also Ethernet, T0 and SR trigger are provided.

The KiHUB has an input connection for a CrashLink®2 trailing cable. The CrashLink®1 connector can be utilized to connect a standard interconnection cable that can be used to interface with the widely used MINIDAU® family. Common to all systems are five or six sockets, depending on type of KiHUB, for the connection of CrashLink®2 devices such as nxt32 ATDs or Ki-DAU Data Acquisition units. DTI devices can also be connected via COMBox respectively MiniCOMBox. Also, there are connections for trigger inputs (start of record, T0) and trigger output (T0 and SR).

Description

The KiHUB represents an intelligent terminal block that combines the different Kistler data acquisition systems with respect to communication, power and trigger distribution. The power supply of KiHUB is provided via the trailing cable (CrashLink®2) plug-in point (range 20 ... 60 V) or the CrashLink®1 (range 20 ... 36 V) connection. By default both plug-in points are decoupled internally by a diode in order to avoid unintended electrical surge on the CrashLink®1 interface.



Furthermore the KiHUB is equipped with a battery for at least 240 seconds. This secures Ethernet communication and trigger event distribution in the case of power breakdown during test. This time is changeable through an internal DIP switch.

Technical Data

Type	K3879BQ0x	
Weight	kg	1,3
Dimensions (LxWxH)	mm	231x64x77,2
<hr/>		
Trailing cable detect SR delay	ms	200
Trigger bus distribution delay	µs	33
Minimum trigger pulse	µs	3
<hr/>		
Interface 1 ... 5 and EXT Ethernet, twisted pair	Mbps	100
Trailing cable Ethernet, twisted pair	Mbps	100
CrashLink®1 Ethernet coax 50 Ω	Mbps	10
<hr/>		
Power distribution		
fuse opens at 20 A after max.	s	5
fuse opens at 10 A after min.	h	4

K3879BQ0x_003-303e-09.17

Technical Data (Continuation)

Type	K3879BQ0x	
Power supply	VDC	20 ... 60
Power consumption	W	20
Power supply EXT ¹⁾	VDC	13,2
Power consumption EXT ¹⁾	W	100
Power supply CL1 ²⁾	VDC	30
Power consumption CL1 ²⁾	W	100
Operating temperature range	°C	0 ... 40
Storage temperature range		
long term	°C	-25 ... 20
short term (<1 week)	°C	-25 ... 50
Humidity, max. (non-cond.)	%	80
Shock resistance, peak ³⁾	g	100
Trigger bus T0 out to T0 out	µs	1,6
Min. T0 out turn on time	µs	2
Min. output trigger pulse	s	2
Min. input trigger pulse	µs	10

- ¹⁾ Only in Type K3879BQ02
- ²⁾ Only in Type K3879BQ01
- ³⁾ Half sine wave for 6 ms in all axes

Application

The default functionality of the KiHUB communication is a typical multiport Ethernet switch. 8 Ethernet ports are enabled. 7 of the 8 ports are assigned to the CrashLink[®]2 bus as twisted pair 10/100BASE-T fast Ethernet. The eighth port is linked to the CrashLink[®]1 plug-in point as COAX 10BASE2 Ethernet terminated with a 50 Ω resistance. A built in CrashLink[®]1 to CrashLink[®]2 bridge function acts as a media converter and allows to operate MINIDAU[®] family devices, nxt32 and DTI devices.

In addition, six galvanically isolated trigger buses are linked together. If a trigger event is detected by one of the trigger buses, a 2 second pulse will be generated to the other buses. The trigger bus concept is part of the CrashLink[®] specification and is realized by a dual channel differential bus providing a start of record trigger channel and a T0 trigger channel.

CrashLink[®] and MINIDAU[®] are registered trademarks of Kistler Holding AG.

Ordering Key

Type K3879BQ	
00	
01	
02	

K3879BQ0x_003-303e-09.17