

# CON/KAD/010

Mating connector for KAD/TDC/102 and KAD/TDC/107 (DD, 52-way, 3 built-in temperature sensors)

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## Overview

The CON/KAD/010 is a Double-Density (DD) connector for use with KAD/TDC/107 and KAD/TDC/102 modules.

The part is supplied as a connector shell (with integral insulator), and a bag containing a minimum of 33 crimp pins (size 22 AWG), which may be inserted into the connector shell. It is part of the ACD/CJB/002 kit which is delivered with KAD/TDC/107 modules and the ACD/CJB/003 kit which is delivered with KAD/TDC/102 modules. The CON/KAD/010 is also part of the ACD/CJB/004 kit, which is an alternative kit for the KAD/TDC/102.

The CON/KAD/010 has three built-in PT100 temperature sensors for accurate measurement of thermocouple cold junction temperature, as close as possible to real junction. The sensors used are 1/3 of class B, DIN/IEC 60751 specification ( $\pm 0.1 \pm 0.00166 \times t$ ) [°C]. In a typical operational range of -40 to 85°C these sensors are more accurate than  $\pm 0.24^\circ\text{C}$ , with typical accuracy being around  $0.1^\circ\text{C}$ .



### Key Features

- Nickel-plated connector shell
- Three built-in PT100 sensors (typical accuracy of  $\pm 0.1^\circ\text{C}$ )
- Includes crimp pins and mating screws

### Applications

- Cold junction reference for KAD/TDC/107 and KAD/TDC/102 modules

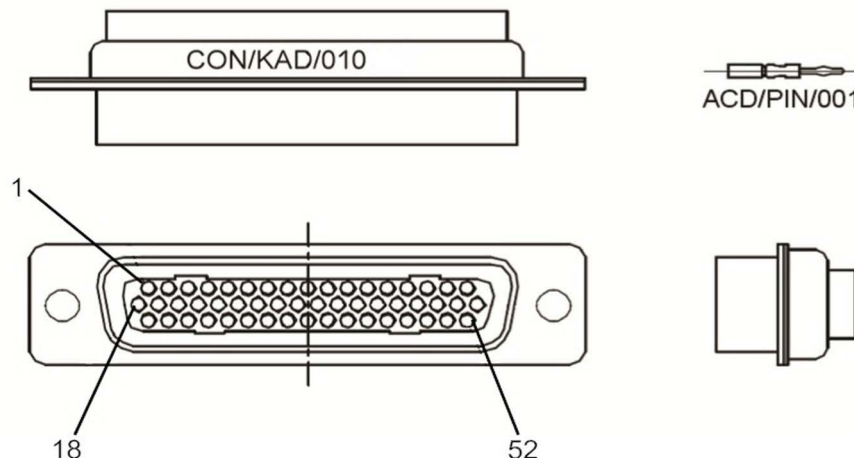


Figure 1: CON/KAD/010 plan, elevation and front view

## Specifications

TABLE 1		Mechanical specifications				
PARAMETER	MIN.	TYP.	MAX.	UNITS	CONDITION/DETAILS	
Mass						
connector, screw and clip	–	10	–	g		
connector, screw and clip	–	0.35	–	oz	Design metric is grams.	
Dimensions						
connector height	–	14	–	mm		
connector height	–	0.5	–	inch	Design metric is grams.	
connector length	–	53	–	mm		
connector length	–	2.1	–	inch		
connector width	–	12.8	–	mm		
connector width	–	0.5	–	inch		
screw length	–	3.5	–	mm	Length of threaded insert.	
screw length	–	0.14	–	inch	Length of threaded insert.	
width of clip	–	5.0	–	mm		
width of clip	–	0.2	–	inch		
Chassis clearance						
connector height	–	22	–	mm		
connector height	–	0.86	–	inch		
bend radius height	–	52	–	mm	Without backshell attached. If a backshell is attached, see the respective backshell data sheet for more information.	
bend radius height	–	2.05	–	inch		
Finish						
connector	–	–	–	–	Nickel-plated steel.	
screw	–	–	–	–	Stainless steel.	
clip	–	–	–	–	Stainless steel.	
integral isolator housing	–	–	–	–	Nylon.	
pins	–	–	–	–	Copper alloy with 1.2 µm gold plating. Crimp pins accommodate cable size 22 - 26 AWG.	
retaining clips	–	–	–	–	Stainless steel.	

## Getting the most from the CON/KAD/010

This mating connector is only for use with the KAD/TDC/107 and KAD/TDC/102 modules. It is supplied with loose pin contacts. For instructions on how to insert these pins for the KAD/TDC/102, see the *KIT/001* data sheet in the *Acra KAM-500 Databook*. For KAD/TDC/107 assembly instructions, see the *Cable assembly using ACD/CJB/002 reference junction block* technical note.

When mating and un-mating DD connectors, jackscrews should be screwed/unscrewed by half a turn alternately on each side until the connectors are fully mated/un-mated. Failure to mate/un-mate the connectors in this manner may result in deformation of the module top connector, which can reduce the reliability of the electrical contact of the connector/module with face.

Built-in PT100 sensors are configured so they can operate in four-wire resistance measurement mode, with sensing of dropout voltage at the sensor, so any wire and contact resistances are compensated and do not introduce error. For KAD/TDC/107 and KAD/TDC/102 modules, each sensor operates with a constant current source of 1 mA (typically) in ratiometric mode. Current excitations are connected to pins 18, 24 and 30 and current returns are connected to pins 23, 29 and 35. Positive and negative sense lines are at pin positions 19, 22, and 25; and at 28, 31 and 34 respectively for each temperature sensor.

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**WARNING:** It is recommended that pins are only inserted once into each pin location of the connector. A reinsertion of any pin into a location where a pin has been removed may result in a loose pin.

## Ordering information

PART NUMBER	DESCRIPTION
CON/KAD/010	Mating connector for KAD/TDC/102 and KAD/TDC/107 (DD, 52-way, 3 built-in temperature sensors)

## Revision history

REVISION	DIFFERENCES	STATUS
CON/KAD/010	First release	Recommended for new programs

## Related products

MODULE	DETAILS
ACD/CJB/002	Cold junction block for KAD/TDC/107 (built in sensors, straight-through heavy thermal mass backshell) - 12ch
ACD/CJB/003	Cold junction block for KAD/TDC/102 (built in sensors, straight-through backshell) - 15ch
ACD/CJB/004	Reference junction block for the KAD/TDC/102 with a 20° backshell

## Related documentation

DOCUMENT	DETAILS
DOC/DBK/001	Acra KAM-500 Databook
DOC/GBK/002	Environmental Qualification Handbook
DOC/MAN/018	KSM-500 Databook
TEC/NOT/059	Cable assembly using ACD/CJB/002 reference junction block