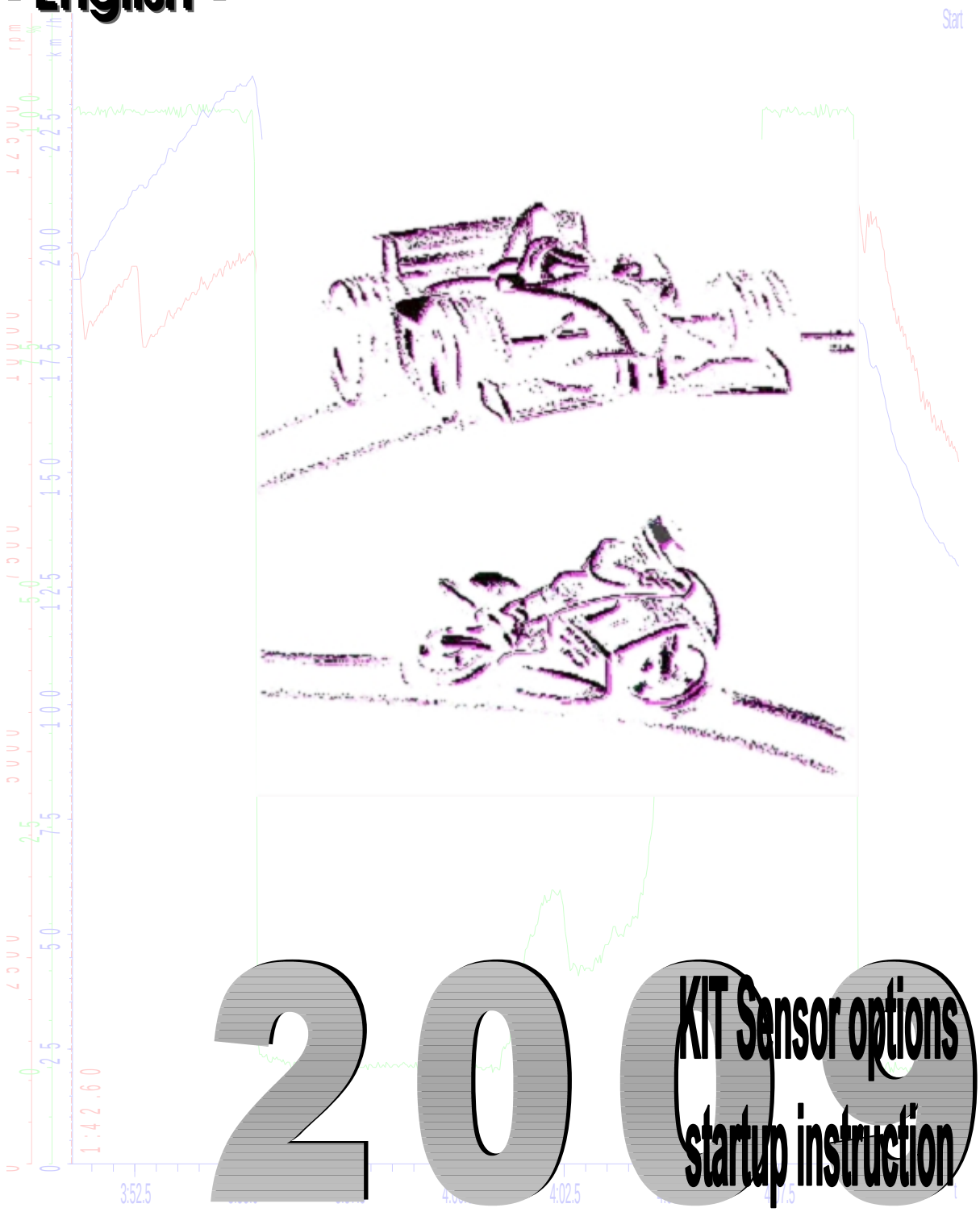
2D KIT System

www.2d-kit-system.com

- English -



2009

KIT Sensor options startup instruction

Art.No.: AC-DOC_SY-KIT-SensorOptions_08-000 modified 01.04.2009

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Preface

This documentation contains the necessary information to setup and to work with the 2D kit system.

In order to achieve the optimum result when working with the 2D-Kit System, we recommend to read the instructions carefully and follow them step by step.

Symbols used in the text

In the paragraphs highlighted with this symbol, you will find tips and practical advice to work with the 2D-Kit System.

In the paragraphs highlighted with this symbol, you will find additional information and it is very important that you follow the instructions given.

Documentation reference

ð The user get an unique item number for an user manual to find further assistance

Additional information about manuals, datasheets, software updates or new calculation files can be downloaded from our homepage. The specific download area for the Kit system can be found at: http://www.2d-kit-system.com (=>See Downloads)

Basic Kit

Sensor options

A/F (lambda) add-on Kit (4-stroke) with 1CH or 2CH

Deto add-on Kit (2-stroke)

Possible Updates

Kit software user manual (delivered with the CD: SW-CD RaceKIT)

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1. Basic information of all modules and their features

SY-KITSusp_Bike-000: KIT suspension sensor add on:
This sensor package expands the system for full chassis recording so good balance and drivability are no longer miracles. This sensor Kit comes with a 150mm and 75mm high end suspension travel sensor. This sensor kit allows to analysing suspension travel and damper speed to set up your bike suspension.

SY-KITPBrake-000: KIT brake pressure add on:
Very small and lightweight 100 bar pressure sensor to measure front brake usage. The Sensor comes with an adapter for easy fitting to the bike brake system. For proper suspension setup, the brake pressure sensor is a MUST, as braking influences the front fork setting most.

SY-KITSens_race-000: KIT sensor add on:
Special Sensor package for racing application.
Unlike the KITSusp_Bike and KITPBrake equivalents the sensors are not connected directly to the data logger but to a small, separate connection box. Connection and exchange of sensors is simplified.
This package includes a 150mm and a 75mm high-end suspension travel sensor, 1 small and lightweight brake pressure sensor and a Box mini for the connection. This sensor kit allows analyzing suspension travel, damper speed and brake pressure to set up your bike suspension more properly.

SY-KIT_LR05-000: KIT Laptime Receiver:
For higher precission in Laptime compared to the GPS Laptimeing the IR Laptrigger receiver is available. This receiver will provide 0.0025 sec accuracy in Laptime.

AC-DOC_SY-KIT_IR-Laptriggerset-000

AC-KIT_LT05-000: Laptrigger transmitter KIT System:
One IR Transmitter is needed on the Pit wall if you use the IR Laptrigger receiver.
Only one IR Transmitter is needed per Racetrack.

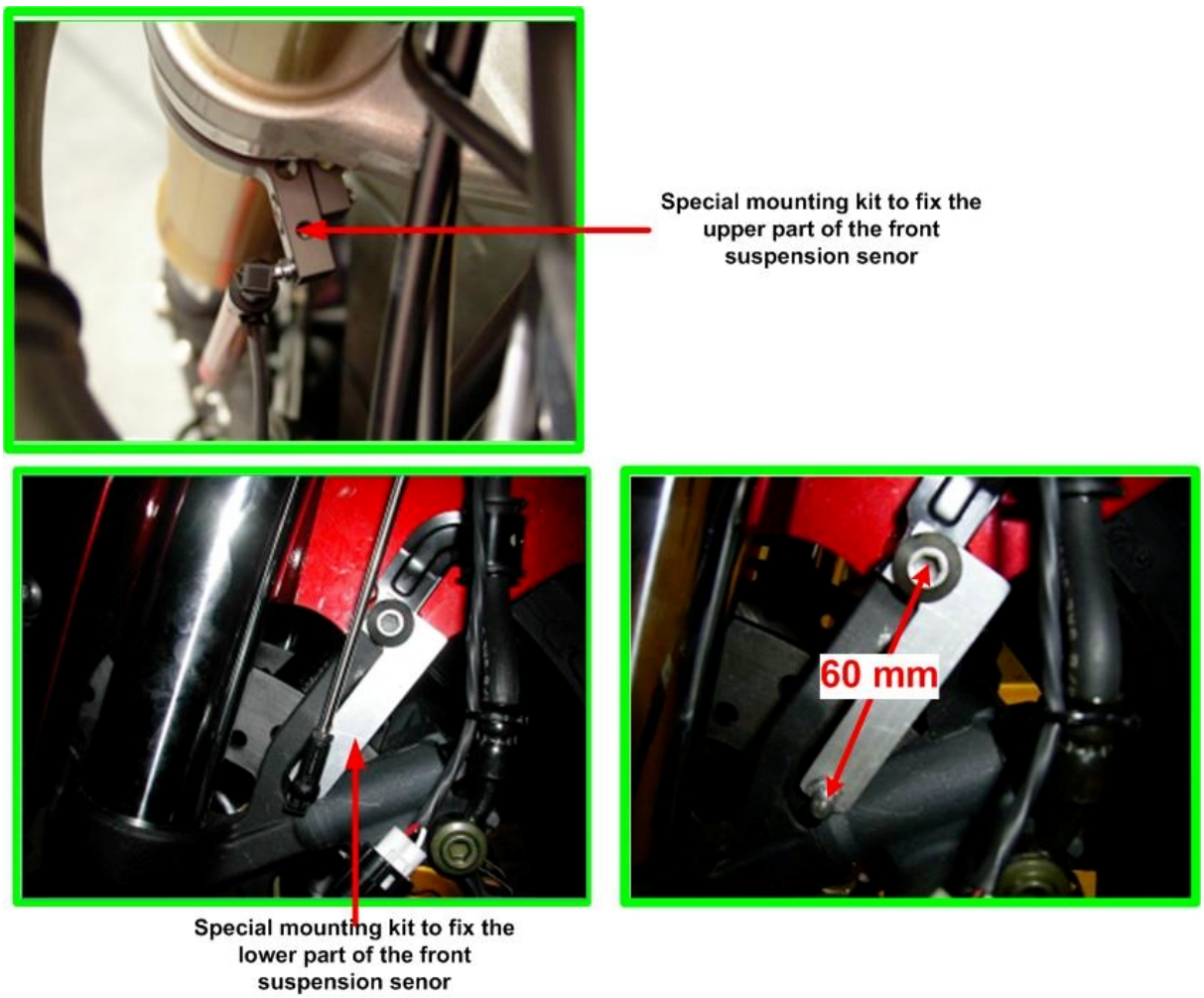
AC-DOC_SY-KIT_IR-Laptriggerset-000

2. Available sensor options

2.1 Mounting the different sensors

2.1.1 Mounting the front suspension sensor

The potentiometer has to be fitted parallel to the tubes of the fork to give correct values. The maximum measure range of the used sensor must be equal or even longer than your maximum suspension travel (150mm range is usual for front fork).



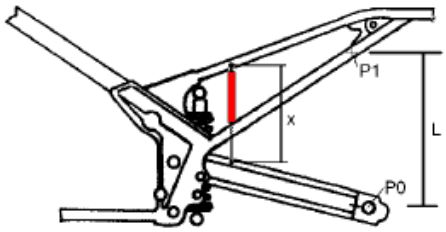
The picture above shows a clamp which is designed as a folding ring and offers an easy and parallel sensor support mounting.

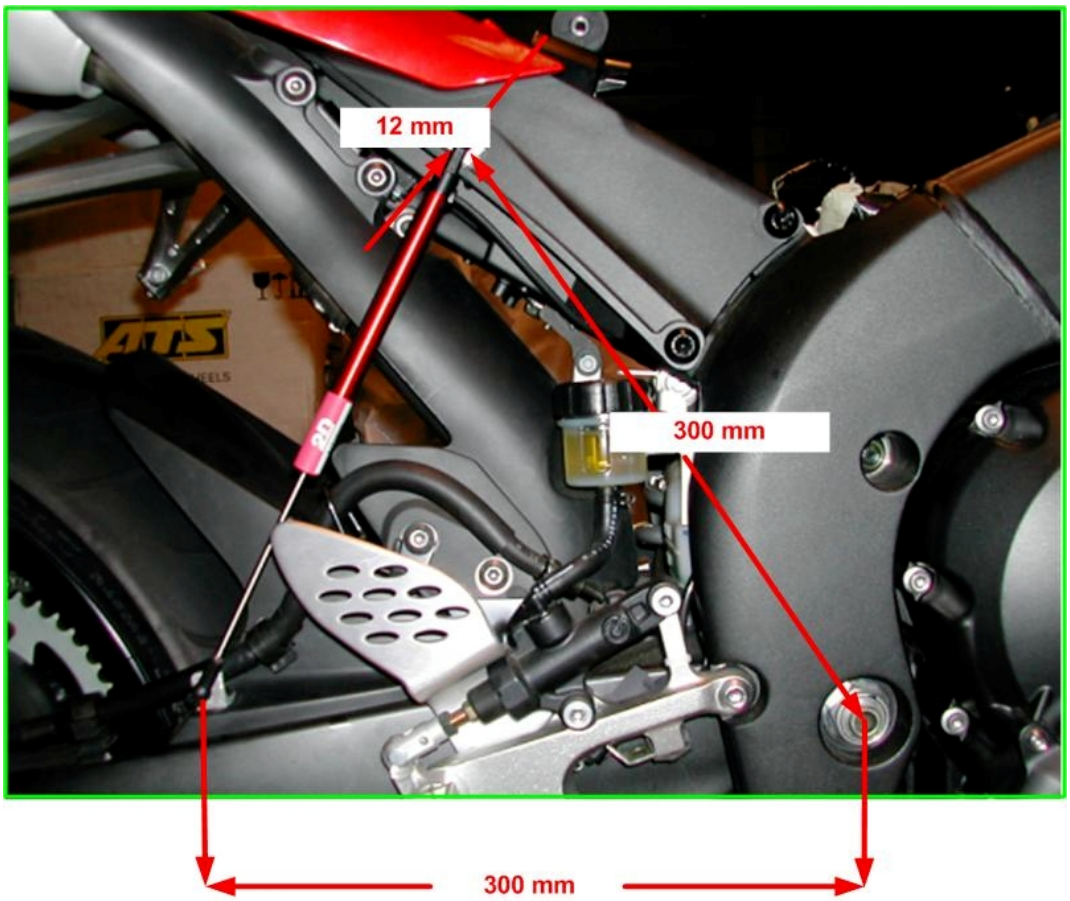
Please check **very** carefully that neither the sensor nor the supports will limit the steering angle or might get caught by any cable or line or damage them !!

2.1.2 Mounting the rear suspension sensor

To measure the suspension travel of the rear wing in some cases (for example R6) it is impossible to mount the sensor directly parallel to the (standard) shock. So you have to put it somewhere between the rear frame and the wing. This causes big differences of usable sensor measure length depending on the location of the of mounting. (50 mm or 75mm will work in most cases)

To avoid water entering the housing, please mount the grinder bar down below !



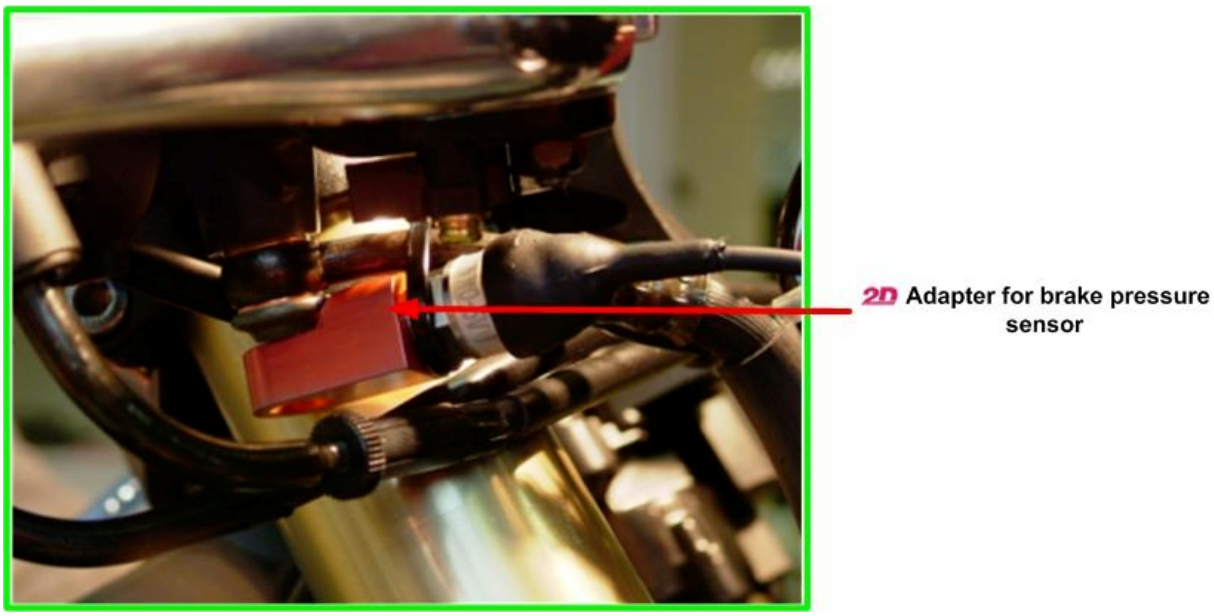


View of the rear suspension sensor (linear potentiometer 75mm), example mounted at a Yamaha R1

Also in this case please check **very** carefully that neither the sensor nor the supports touch any moving parts or might block them. Check for maximal and minimal travel !

2.1.3 Mounting the brake pressure sensor

The picture below shows a possibility to fix the pressure sensor to the brake line system. For this a special mounting kit is included in the sensor add-on kit, which fixes the pressure sensor with a double hollow screw to the main brake cylinder.



2.2 Connecting the different sensors

2.2.1 Connecting the front suspension sensor

The wires of both suspension sensors are delivered by 2D with the “Tyco contact” pins already crimped. Just insert the individual contacts into the 34pin AMP connector. The following table gives you the correct positions for the pins.

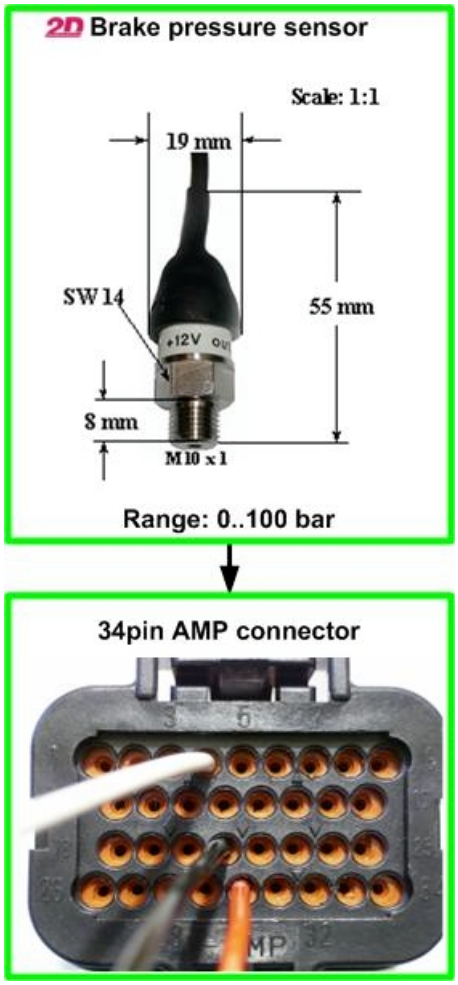
Technical information	Interface unit (34pin AMP connector)	
Cable length:	600mm (isolated) + 40mm (stripped PUR-cable)	
Crimp contacts:	“Tyco crimp contacts”	
Susp_Front (white)	**Pin 10**	>> see appendix
AGND (black)	**Pin 18**	>> see appendix
+5V (red)	**Pin 26**	>> see appendix

2.2.2 Connecting the rear suspension sensor

Technical information	Interface unit (34pin AMP connector)	
Cable length:	1200mm (isolated) + 40mm (stripped PUR-cable)	
Crimp contacts:	“Tyco crimp contacts”	
Susp_Rear (white)	**Pin 11**	>> see appendix
AGND (black)	**Pin 19**	>> see appendix
+5V (red)	**Pin 27**	>> see appendix

2.2.3 Connecting the brake pressure sensor

The wires of the brake pressure sensor are delivered from 2D with the “Tyco contact pins” already crimped. Just insert the individual contacts into the 34pin AMP connector. The following table gives you the correct positions for the pins.

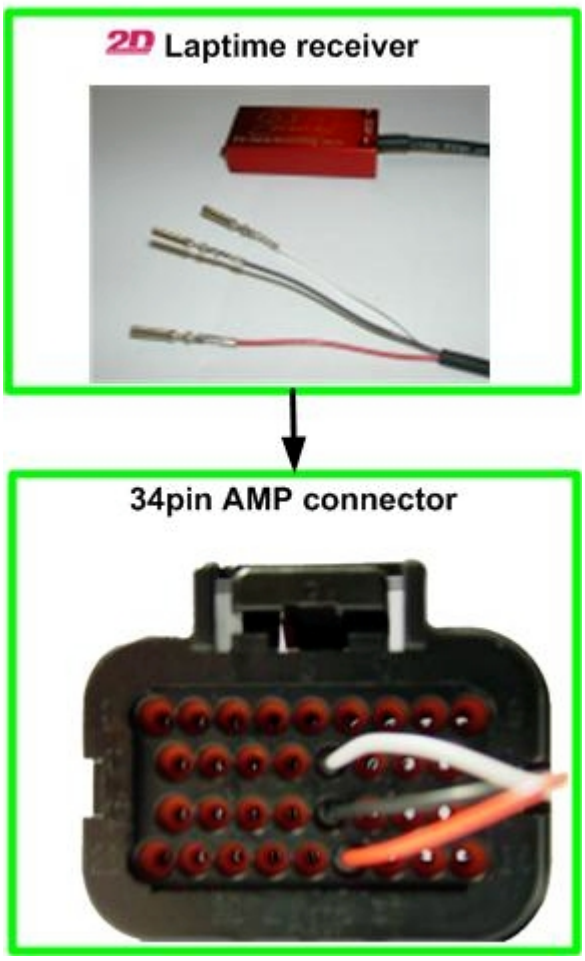


Technical information	Interface unit (34pin AMP connector)
Cable length:	500mm (isolated) + 40mm (stripped PUR-cable)
Crimp contacts:	“Tyco crimp contacts”
Brake pressure (white)	**Pin 4** >> see appendix
AGND (black)	**Pin 21** >> see appendix
+12V (red)	**Pin 30** >> see appendix

2.2.4 Connecting the 2D Laptime receiver

The wires of the laptime receiver are delivered by 2D with the “Tyco contact pins” already crimped. Just insert the individual contacts into the 34pin AMP connector. The following table gives you the correct positions for the pins.

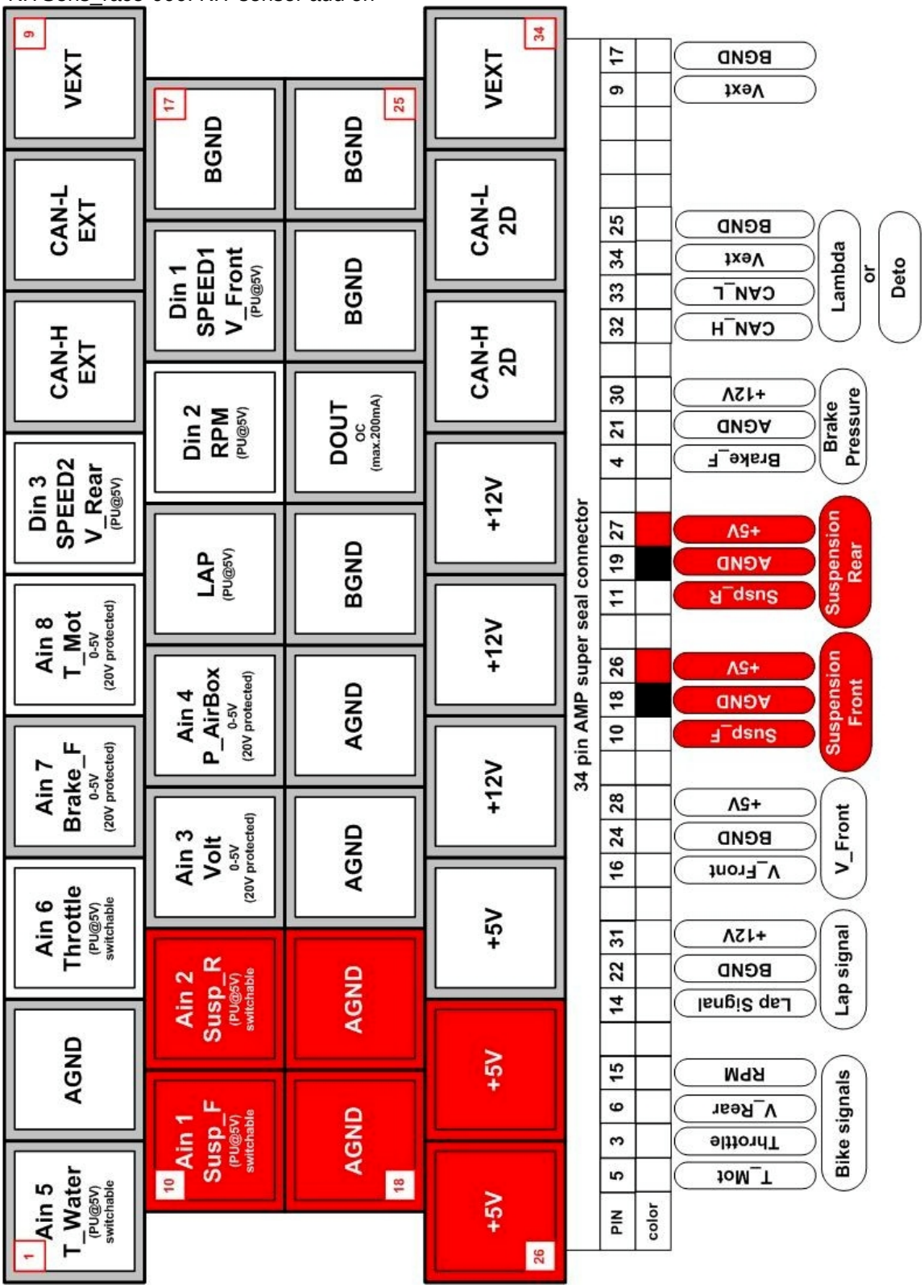
Technical information	**Interface unit (34pin AMP connector)**
Cable length:	500mm (isolated) + 40mm (stripped PUR-cable)
Crimp contacts:	“Tyco crimp contacts”
Signal (white)	**Pin 14** >> see appendix
DGND (black)	**Pin 22** >> see appendix
+12V (red)	**Pin 31** >> see appendix



You will get a start-up reference for the IR laptrigger set (transmitter + receiver) at the 2D KIT system website located in the download area. Take a look at
AC-DOC_SY-KIT_IR-Laptriggerset-000

Required for:

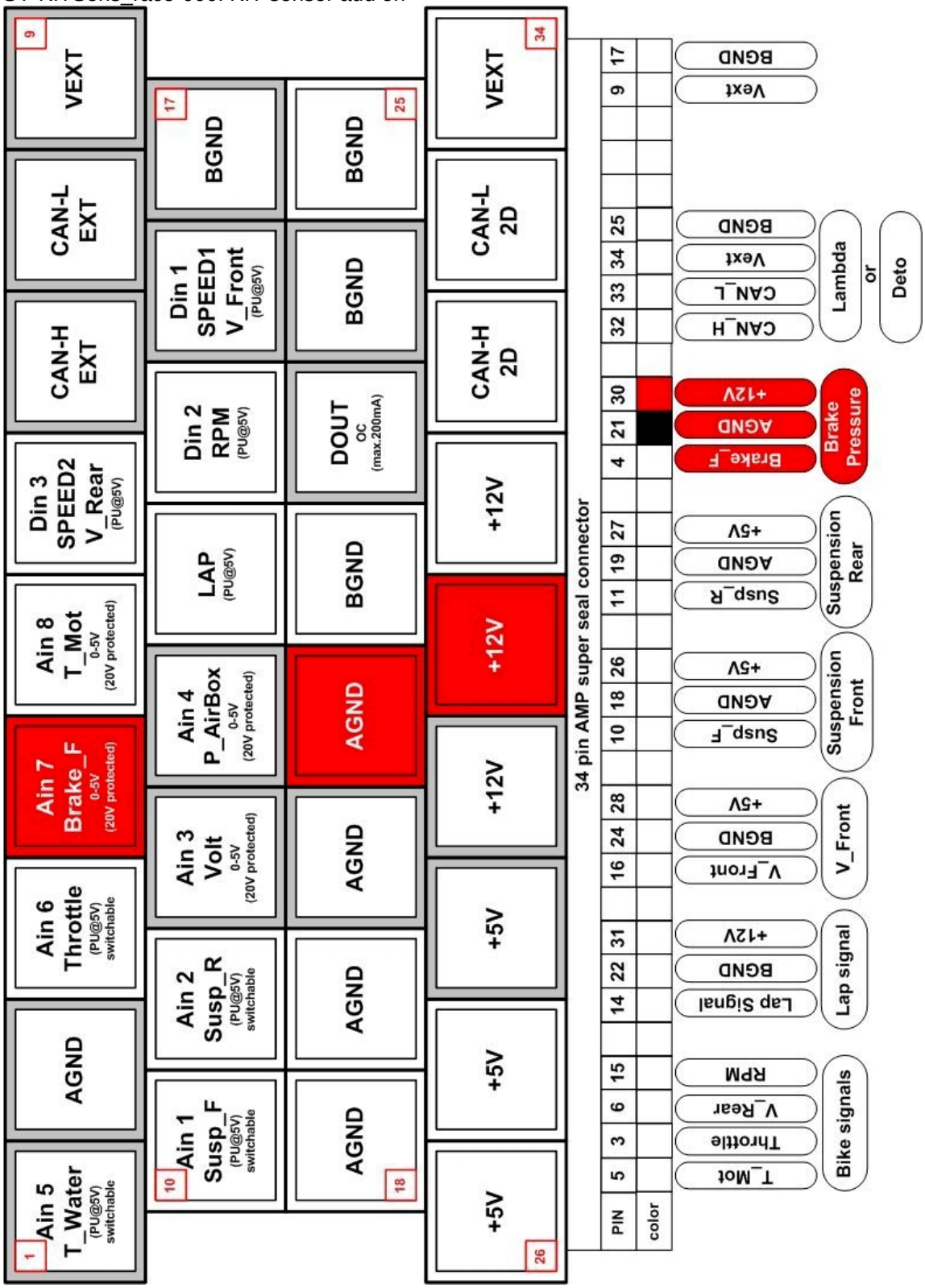
SY-KITSusp_Bike-000: KIT suspension sensor add on
SY-KITSens_race-000: KIT sensor add on

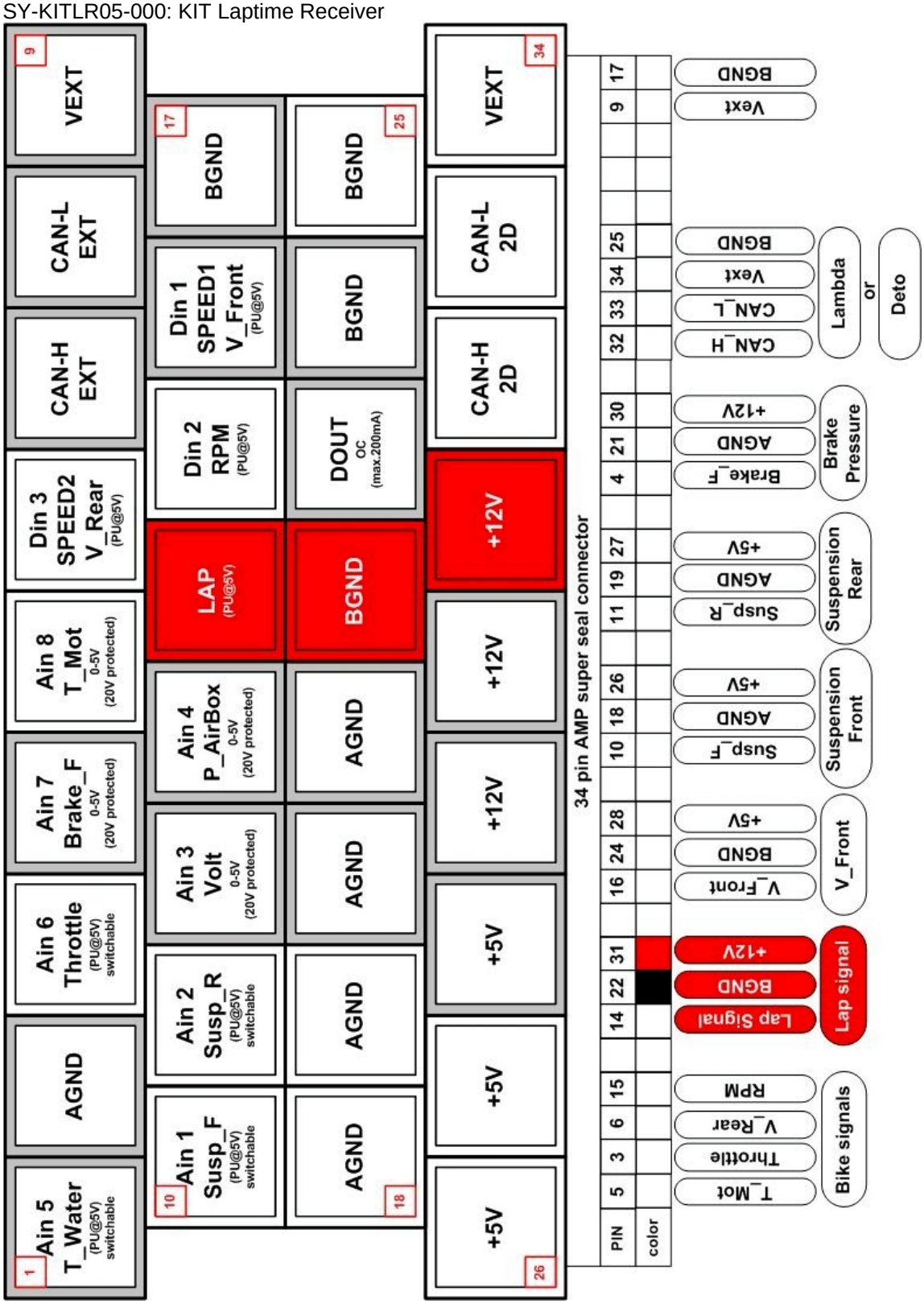


Required for:

SY-KITPBrake-000 : KIT brake pressure sensor add on

SY-KITSens_race-000: KIT sensor add on



Required for:

SY-KITLR05-000: KIT Laptime Receiver