

Wall Box

Type K3980B

Non-Ruggedized Off-Board Box

The Wall Box Type K3980B is a non-ruggedized wall mounted off-board box to connect the on-board measurement systems via trailing cable with the off-board part. The Wall Box is characterized by the following technical features:

- Power supply with 56 V and up to 450 W output
- Filtering of main supply
- Indication of load status
- 100Base-TX LAN Ethernet interface
- Trigger and sync signal transfer
- Optional trigger interface
- Optional digital interface



Description

The Wall Box is the off-board sided connection for the trailing cable linked to the on-board sided KiHub Type K878A or Type K3789A. In this way a reciprocal link between the distributed measurement systems on-board and off-board sided is established. The external supply voltage to the mains input of the Wall Box can vary in a large range between 85 V AC to 264 V AC. Manual matching by configuration is not necessary. The Wall Box is equipped with a built-in 100 Mbit/s TCP/IP Ethernet switch in order to connect the control room PC directly or rather by LAN to the on-board system via trailing cable and to the optional web-IO for the digital interface.

By the use of the optional web-IO it is possible to control, acquire and monitor switching signal of 2 digital inputs and 2 digital outputs via TCP/IP Ethernet. The Star Point connector offers the possibility to connect the Wall Box to a central trigger distribution unit, e.g. Star Point Type K3981B, in order to transfer a master sync signal and/or a trigger generated in the test bed.

In addition an optional trigger interface is available with

- Trigger inputs for switches and open collector outputs
 - 2 x T0
 - 1 x start of record
- Optoisolated trigger outputs of open collector (max. 48 V/500 mA)
 - 4 x T0
 - 1 x start of record
- 2 x optoisolated sync outputs

The start of record trigger is always bidirectional whereas the T0 trigger can be used in a faster unidirectional mode and requires a second pair of wires.

In the case that no valid master sync signal is available at the Star Point connector, the trigger interface generates a 1 kHz sync signal with a stability of better than 10 ppm. This sync signal is provided at the 2 sync outputs of the trigger interface and the trailing cable connector.

Technical Data

Wall Box

Input power		
AC input voltage range	V	85 ... 264
AC input frequency	Hz	47 ... 63
DC input voltage range	V	120 ... 370
Inrush current	A	40
Max. input current	A	5,7 (115 V) 2,8 (230 V)
Leakage current (230 V 60 Hz)	mA	<0,75
Output power		
DC output voltage	V	56 ±1
Max. output power (full temp. range)	W	450
Max. output power (-25 ... 30 °C)	W	500
Max. output current (full temp. range)	A	8
Max. output current (-25 ... 30 °C)	A	8,9
Efficiency (typ.)	%	90
Overcurrent protection (constant current)	A	10,5
Max. ripple	mV	300
Load regulation	mV	400
Load status display	A	0 ... 10

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Technical Data (Continuation)

Wall Box

Ethernet		
Hub type		Unmanaged switch
Speed	Mbit/s	100
Degree of protection	EN60529	IP50
Environmental conditions		
Storage temperature range	°C	-30 ... 85
Operation temperature range	°C	-25 ... 40
Storage humidity range (non-condensing)	%RH	10 ... 95
Operation humidity range (non-condensing)	%RH	30 ... 90
Size & weight		
Weight	kg	12,3
LxWxH	cm	23x30x40

Digital Interface

Digital input (pull up 4,7 kΩ to 24 V)		
Idle voltage	V	12 ±1,5
Short circuit current	mA	5,0 ±0,5
Threshold voltage	V	8,0 ±1,0
Threshold current	mA	3,0 ±0,5
Threshold resistance	kΩ	2,7 ±0,4
Digital output		
Max. differential input voltage	V	110
Input voltage range against chassis (per pin)	V	±110
Overcurrent protection (fuse protected)	mA	1 000
Max. recommended current	mA	1 000
Max. resistance closed	Ω	0,35
Min. resistance open	MΩ	10

Ordering Key

Type K3980B

Variants

Wall Box CL2 Basic	01
Wall Box CL2 Basic with trigger interface	02
Wall Box CL2 Basic with digital interface	03
Wall Box CL2 Basic with trigger & digital interface	04

Trigger Interface

Input power		
DC input voltage range	V	20 ... 60
Power consumption	W	<3,0
Trigger input (jumpered to 5 V)		
Idle voltage	V	5,3 ±0,4
Short circuit current	mA	41 ±5,0
Threshold voltage	V	1,5 ±0,4
Threshold current	mA	31 ±5,0
Input filter delay	μs	260 ±30,0
Min. pulse width	μs	300
Trigger input (jumpered to 24 V)		
Idle voltage	V	25 ±3,0
Short circuit current	mA	14 ±4,0
Threshold voltage	V	7 ±2,0
Threshold current	mA	7,7 ±2,0
Trigger output		
Max. differential input voltage (TVS diode prot.)	V	48
Input voltage range against chassis (per pin)	V	±48
Overcurrent protection (Polyfuse protected)	mA	1 000
Max. recommended current	mA	500
Max. resistance, closed	Ω	1,5
Max. resistance, open	MΩ	>10
Max. delay @ 500 mA (open to close, 10 Ω to 5 V)	μs	50
Max. delay @ 5 mA (open to close, 1 kΩ to 5 V)	μs	1
Max. voltage @ 500 mA (closed)	mV	900
Max. voltage @ 5 mA (closed)	mV	50
Output capacitance	nF	1,5 ... 2,0
Sync output (RS-485 level, 5 V differential)		
Max. drive current (Polyfuse protected)	mA	150
Max. recommended drive current	mA	50
Time base stability	ppm	<10
Supported frequencies (master sync)	Hz	20, 100, 1 000, 2 000, 5 000
Allowed tolerance of master sync frequency	ppm	250
Fallback frequency if master sync is invalid	Hz	1 000