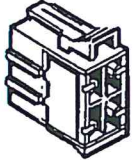


2.1.4 Interface specification

Connector A

Connector contact	Parameters	Values			[Unit]	Remarks
		min.	typ.	max.		
Connector A						
(natural white)						
A1	O	T. 30 constant voltage (relating to A5)				
Battery +	24 V					
	Voltage	20	24	30	V	Short term (max. 1 h)
				32		
	Current		30		mA	"v" standby
				350	mA	Total "v" current
			40		mA	"v + n" standby
				380	mA	Total "v + n" current
	12 V					
	Voltage	10.8	12	15	V	Short term (max. 1 h)
				16		
	Current		50		mA	"v" standby
				400	mA	Total "v" current
			70		mA	"v + n" standby
				500	mA	Total "v + n" current
Fuse			8	A		
Standby definition: no RPM, work status on break time and ignition off						
A2	I	T. 58d (relating to A6, signal input)				
Illumination	Voltage			32	V	
	PWM frequency	150			Hz	24 V / direct current level
		50				12 V / direct current level
A3	O	T. 30 constant voltage (relating to A5)				
Battery + ignition	24 V					
	Voltage	20	24	30	V	Short term (max. 1 h)
				32		
	Current		70		mA	"v" display on
				500	mA	Total "v" current
			80		mA	"v + n" standby
				600	mA	Total "v + n" current
	12 V					
	Voltage	10.8	12	15	V	Short term (max. 1 h)
				16		
	Current		50		mA	"v" display on
				450	mA	Total "v" current
			70		mA	"v + n" standby
				470	mA	Total "v + n" current
Fuse			8	A		
Total current is defined including tray discharge.						

2 Product description/ description of functions

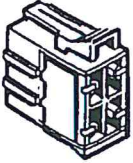
Connector contact	Parameters	Values			[Unit]	Connector A
		min.	typ.	max.		(natural white) 
						Remarks
A4	O					(relating to A7)
CAN_H						Technical description according to ISO/WD 16844
A5	O					T. 31a (relating to A6)
Battery -						
A6	O					T. 31 (relating to A2, A3)
GND						
A7	O					(optional)
CAN_GND						Galvanised / capacitive connection
A8	O					(relating to A7)
CAN_L						Technical description according to ISO/WD 16844

Table 2-1: Interfaces: Connector A (current and CAN bus connection)

Connector B

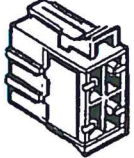
Connector contact	Parameters	Values			[Unit]	Remarks
		min.	typ.	max.		
Connector B km/h MPH (yellow) 						
B1	O					KITAS 2170/ 2171 reference
	Voltage	6.5		9	V	
B2	O					T. 31, minus internal bridge with A5
B3	I					KITAS 2170/ 2171 reference
"v" signal (real time)	Voltage	Low High		1.0 8.0	V	I = -250 µA I = -150 µA
B4						KITAS 2170/ 2171 reference Bi-directional data signal
I	Voltage	Low High		1.2	V	I = -1 mA I = -0.5 mA
O	Voltage	Low High		1.0	V	I = 1 mA I = -20 µA
	Baud rate	1164		1236	Bd	
B6	O					Standard (cf. definition of B7) or customised
"v" pulse						
B7	O					Instrument interface/ K-Line (relating to A6)
"v" pulse	Voltage	Low High		1.5	V	I = 1 mA I = -1 mA
	Frequency			1.5	kHz	
	Pulse length	0.64		4	ms	±1%
	Tachograph constant	4000		25000	imp/km	
B8	O					
4 imp/m	Voltage	Low High		1.5	V	I = 1 mA I = -1 mA
	Frequency			244	Hz	v = 220 km/h
	Pulse length	1.6		4	ms	

Table 2-2: Interfaces: Connector B "km/h MPH"

Connector C

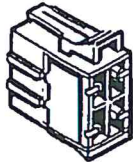
Connector contact	Parameters	Values			[Unit]	Remarks
		min.	typ.	max.		
Connector C rev/min RPM (red) 						
C2	O					
GND						T. 31, minus internal bridge with A6
C3	I					"n" signal input (relating to C2)
T. W	Voltage	Low		2.0	V	Alternating current generator
		High	3.5	40		
	Current			15	mA	
	Frequency			4	kHz	
	Pulse length		125		ms	
	RPM constant		2000	64000	imp/1000revs/min	

Table 2-3: Interfaces: Connector C "revs/min RPM" (optional)

Connector D

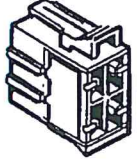
Connector contact	Parameters		Values			[Unit]	Remarks
			min.	typ.	max.		
Connector D ZuE (brown) 							
D1	O						Additional stylus 1 (relating to A6)
Status input 1	Voltage	Low	8		2	V	
		High			32		
D2	O						Additional stylus 2 (relating to A6)
Status input 2	Voltage	Low	8		2	V	
		High			32		
D4	O						Instrument interface (relating to A6)
General warning signal	Voltage	Low		1.5		V	I = 5 mA
		High					
	Current			20		mA	Lower current limit (open collector)
D6	O						Instrument interface (see definition of B7)
"v" pulse							
D7	I/O						Instrument interface/ K-LINE (relating to A6)
Data transmission							Technical description according to ISO 14230 Part 1
D8	I/O						Info-Interface (optional) (relating to A5)
Data transmission	Voltage	Low	5.5		1.5	V	I = 1 mA
		High				V	I = -1 mA

Table 2-4: Interfaces: Connector D ZuE, especially input / output stages (optional)