

EVO3 Pro/Pista

User manual



Dear Customer,

EVO3 Pro/Pista belongs to the last generation of AIM data loggers for car/bike installations: a powerful, compact, reliable and expandable system.

EVO3 is available in two versions: Pista and Pro, with different memory dimensions, different number of channels and different hardware.

EVO3 Pro/Pista monitors RPM, speed, engaged gear number, lap (split) times and custom sensors. Moreover, thanks to the bi-axial integrated accelerometer it is possible to create track maps.

All EVO3 kits come with infrared receiver and transmitter.

Expandable thanks to ECT – AIM Easy Connection Technology – **EVO3 Pro/Pista** connects via CAN bus to the wide range of (optional) external expansion modules in a click. Compatible expansions are:

GPS Module: to compare data and position on the track with GPS technology precision.

LCU-ONE Lambda Controller: the best solution to keep under control the engine stoichiometric ratio.

USB MemoryKey: a simple and quick way to backup data.

Sampled data can also be visualized connecting **EVO3 Pro/Pista** to one of AIM high technology displays (**TG Dash**, **MyChron3 Dash**, **Volante Formula**), keeping all under control in a glance.

Last but not least, **EVO3 Pro/Pista** includes the powerful AIM **Race Studio 2** software, to control and configure the system so to download and analyze their data through the USB port.

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Chapter 1 – EVO3: versions, kits and part number

EVO3 is available in two versions: Pista and Pro, with different kits and part numbers. Thanks to the wide range of optional it fits any need.

1.1 – Available versions

EVO3 versions – **Pro** and **Pista** – have different characteristics.

1.1.1 – EVO3 Pro



EVO3 Pro has this characteristics:

- Internal Memory: 16Mb
- Analog channels: 12
- Speed digital inputs: 4
- Connectors: 2 Deutsch Professional Autosport

1.1.2 – EVO3 Pista



EVO3 Pista has this characteristics:

- Internal Memory: 8Mb
- Analog channels: 8
- Speed digital input: 1
- Connectors: 2 AMP + 2 Binder (5 pin female for connection with the external expansions and 4 pin female for infrared receiver connection)

1.2 – Kits and part number



EVO3 Pro standard kit (part number X20EVO3PRO) includes:

- EVO3 Pro (1);
- 1 speed sensor (2) to be chosen among:
 - car with 2m extension cable
 - bike (in the above image)
 - Contrinex with 1m extension cable
- 2 temperature (3) sensors to be chosen among:
 - M5 water thermo resistor with 150 cm extension cable (in the above image)
 - Rotax thermo resistor with 150 cm extension cable
 - Exhaust gas Thermocouple with 150 cm compensated extension cable
 - Water thermocouple with 150 cm compensated extension cable
- 1 – 37 pins Autosport Professional female Deutsch connector (4)
- 1 – 22 pins Autosport Professional female Deutsch connector (5)
- Infrared transmitter with external power cable (6)
- Infrared receiver (7)
- USB cable for PC connection and data download (8)
- **Race Studio 2** software CD and **EVO3 Pro** technical documentation (9)

EVO3 Pro optional are:

- wiring for 37 pins Deutsch connector – part number: **V02549530A**;
- wiring for 22 pins Deutsch connector – part number: **V02549500**;
- **TG Dash** display – part number **X45VDAM01**
- **MyChron3 Dash** display – part number **X30VDAM01**
- **Formula Steering wheel** display – part number **V07VOLFORM**

It is also possible to buy an **EVO3 Pro kit with Formula steering wheel included**. In this case the kit part number is: **X07VOLFORSGPR**.

Warning: there are two available versions of EVO3 Pro optional wiring for 22 pins Deutsch connector; one labelled V02549530A and a previous one labelled V02549530. Their difference is in pin 22 of the Deutsch connector that in the new version is cabled with +VB ext on the CAN connector (pin 5). See technical drawings in appendix “B” for further information.



EVO3 Pista standard kit (part number X20EVO3PISTA) includes:

- EVO3 Pista (1);
- 1 speed sensor (2) to be chosen among:
 - car with 2m extension cable
 - bike (in the above image)
 - Contrinex with 1m extension cable
- 2 temperature sensor (3) to be chosen among:
 - M5 water thermo resistor M5 with 150 cm extension cable (above image)
 - Rotax thermo resistor with 150 cm extension cable
 - exhaust gas thermocouple with 150 cm compensated extension cable
 - water thermocouple with 150 cm compensated extension cable
- standard cable (4)
- infrared transmitter with external power (5) and infrared receiver (6)
- USB cable for PC connection and data download (7)
- **Race Studio 2** software CD and **EVO3 Pista** technical documentation (8)

EVO3 Pista optional are:

- **TG Dash** display – part number **X45VDAM01**
- **MyChron3 Dash** display – part number **X30VDAM01**
- **Formula Steering wheel** display – part number **V07VOLFORM**

It is also possible to buy an **EVO3 Pista kit with Formula steering wheel included**. In this case the kit part number is: **X07VOLFORSGPI**.

1.3 – EVO3 Pro/Pista expansions

- | | |
|-----------------------------------|---------------------|
| • Channel expansion: | X08CHEXUC |
| • Data Hub with 40 cm cable: | X08HUB010 |
| • Data Hub with 150 cm cable: | X08HUB150 |
| • LCU-ONE CAN: | X08LCU03K0 |
| • LCU-ONE CAN+Analog: | X08LCUKAOCRS |
| • GPS05 Module with 130 cm cable: | X40GPS5B130 |
| • GPS05 Module with 400 cm cable: | X40GPS5B400 |
| • TC Hub (CAN): | X08UTCCTC |

Warning: when connecting EVO3Pro/Pista to any external expansion modules ensure that both devices are OFF.

Chapter 2 – EVO3 Pro/Pista: the channels

EVO3 Pro/Pista have different analog and digital channels. Some of them are already configured while others are freely configurable according on the sensor that is connected them. See **Race Studio Configuration** user manual – that can be freely downloaded from download area, software section of www.aim-sportline.com website – for information on configurable channels settings.

2.1 – The speed channel

EVO3 Pro/Pista have respectively 4 and 1 speed channels.

2.1.1 – EVO3 Pro speed channels

To sample the 4 speed corresponding to **EVO3 Pro** speed channels connect:

- the speed sensor to cable labelled “**Speed 1**” and ending with a 4 pins Binder 719 female connector of **EVO3 Pro** 37 pins Deutsch connector;
- the speed sensor to cable labelled “**Speed 2**” and ending with a 4 pins Binder 719 female connector of **EVO3 Pro** 37 pins Deutsch connector;
- the speed sensor to cable labelled “**Speed 3**” and ending with a 4 pins Binder 719 female connector of **EVO3 Pro** 22 pins Deutsch connector;
- the speed sensor to cable labelled “**Speed 4**” and ending with a 4 pins Binder 719 female connector of **EVO3 Pro** 22 pins Deutsch connector;

AIM standard wiring for 37 and 22 pins Deutsch connector are already labelled. Refer to the appendixes technical drawings for further information concerning **EVO3 Pro** wirings.

2.2.2 – EVO3 Pista speed channel

To sample **EVO3 Pista** speed channel connect the speed sensor to the cable labelled “**Speed**” and ending with 4 pins Binder 712 female connector of **EVO3 Pista** standard wiring;

AIM standard wiring is already labelled. Refer to the appendixes technical drawings for further information concerning **EVO3 Pista** wiring.

2.2 – The RPM channel

RPM signal can be sampled in a lot of different ways:

- from the ECU via CAN bus or RS232;
- from the ECU through a square wave signal (from 8 to 50V);
- from the coil: RPM low voltage input (from 150 to 400V);
- from the spark plug: converting RPM signal sampled from the spark plug in a square wave signal.

2.2.1 – Sampling RPM via the CAN bus/RS232

To sample the RPM signal via CAN bus or RS232, refer to paragraph 2.4.

2.2.2 – Sampling the RPM from the ECU through a square wave signal (EVO3 Pro)

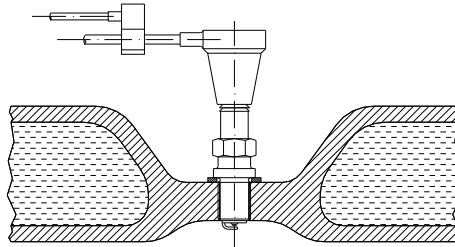
To sample the RPM from the ECU through a square wave signal (from 8 to 50V) connect pin 12 of 37 pins Deutsch connector (bleu cable) to ECU RPM output (if present). This sampling way is only available on **EVO3 Pro**.

2.2.3 – Sampling the RPM from the coil: RPM low voltage input

To sample RPM signal from the coil on a low voltage RPM input (from 150 to 400V) connect pin 13 of 37 pins Deutsch connector (white cable) to the ECU coil input.

2.2.4 – Sampling the RPM from the spark plug

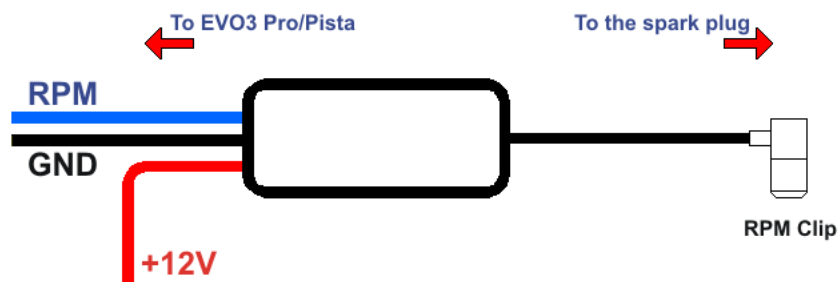
To sample the RPM from the spark plug an AIM ARP-05 adaptor is needed (part number **X10ADRPM000**) to be installed as shown here below.



Installation steps are:

- connect **RPM clip** to the spark plug;
- connect the black cable labelled **GND** to pin **GND** of the logger;
- connect the red cable labelled “+12V” to the positive pole (+) of the vehicle battery: battery voltage has to be **12V**;
- connect the blu cable labelled “RPM” to **EVO3 Pro/Pista** RPM (8-15V) input.

The image here below shows a drawing of RPM adapter – top view.



2.3 – The lap channel

To sample the lap time connect the infrared receiver included in the kit:

- to cable labelled “Lap” ending with a 4 pins Binder 712 female connector of 37 pins Deutsch connector wiring of **EVO3 Pro**;
- to 4 pins Binder 712 female connector placed right on the front of **EVO3 Pista** and highlighted in the image here below.

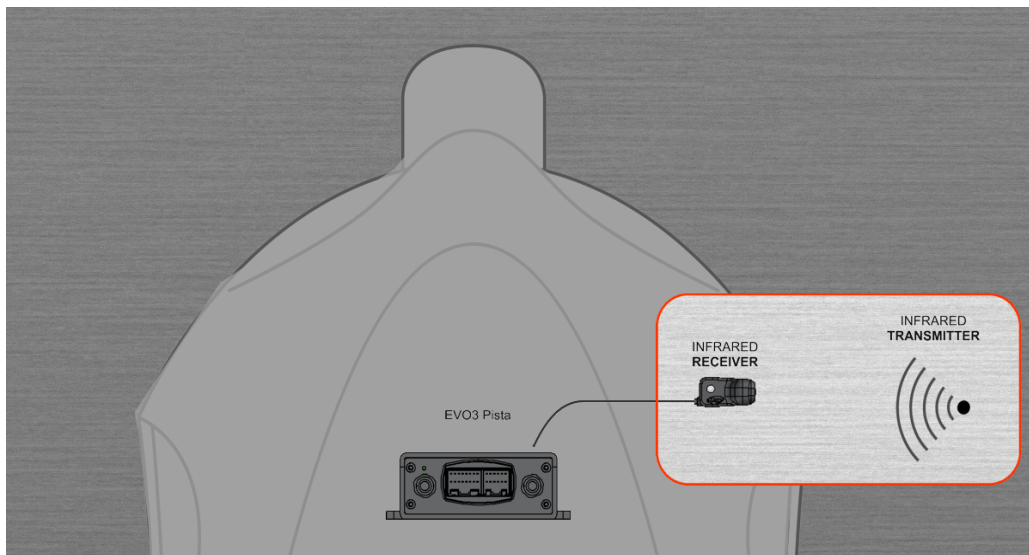


2.3.1 – How to install and power the infrared receiver

The infrared receiver has to “see” the transmitter placed on the side of the circuit. Install it with the eye pointed to the transmitter. In the image here below the receiver eye is highlighted.



Be sure that the receiver has a straight line with the transmitter on the correct side of the vehicle as shown here below.



The transmitter is powered by the logger.

2.3.2 – How to install and power the lap transmitter

AIM produces an infrared lap transmitter shown here below.



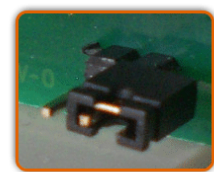
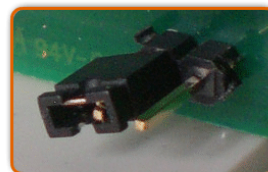
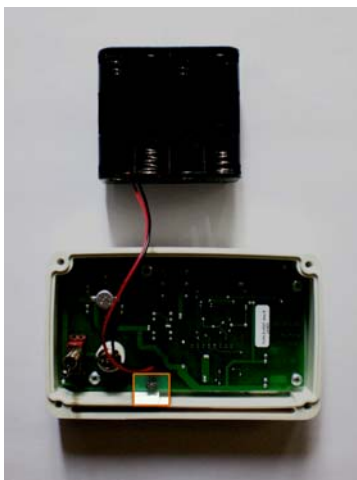
The transmitter can be internally or externally powered:

- internally: with 8 AA batteries (placed in the transmitter case); when the batteries are flat Power led starts blinking each second (1 Hz);
- externally: with a 12V power cable; when the battery is flat Power led starts blinking each second.

The transmitter has two working ways:

- Low power mode: for tracks less than 10m (30ft) wide;
- High Power mode: for tracks more than 10m (30ft) wide; in this second case external 12V power is needed and both led switches on when the transmitter is powered on.

To activate High/Low power mode it is necessary to open the transmitter as shown here below on the left.



The images here below on the right shows the possible working options. When bought the transmitter is set on low power mode: images top on the right. To set high power mode insert both clips in the jumper as shown in the image bottom on the right.

WARNING: verify the number of transmitters installed on the circuit before installing one's own. It is in fact possible that there are other transmitter additional to the one placed on the start/finish line. The simplest way to record correct lap times is using one only transmitter for all drivers.

Use "Obscuring time" function (set through via software configuration) to ensure that **EVO3 Pro/Pista** reads only the wished transmitter(s).

Refer to **Race Studio Configuration** user manual for further information concerning the system configuration.

2.4 – ECU connection

EVO3 Pro/Pista can sample data out coming from the vehicle ECU using the CAN/RS232 cable, that comes with the kit.

To know if the vehicle ECU is or not supported by AIM loggers and for further and updated information concerning AIM loggers refer to download area, ECU connection section of www.aim-sportline.com.

Always refer to the ECU user manual to know its pinout and cable connections.

2.4.1 – How to connect EVO3 Pro to the ECU

The connection is made through the 22 pins Deutsch connector.

Using the **CAN** bus connect:

- white cable labelled CAN 1+ to pin 20 of 22 pins Deutsch connector;
- bleu cable labelled CAN 1- to pin 21 of 22 pins Deutsch connector.

Using **RS232** line connect:

- RS232RX pin 17 white cable
- RS232TX pin 18 bleu cable

2.4.2 – How to connect EVO3 Pista to the ECU

The connection is made through 12 pins AMP connector.

Using the **CAN** bus connect:

- white cable labelled CAN 1+ to pin 4 of 12 pins AMP connector;
- bleu cable labelled CAN 1- to pin 3 of 12 pins AMP connector.

Using **RS232** line connect:

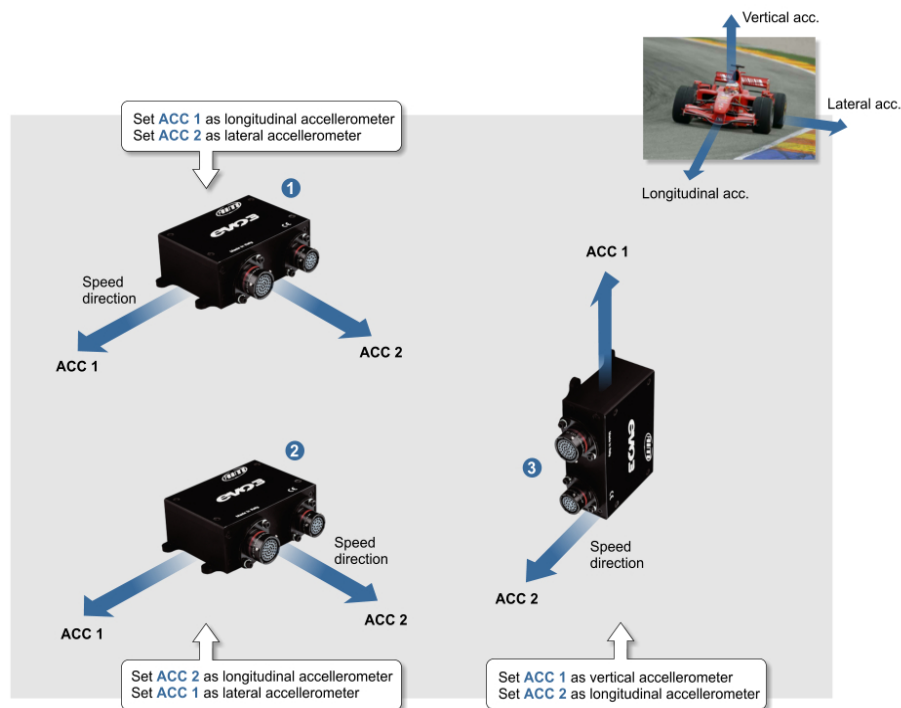
- white cable labelled RS232RX to pin 6 of 12 pins AMP connector;
- bleu cable labelled RS232TX to pin 5 of 12 pins AMP connector.

Chapter 3 – How to install and power EVO3 Pro/Pista

To install EVO3 Pro/Pista on the vehicle:

- choose a position where the logger is not in contact with oil or fuel;
- ensure that the system is not installed too near to heat sources;
- install system and wirings far from sources of electromagnetic interference like spark plugs or coil.

EVO3 Pro/Pista has one internal bi-axial accelerometer: to correctly sample **in-line** (parallel to the vehicle speed) and **lateral** (perpendicular to the vehicle speed) acceleration install the logger as shown in example 1 of the below image. To install the logger differently change Acc_1 and Acc_2 settings as explained in examples 2 and 3.



In case of bike application it is possible to install an external gyroscope, optional to **EVO3 Pro/Pista**, to create track maps. This sensor can be installed only on these channels that supply the 12V power force it needs; to say:

- on channels CH_8, CH_9, CH_10 e CH_11 of **EVO3 Pro**;
- on channels CH_4, CH_5, CH_6, CH_7 e CH_8 of **EVO3 Pista**.

To power EVO3 Pro/Pista:

- check power voltage: **EVO3 Pro/Pista** needs an external 9/18 VDC power source (the vehicle battery): **do not exceed these limits**;
- connect black cable labelled “GND” to the vehicle battery negative (-) pole and red cable labelled “9/18 VDC” to the vehicle battery positive (+) pole;
- power **EVO3 Pro/Pista** through the vehicle master switch to save the vehicle battery charge;

3.1 – EVO3 Pro/Pista front led



EVO3 Pro/Pista has a little green led on the front panel.

As shown in the above image the led position is top left on **EVO3 Pista** and bottom central on **EVO3 Pro**.

The led has a double function: it switches on when EVO3 is powered and shows the logger status:

- | | |
|--------------------------------------|------------------------|
| • Led blinking 1Hz (1 time/second) | EVO3 waiting to record |
| • Led steady (not blinking) | EVO3 sampling |
| • Led blinking 3 Hz (3 times/second) | Status EVO3 non ok |

Chapter 4 – EVO3 Pro/Pista memory

All **EVO3 Pro/Pista** models have an internal memory whose characteristics are:

- non volatile Flash type: data are stored also when the logger is off or disconnected;
- round: when it fills up older data are over written;
- different dimensions according to the system version:
 - **EVO3 Pista**: 8 MB;
 - **EVO3 Pro**: 16 MB.

Chapter 5 – EVO3 software, driver, configuration, transmission, data download, online and maintenance

EVO3 Pro/Pista connects easily to a PC with an USB cable and can be configured only using **Race Studio 2**, the powerful software – supplied free – developed by AIM to configure its loggers and analyse stored data.

EVO3 Pro/Pista standard kit includes an USB cable and **Race Studio 2** and USB driver installation CD.

WARNING: it is possible to configure the logger only after having installed software and driver. Periodically check www.aim-sportline.com for new Race Studio 2 software and/or EVO3 Pro/Pista firmware releases.

Race Studio Configuration user manual, that can be downloaded from download area, software section of AIM corporate website www.aim-sportline.com contains all information about how to:

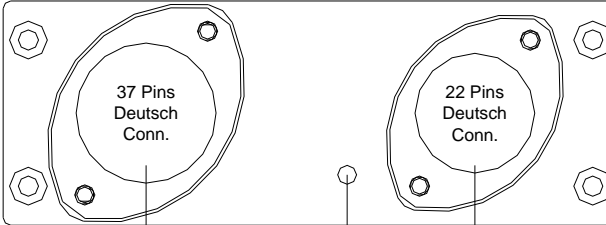
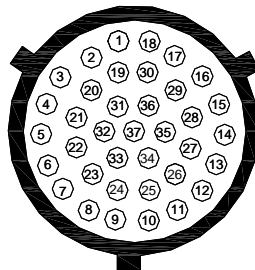
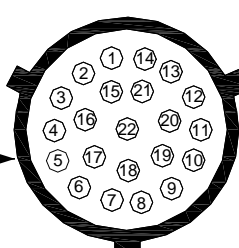
- install **Race Studio 2** under Microsoft Windows Xp®, Microsoft Windows Vista® (both 32 and 64 bit only) and Microsoft Windows 7®;
- configure **EVO3 Pro/Pista** and set its channel;
- set and manage standard and custom sensors;
- calibrate and auto-calibrate sensors;
- transmitting the configuration to EVO3 Pro/Pista once set;
- calculate the engaged gear;
- download sampled data;
- enter online mode.


EVO3 Pro/Pista does not need any special maintenance.

The only suggested maintenance is a periodical software / firmware update when released by AIM (periodically check www.aim-sportline.com).

To update software/firmware connect to www.aim-sportline.com download area, software/firmware area and select in sequence firmware and software options. Check if software and/or firmware updates have been released, download them, run them and follow the instructions that appears on the PC monitor.

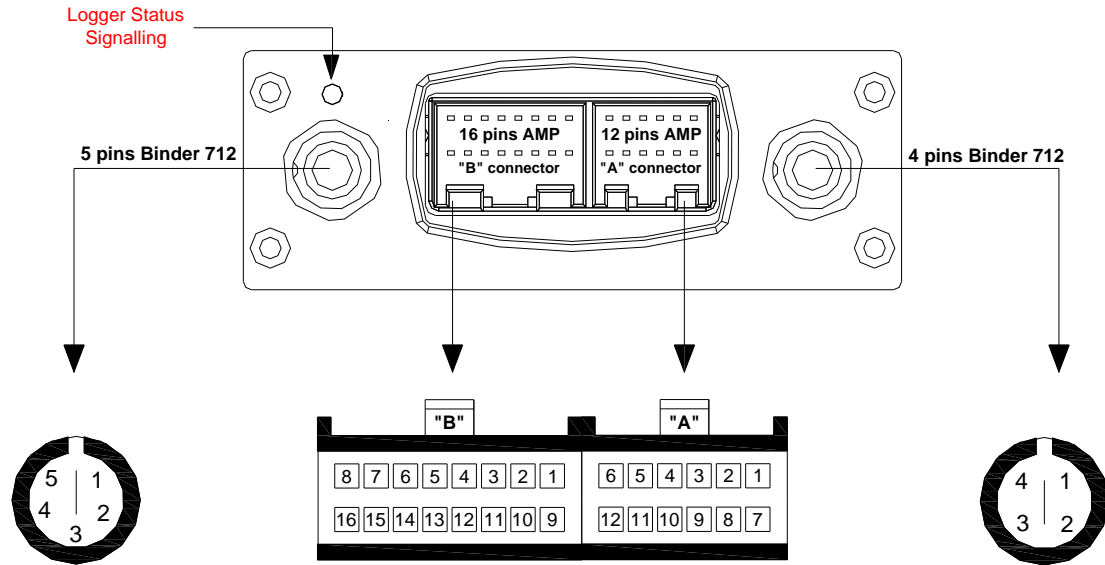
Appendix "A" – Loggers pinout

N.rev. / Rev. N.	Descrizione / Description	Data / date	Firma / Sign	Contr. da / Ckd. by																																																																																																																																		
<h3 style="margin: 0;">EVO3 Pro pinout</h3> <div style="display: flex; justify-content: space-around; align-items: center;">  </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center; color: red;"> <p>Segnalazione Status logger</p> </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <table border="1" style="width: 45%; border-collapse: collapse;"> <thead> <tr> <th>PIN</th> <th>CONNECTION</th> </tr> </thead> <tbody> <tr><td>1</td><td>+Vb ext</td></tr> <tr><td>2</td><td>+Analog Input 1</td></tr> <tr><td>3</td><td>+Analog Input 2</td></tr> <tr><td>4</td><td>Analog GND</td></tr> <tr><td>5</td><td>Analog GND</td></tr> <tr><td>6</td><td>V reference 3</td></tr> <tr><td>7</td><td>V reference 2</td></tr> <tr><td>8</td><td>+Analog Input 3</td></tr> <tr><td>9</td><td>+Analog Input 4</td></tr> <tr><td>10</td><td>+Analog Input 6</td></tr> <tr><td>11</td><td>Analog GND</td></tr> <tr><td>12</td><td>RPM 4-8 V</td></tr> <tr><td>13</td><td>Rpm in</td></tr> <tr><td>14</td><td>+Vb</td></tr> <tr><td>15</td><td>GND</td></tr> <tr><td>16</td><td>+Vb</td></tr> <tr><td>17</td><td>+Vb</td></tr> <tr><td>18</td><td>GND</td></tr> <tr><td>19</td><td>+Analog Input 11</td></tr> <tr><td>20</td><td>+Analog Input 12</td></tr> <tr><td>21</td><td>V reference 5</td></tr> <tr><td>22</td><td>V reference 1</td></tr> <tr><td>23</td><td>+Analog Input 10</td></tr> <tr><td>24</td><td>V reference 6</td></tr> <tr><td>25</td><td>+Analog Input 9</td></tr> <tr><td>26</td><td>+Analog Input 8</td></tr> <tr><td>27</td><td>Analog GND</td></tr> <tr><td>28</td><td>GND</td></tr> <tr><td>29</td><td>+Vb</td></tr> <tr><td>30</td><td>Speed 1</td></tr> <tr><td>31</td><td>Analog GND</td></tr> <tr><td>32</td><td>+Analog Input 5</td></tr> <tr><td>33</td><td>+Analog Input 7</td></tr> <tr><td>34</td><td>V reference 3</td></tr> <tr><td>35</td><td>Analog GND</td></tr> <tr><td>36</td><td>Speed</td></tr> <tr><td>37</td><td>Lap in</td></tr> </tbody> </table> <table border="1" style="width: 45%; border-collapse: collapse;"> <thead> <tr> <th>PIN</th> <th>CONNECTION</th> </tr> </thead> <tbody> <tr><td>1</td><td>+Vb</td></tr> <tr><td>2</td><td>GND</td></tr> <tr><td>3</td><td>CAN 0-</td></tr> <tr><td>4</td><td>CAN 0+</td></tr> <tr><td>5</td><td>Speed 2</td></tr> <tr><td>6</td><td>Speed 3</td></tr> <tr><td>7</td><td>D+</td></tr> <tr><td>8</td><td>D-</td></tr> <tr><td>9</td><td>GND</td></tr> <tr><td>10</td><td>+Vb</td></tr> <tr><td>11</td><td>GND</td></tr> <tr><td>12</td><td>GND</td></tr> <tr><td>13</td><td>+Vb CAN</td></tr> <tr><td>14</td><td>Ext. Gear Flash</td></tr> <tr><td>15</td><td>Ext. Input 1</td></tr> <tr><td>16</td><td>Ext. Input 2</td></tr> <tr><td>17</td><td>232 RX</td></tr> <tr><td>18</td><td>232 TX</td></tr> <tr><td>19</td><td>GND</td></tr> <tr><td>20</td><td>CAN 1+</td></tr> <tr><td>21</td><td>CAN 1-</td></tr> <tr><td>22</td><td>Vb Ext.</td></tr> </tbody> </table> </div> <div style="margin-top: 20px; text-align: center; color: red;"> <p>Logger state signalling</p> <table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th>Led Status</th> <th>Logger Status</th> </tr> </thead> <tbody> <tr> <td>Blinking 1 Hz</td> <td>Waiting to record</td> </tr> <tr> <td>On (not blinking)</td> <td>Recording</td> </tr> <tr> <td>Blinking 3 Hz</td> <td>Logger status non ok</td> </tr> </tbody> </table> </div>					PIN	CONNECTION	1	+Vb ext	2	+Analog Input 1	3	+Analog Input 2	4	Analog GND	5	Analog GND	6	V reference 3	7	V reference 2	8	+Analog Input 3	9	+Analog Input 4	10	+Analog Input 6	11	Analog GND	12	RPM 4-8 V	13	Rpm in	14	+Vb	15	GND	16	+Vb	17	+Vb	18	GND	19	+Analog Input 11	20	+Analog Input 12	21	V reference 5	22	V reference 1	23	+Analog Input 10	24	V reference 6	25	+Analog Input 9	26	+Analog Input 8	27	Analog GND	28	GND	29	+Vb	30	Speed 1	31	Analog GND	32	+Analog Input 5	33	+Analog Input 7	34	V reference 3	35	Analog GND	36	Speed	37	Lap in	PIN	CONNECTION	1	+Vb	2	GND	3	CAN 0-	4	CAN 0+	5	Speed 2	6	Speed 3	7	D+	8	D-	9	GND	10	+Vb	11	GND	12	GND	13	+Vb CAN	14	Ext. Gear Flash	15	Ext. Input 1	16	Ext. Input 2	17	232 RX	18	232 TX	19	GND	20	CAN 1+	21	CAN 1-	22	Vb Ext.	Led Status	Logger Status	Blinking 1 Hz	Waiting to record	On (not blinking)	Recording	Blinking 3 Hz	Logger status non ok
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7	V reference 2																																																																																																																																					
8	+Analog Input 3																																																																																																																																					
9	+Analog Input 4																																																																																																																																					
10	+Analog Input 6																																																																																																																																					
11	Analog GND																																																																																																																																					
12	RPM 4-8 V																																																																																																																																					
13	Rpm in																																																																																																																																					
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19	+Analog Input 11																																																																																																																																					
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25	+Analog Input 9																																																																																																																																					
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28	GND																																																																																																																																					
29	+Vb																																																																																																																																					
30	Speed 1																																																																																																																																					
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32	+Analog Input 5																																																																																																																																					
33	+Analog Input 7																																																																																																																																					
34	V reference 3																																																																																																																																					
35	Analog GND																																																																																																																																					
36	Speed																																																																																																																																					
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3	CAN 0-																																																																																																																																					
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12	GND																																																																																																																																					
13	+Vb CAN																																																																																																																																					
14	Ext. Gear Flash																																																																																																																																					
15	Ext. Input 1																																																																																																																																					
16	Ext. Input 2																																																																																																																																					
17	232 RX																																																																																																																																					
18	232 TX																																																																																																																																					
19	GND																																																																																																																																					
20	CAN 1+																																																																																																																																					
21	CAN 1-																																																																																																																																					
22	Vb Ext.																																																																																																																																					
Led Status	Logger Status																																																																																																																																					
Blinking 1 Hz	Waiting to record																																																																																																																																					
On (not blinking)	Recording																																																																																																																																					
Blinking 3 Hz	Logger status non ok																																																																																																																																					

Rif. / Ref.	Q.tà / Q.ty	Materiale / Material	N. articolo / Item N.
Progettato da / Designed by	Contr. da / Ckd. by	Approvato da / Approved by	Nome file / File name
LI			
		<p>Titolo / Title</p> <p>Pinout EVO3 Pro</p>	
N. disegno / Drawing N.		Rev. / Rev.	Foglio / Sheet
			1 of 1

N.rev. / Rev. N.	Descrizione / Description	Data / date	Firma / Sign	Contr. da / Ckd. by
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EVO3 Pista pinout



5 pins Binder 712 connector

PIN	CONNECTION
1	CAN 0+
2	GND
3	+V battery
4	CAN 0-
5	9-15 V external battery

Segnalazione stato logger

Led status	Logger status
Blinking 1 Hz	Waiting to record
Steady	Recording
Blinking 3Hz	Logger status non ok

12 pins AMP "A" connector


PIN	CONNECTION
1	GND
2	9-15V External battery
3	CAN 1- (ECU interface)
4	CAN 1+ (ECU interface)
5	RS232Tx (ECU interface)
6	RS 232 Rx (ECU interface)
7	USB D-
8	RPM 150-400 V coil & square wave (>8V)
9	+V battery
10	GND
11	+V battery
12	Speed

4 pins Binder 712 connector

PIN	CONNECTION
1	Magnetic Lap
2	GND
3	+V battery
4	Optic Lap

16 pins AMP "B" connector

PIN	CONNECTION
1	Analog channel 4
2	V reference
3	Analog GND
4	Analog channel 3
5	Analog channel 2
6	V reference
7	Analog GND
8	Analog channel 1
9	Analog channel 8
10	USB D+
11	Analog GND
12	Analog channel 7
13	Analog channel 6
14	V reference
15	Analog GND
16	Analog channel 5

Rif. / Ref.	Q.tà / Q.ty	Materiali / Material	N. articolo / Item N.	
Progettato da / Designed by	Contr. da / Ckd. by	Approvato da / Approved by	Nome file / File name	Data / Date
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		Titolo / Title		
		Pinout EVO3 Pista		
N. disegno / Drawing N.		Rev. / Rev.	Foglio / Sheet	
			1 of 1	

Appendix “B” – EVO3 Pro wiring

N.rev. / Rev. N.	Descrizione / Description	Data / date	Firma / Sign	Contr. da / Ckd. by
<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; font-size: 1.2em;">EVO3 Pro - 22 pins Deutsch connector harness</div> <div style="text-align: center;"> </div> <div style="text-align: right;"> <p>5 pins Binder 712 female connector pinout Solder termination view</p> </div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>4 pins Binder 719 female connector pinout Solder termination view</p> </div> <div style="text-align: center;"> <p>SEZ A-A</p> <p>22 pins Deutsch male connector pinout Contact insertion view</p> </div> </div>				
Rif. / Ref.	Q.tà / Q.ty	Materiale / Material		N. articolo / Item N.
Progettato da / Designed by	Contr. da / Ckd. by	Approvato da / Approved by	Nome file / File name	Data / Date
LI				
		Titolo / Title		
		Cavo EVO3 Pro - Connettore Deutsch 22 pin		
		N. disegno / Drawing N.	04.549.53/A	Rev. / Rev. Foglio / Sheet
				1 of 2


N.rev. / Rev. N.	Descrizione / Description	Data / date	Firma / Sign	Contr. da / Ckd. by
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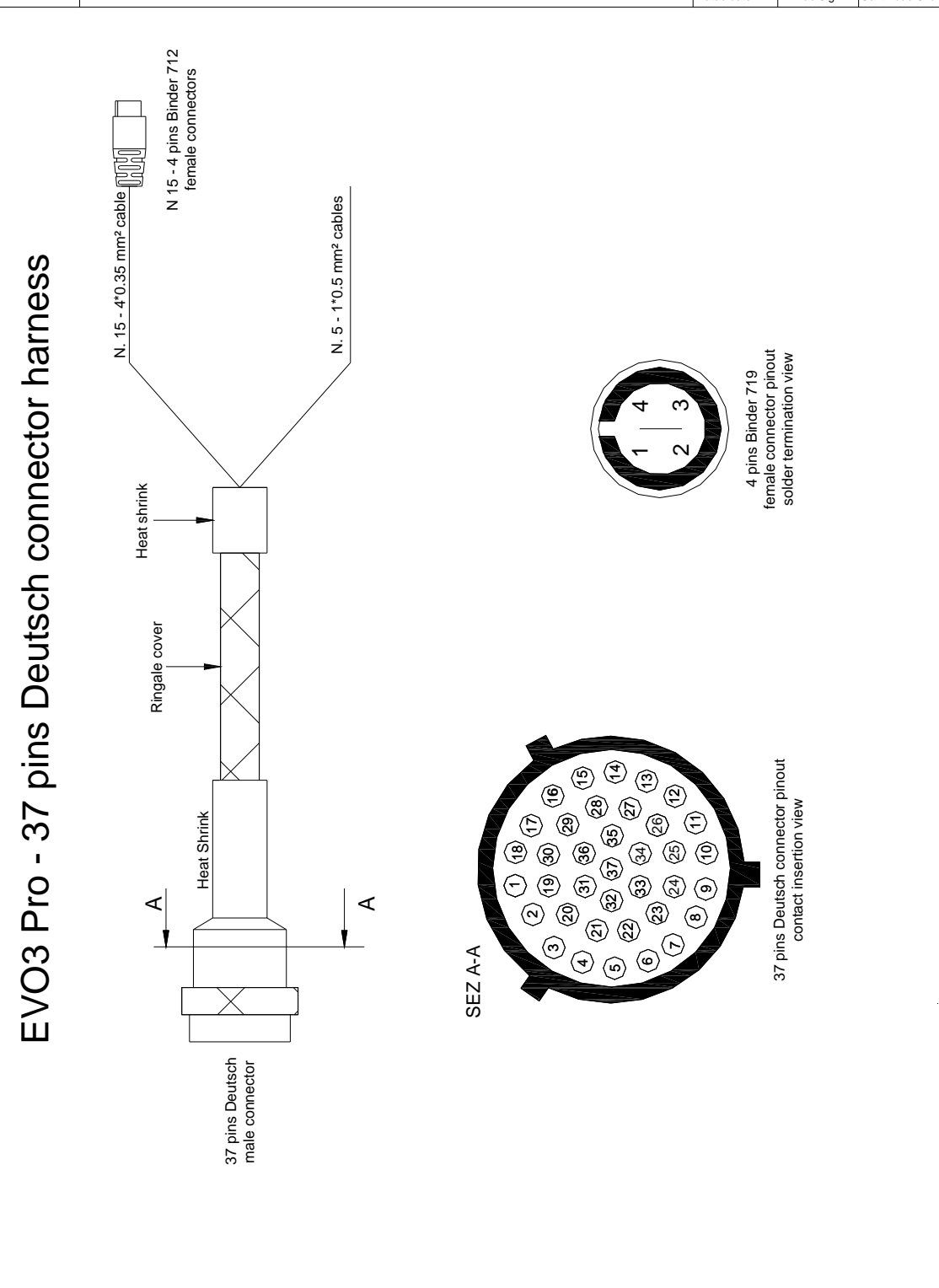

Table 1 - Channels cabled with connectors


22 pins Deutsch connector pin	Cable colour	Destination connector	Destination connector pin	Cable type	Lenght	Channel	Label
7 9 8 n.c.	white black red bleu	Binder USB	1 2 3 4	4x0.35 mm ²	1100 mm	USB D+ GND USB D-	USB
5 11 10 n.c.	white black red bleu	Binder Speed 3	1 2 3 4	4x0.35 mm ²	300 mm	Speed 3 GND V battery	Speed 3
6 11 10 n.c.	white black red bleu	Binder Speed 4	1 2 3 4	4x0.35 mm ²	300 mm	Speed 4 GND V battery	Speed 4
4 2 13 3 22	white black red bleu orange	Binder Exp.	1 2 3 4 5	5x0.25 mm ²	350 mm	CAN 0+ GND V battery CAN 0- +Vb ext.	Exp.
14 2 14 1	white black bleu red	Binder gear flash	1 2 3 4	4x0.35 mm ²	350 mm	Gear flash GND gear flash V battery	Gear flash


Table 2 - Chaneln cabled without connector

22 pins Deutsch connector pin	Cable colour	Not cabled channel	Cable type	Lenght	Channel
15 12	white black	Digit input 1	1x0.5 mm ² 1x0.5 mm ²	550 mm	IN 1 GND
16 12	yellow black	Digit input 1	1x0.5 mm ² 1x0.5 mm ²	550 mm	IN 2 GND
20 19 21	white black bleu	CAN	1x0.5 mm ² 1x0.5 mm ² 1x0.5mm ²	550 mm	CAN 1+ GND CAN 1-
17 19 18	white black bleu	RS232	1x0.5 mm ² 1x0.5 mm ² 1x0.5 mm ²	550 mm	RS232 RX GND RS232 TX

Rif. / Ref.	Q.tà / Q.ty	Materiale / Material		N. articolo / Item N.		
Progettato da / Designed by LI		Contr. da / Ckd. by	Approvato da / Approved by	Nome file / File name	Data / Date	Scala / Scale
 Racing Data Power		Titolo / Title EVO3 Pro cavo connettore Deutsch 22 pin				
		N. disegno / Drawing N. 04.549.53		Rev. / Rev.	Foglio / Sheet 2 of 2	

N.rev. / Rev. N.		Descrizione / Description		Data / date	Firma / Sign	Contr. da / Ckd. by
<h1 style="writing-mode: vertical-rl; transform: rotate(180deg);">EVO3 Pro - 37 pins Deutsch connector harness</h1> 						
Rif. / Ref.	Q.tà / Q.ty	Materiale / Material		N. articolo / Item N.		
Progettato da / Designed by LI	Contr. da / Ckd. by	Approvato da / Approved by	Nome file / File name	Data / Date	Scala / Scale	
		Titolo / Title Cavo EVO3 Pro - Connettore Deutsch 37 pin				
		N. disegno / Drawing N. 04.549.50	Rev. / Rev. 2	Foglio / Sheet 1 of 3		

N.rev. / Rev. N.	Descrizione / Description			Data / date	Firma / Sign	Contr. da / Ckd. by
Table 1 - channels cabled with connectors						
37 pins Deutsch connector pin	Cable colour	Destination connector	Destination Connector pin	Cable type	Lenght	Channel
2 4 21	white black red bleu	Binder Channel 1	1 2 3 4	4x0.35 mm ²	340 mm	Analog Input 1 GND V Reference
3 4 21	white black red bleu	Binder Channel 2	1 2 3 4	4x0.35 mm ²	340 mm	Analog Input 2 GND V Reference
8 5 6	white black red bleu	Binder Channel 3	1 2 3 4	4x0.35 mm ²	360 mm	Analog Input 3 GND V Reference
9 5 6	white black red bleu	Binder Channel 4	1 2 3 4	4x0.35 mm ²	360 mm	Analog Input 4 GND V Reference
32 31 7	white black red bleu	Binder Channel 5	1 2 3 4	4x0.35 mm ²	380 mm	Analog Input 5 GND V Reference
10 31 7	white black red bleu	Binder Channel 6	1 2 3 4	4x0.35 mm ²	380 mm	Analog Input 6 GND V Reference
33 35 34	white black red bleu	Binder Channel 7	1 2 3 4	4x0.35 mm ²	400 mm	Analog Input 7 GND V Reference
26 35 16 34	white black red bleu	Binder Channel 8	1 2 3 4	4x0.35 mm ²	400 mm	Analog Input 8 GND V Battery V Reference
25 11 16 24	white black red bleu	Binder Channel 9	1 2 3 4	4x0.35 mm ²	420 mm	Analog Input 9 GND V Battery V Reference
23 11 29 24	white black red bleu	Binder Channel 10	1 2 3 4	4x0.35 mm ²	420 mm	Analog Input 10 GND V Battery V Reference
19 27 29 22	white black red bleu	Binder Channel 11	1 2 3 4	4x0.35 mm ²	440 mm	Analog Input 11 GND V Battery V Reference
20 27 17 22	white black red bleu	Binder Channel 12	1 2 3 4	4x0.35 mm ²	440 mm	Analog Input 12 GND V Battery V Reference
37 28 14 37	white black red bleu	Binder Optic Lap	1 2 3 4	4x0.35 mm ²	320 mm	Lap GND V Battery Lap
36 28 14	white black red bleu	Binder Speed 1	1 2 3 4	4x0.35 mm ²	320 mm	Speed 1 GND V Battery
30 28 14	white black red bleu	Binder Speed 2	1 2 3 4	4x0.35 mm ²	320 mm	Speed 2 GND V Battery
Rif. / Ref.	Q.tà / Q.ty	Materiale / Material			N. articolo / Item N.	
Progettato da / Designed by LI		Contr. da / Ckd. by	Approvato da / Approved by	Nome file / File name	Data / Date	Scala / Scale
 Racing Data Power		Titolo / Title Cavo EVO3 Pro - connettore Deutsch 37 pin				
		N. disegno / Drawing N. 04.549.50			Rev. / Rev. 2	Foglio / Sheet 2 of 3


N.rev. / Rev. N.	Descrizione / Description			Data / date	Firma / Sign	Contr. da / Ckd. by																								
<table border="1"> <thead> <tr> <th colspan="6">Table of channels cabled without connector</th> </tr> <tr> <th>37 pin Deutsch connector</th> <th>Cable colour</th> <th>Not cabled channel</th> <th>Cable Type</th> <th>Lenght</th> <th>Channel</th> </tr> </thead> <tbody> <tr> <td>13 18 12</td> <td>white black bleu</td> <td>RPM</td> <td>1x0.5 mm² 1x0.5 mm² 1x0.5 mm²</td> <td>520 mm</td> <td>RPM input GND RPM +8V</td> </tr> <tr> <td>15 1</td> <td>black red</td> <td>Power</td> <td>1x0.5 mm² 1x0.5 mm²</td> <td>520 mm</td> <td>GND 9-15V power input</td> </tr> </tbody> </table>							Table of channels cabled without connector						37 pin Deutsch connector	Cable colour	Not cabled channel	Cable Type	Lenght	Channel	13 18 12	white black bleu	RPM	1x0.5 mm ² 1x0.5 mm ² 1x0.5 mm ²	520 mm	RPM input GND RPM +8V	15 1	black red	Power	1x0.5 mm ² 1x0.5 mm ²	520 mm	GND 9-15V power input
Table of channels cabled without connector																														
37 pin Deutsch connector	Cable colour	Not cabled channel	Cable Type	Lenght	Channel																									
13 18 12	white black bleu	RPM	1x0.5 mm ² 1x0.5 mm ² 1x0.5 mm ²	520 mm	RPM input GND RPM +8V																									
15 1	black red	Power	1x0.5 mm ² 1x0.5 mm ²	520 mm	GND 9-15V power input																									
Rif. / Ref.	Q.tà / Q.ty	Materiale / Material			N. articolo / Item N.																									
Progettato da / Designed by LI	Contr. da / Ckd. by	Approvato da / Approved by	Nome file / File name		Data / Date	Scala / Scale																								
 Racing Data Power		Titolo / Title Cavo EVO3 Pro - connettore Deutsch 37 pin																												
		N. disegno / Drawing N. 04.549.50			Rev. / Rev. 2	Foglio / Sheet 3 of 3																								

N.rev. / Rev. N.		Descrizione / Description		Data / date	Firma / Sign	Contr. da / Ckd. by	
<p>EVO3 Pro - 22 pins Deutsch connector harness</p>							
					<p>4 pins Binder 719 female connector pinout Solder termination view</p>		
					<p>5 pins Binder 712 female connector pinout Solder termination view</p>		
				<p>SEZ A-A</p>	<p>22 pins Deutsch male connector pinout Contact insertion view</p>		
Rif. / Ref.	Q.tà / Q.ty	Materiale / Material		N. articolo / Item N.			
Progettato da / Designed by	Contr. da / Ckd. by	Approvato da / Approved by	Nome file / File name	Data / Date	Scala / Scale		
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		Titolo / Title			Cavo EVO3 Pro - Connettore Deutsch 22 pin		
		N. disegno / Drawing N.		Rev. / Rev.	Foglio / Sheet		
		04.549.53		4	1 of 2		

N.rev. / Rev. N.	Descrizione / Description	Data / date	Firma / Sign	Contr. da / Ckd. by
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Table 1 - Channels cabled with connectors							
22 pins Deutsch connector pin	Cable colour	Destination connector	Destination connector pin	Cable type	Lenght	Channel	Label
7 9 8 n.c.	white black red bleu	Binder USB	1 2 3 4	4x0.35 mm ²	1100 mm	USB D+ GND USB D-	USB
5 11 10 n.c.	white black red bleu	Binder Speed 3	1 2 3 4	4x0.35 mm ²	300 mm	Speed 3 GND V battery	Speed 3
6 11 10 n.c.	white black red bleu	Binder Speed 4	1 2 3 4	4x0.35 mm ²	300 mm	Speed 4 GND V battery	Speed 4
4 2 13 3	white black red bleu	Binder Exp.	1 2 3 4	4x0.35 mm ²	350 mm	CAN 0+ GND V battery CAN 0-	Exp.
14 2 14 1	white black bleu red	Binder gear flash	1 2 3 4	4x0.35 mm ²	350 mm	Gear flash GND gear flash V battery	Gear flash

Table 2 - Chaneln cabled without connector					
22 pins Deutsch connector pin	Cable colour	Not cabled channel	Cable type	Lenght	Channel
15 12	white black	Digit input 1	1x0.5 mm ² 1x0.5 mm ²	550 mm	IN 1 GND
16 12	yellow black	Digit input 1	1x0.5 mm ² 1x0.5 mm ²	550 mm	IN 2 GND
20 19 21	white black bleu	CAN	1x0.5 mm ² 1x0.5 mm ² 1x0.5mm ²	550 mm	CAN 1+ GND CAN 1-
17 19 18	white black bleu	RS232	1x0.5 mm ² 1x0.5 mm ² 1x0.5 mm ²	550 mm	RS232 RX GND RS232 TX

Rif. / Ref.	Q.tà / Q.ty	Materiale / Material		N. articolo / Item N.		
Progettato da / Designed by LI		Contr. da / Ckd. by	Approvato da / Approved by	Nome file / File name	Data / Date	Scala / Scale
			Titolo / Title EVO3 Pro cavo connettore Deutsch 22 pin			
			N. disegno / Drawing N. 04.549.53	Rev. / Rev. 4	Foglio / Sheet 2 of 2	

Appendix "C" – EVO3 Pista wiring

N.rev. / Rev. N.	Descrizione / Description	Data / date	Firma / Sign	Contr. da / Ckd. by
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; font-size: 2em;">EVO3 Pista harness</div> </div>				
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Progettato da / Designed by	Contr. da / Ckd. by	Approvato da / Approved by	Nome file / File name	Data / Date
LI				
	Titolo / Title			
	Cavo EVO3 Pista - Binder 712			
	N. disegno / Drawing N.		04.554.56	Rev. / Rev. Foglio / Sheet 1 of 3


N.rev. / Rev. N.	Descrizione / Description	Data / date	Firma / Sign	Contr. da / Ckd. by
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Table 1 - Binder 712 female connector

Label	Binder pin	Cable type	Cable colour	AMP 12 pin	AMP 16 pin	Connection	Lenght
Ch. 1	1	4x0.35 mm ²	white black red bleu		8	Analog input 1 Analog GND V reference	350 mm
	2				7		
	3						
	4				6		
Ch. 2	1	4x0.35 mm ²	white black red bleu		5	Analog input 2 Analog GND V reference	350 mm
	2				7		
	3						
	4				6		
Ch. 3	1	4x0.35 mm ²	white black red bleu		4	Analog input 3 Analog GND V reference	350 mm
	2				3		
	3						
	4				6		
Ch. 4	1	4x0.35 mm ²	white black red bleu	9	1	Analog input 4 Analog GND +V battery V reference	400 mm
	2				3		
	3						
	4				2		
Ch. 5	1	4x0.35 mm ²	white black red bleu	9	16	Analog input 5 Analog GND +V battery V reference	400 mm
	2				15		
	3						
	4				2		
Ch. 6	1	4x0.35 mm ²	white black red bleu	9	13	Analog input 6 Analog GND +V battery V reference	400 mm
	2				15		
	3						
	4				2		
Ch. 7	1	4x0.35 mm ²	white black red bleu	11	12	Analog input 7 Analog GND + V battery V reference	450 mm
	2				11		
	3						
	4				14		
Ch. 8	1	4x0.35 mm ²	white black red bleu	11	9	Analog input 8 Analog GND +V battery V reference	450 mm
	2				11		
	3						
	4				14		
Speed	1	4x0.35 mm ²	white black red bleu	12		Speed GND +V battery	450 mm
	2			10			
	3			11			
	4						

Table 2 - Binder 719 female connector


Etichetta	Pin Binder	Tipo cavo	Colore cavo	Pin AMP 12	Pin AMP 16	Connessione	Lunghezza
USB	1	4x0.35 mm ²	bianco nero rosso blu	10 7	10	USB D+ GND USB D-	1000 mm
	2						
	3						
	4						

Rif. / Ref.	Q.tà / Q.ty	Materiale / Material			N. articolo / Item N.		
Progettato da / Designed by		Contr. da / Ckd. by	Approvato da / Approved by	Nome file / File name		Data / Date	Scala / Scale
LI							
		Titolo / Title					
		Cavo Evo3 Pista - Binder 712					
		N. disegno / Drawing N.			Rev. / Rev.	Foglio / Sheet	
		04.554.56				2 of 3	

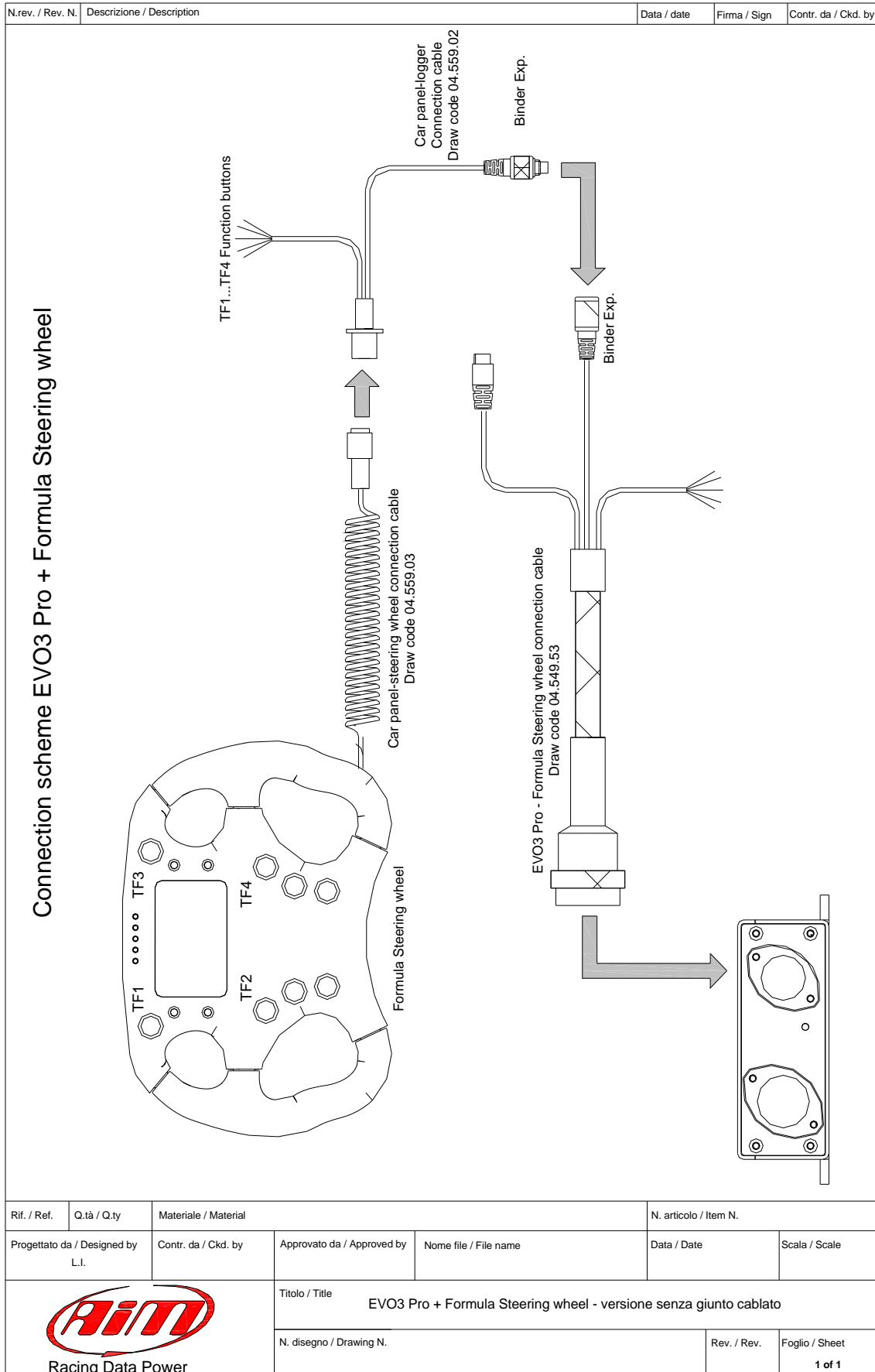
N.rev. / Rev. N.	Descrizione / Description	Data / date	Firma / Sign	Contr. da / Ckd. by
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Table 3 - Not cabled channels

Channel	Cable type	Cable colour	AMP 12 pin	AMP 16 pin	Connection	Lenght
Power	1x0.5 mm ²	red	2		9-15 VDC GND	500 mm
	1x0.5 mm ²	black	1			
RPM	1x0.5 mm ²	white	8		RPM coil-square wave	500 mm
CAN	1x0.5 mm ²	white	4		CAN+ CAN-	500 mm
	1x0.5 mm ²	blue	3			
RS232	1x0.5 mm ²	white	6		RS232RX RS232TX	500 mm
	1x0.5 mm ²	blue	5			

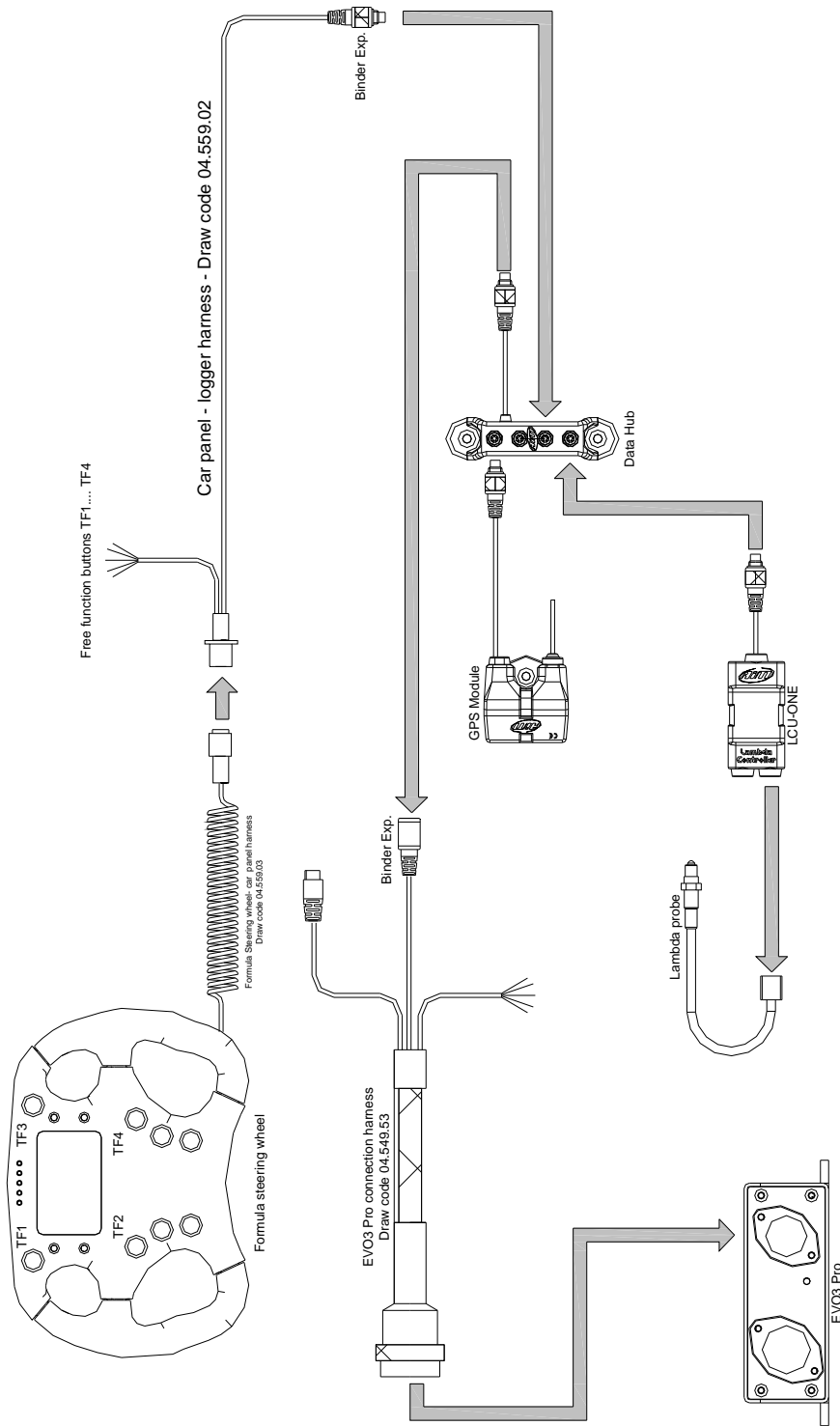
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 Racing Data Power		Titolo / Title Cavo EVO3 Pista - Binder 712				
		N. disegno / Drawing N. 04.554.56			Rev. / Rev.	Foglio / Sheet 3 of 3


Appendix “D” – EVO3 Pro connection schemes



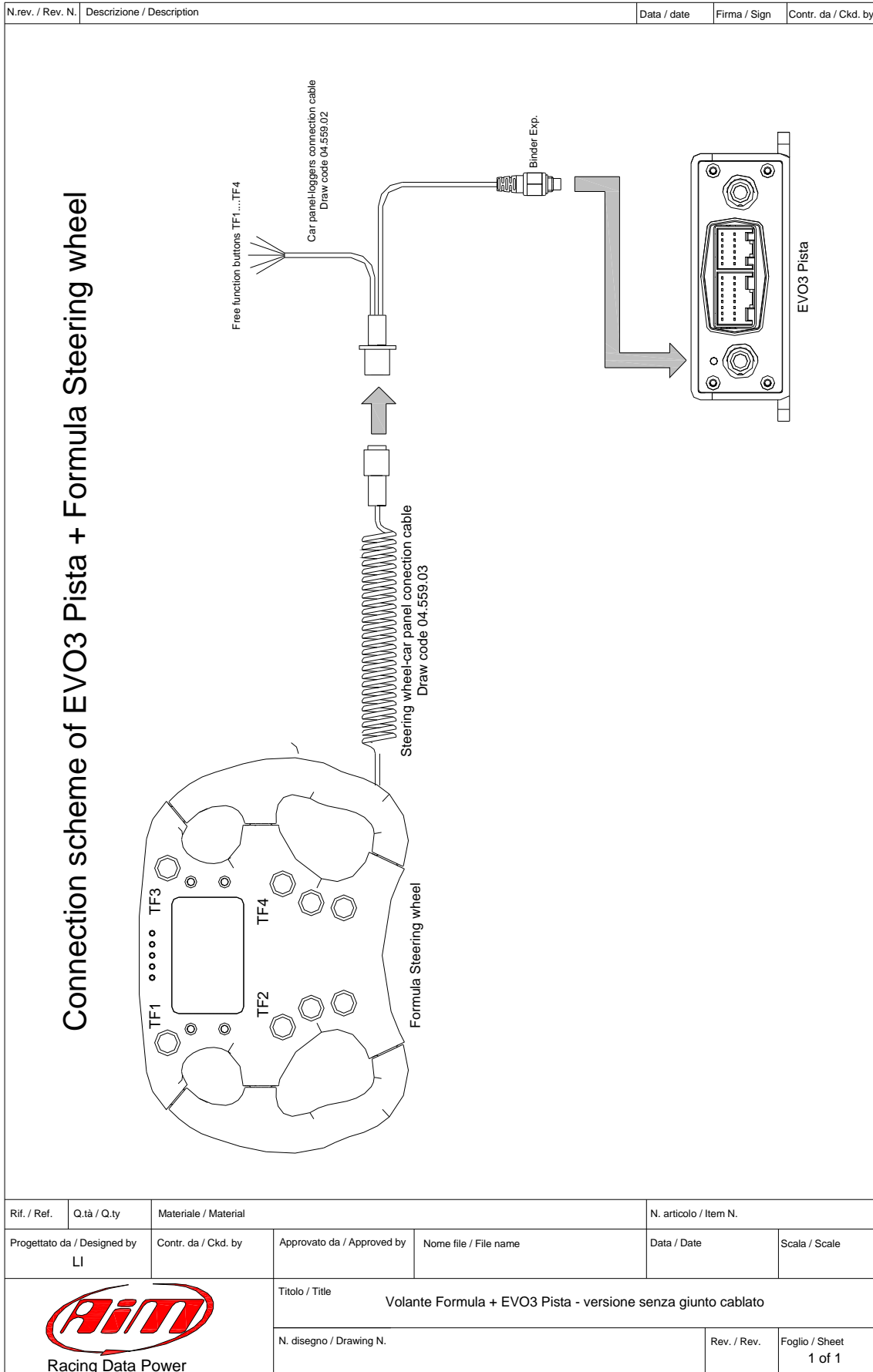
N.rev. / Rev. N.	Descrizione / Description	Data / date	Firma / Sign	Contr. da / Ckd. by
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Example of network connection scheme with EVO3 Pro, Formula Steering wheel, GPS Module and LCU-ONE



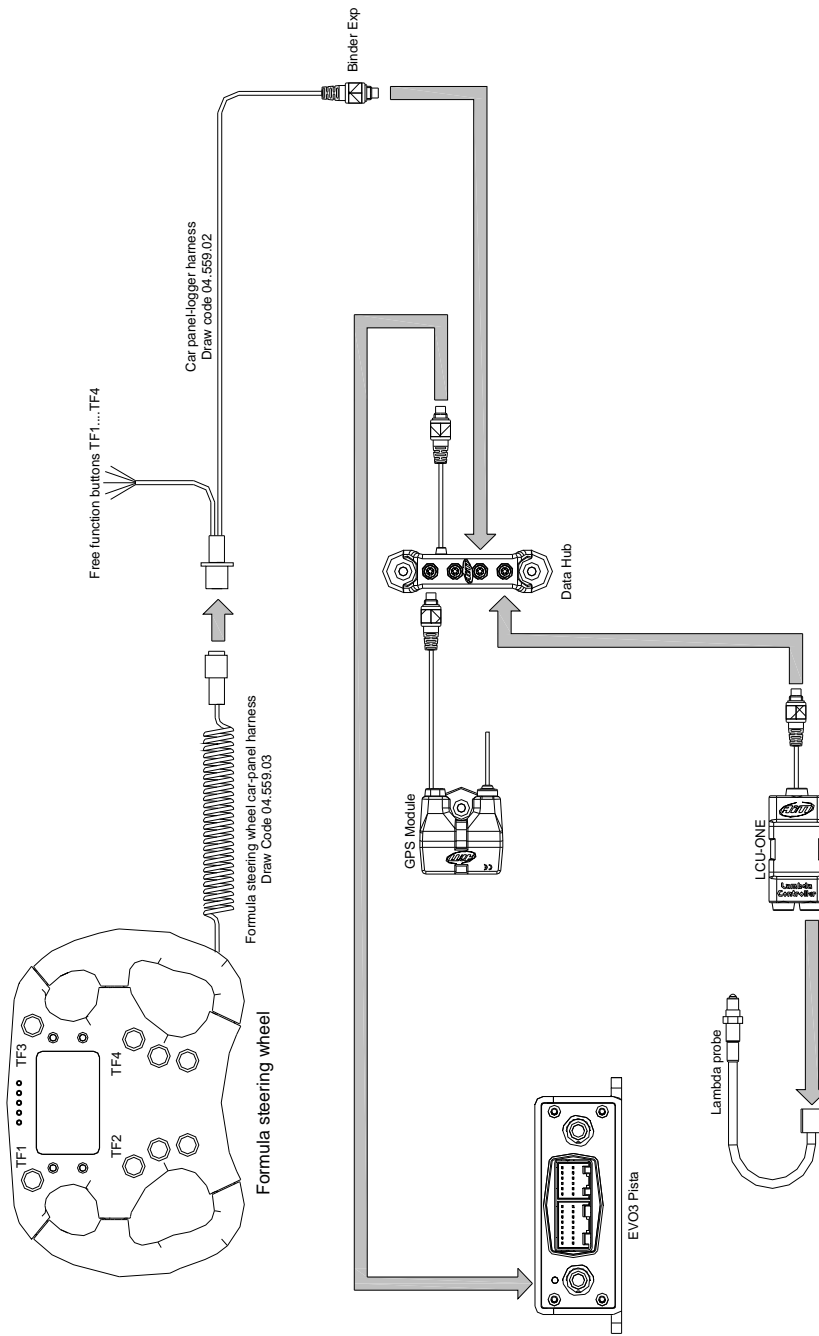
Rif. / Ref.	Q.tà / Q.ty	Materiale / Material		N. articolo / Item N.	
Progettato da / Designed by	Contr. da / Ckd. by	Approvato da / Approved by	Nome file / File name		Data / Date
L.I					
 Racing Data Power		Titolo / Title			
		Esempio schema di collegamento: EVO3 Pro, Formula Steering Wheel, Modulo GPS, LCU-ONE			
N. disegno / Drawing N.		Rev. / Rev.	Foglio / Sheet		
			1 of 1		

Appendix “E” – EVO3 Pista connection schemes



N.rev. / Rev. N.	Descrizione / Description	Data / date	Firma / Sign	Contr. da / Ckd. by
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Example of network connection scheme with EVO3 Pista, Formula Steering wheel, GPS Module and LCU-ONE



Rif. / Ref.	Q.tà / Q.ty	Materiale / Material		N. articolo / Item N.	
Progettato da / Designed by	Contr. da / Ckd. by	Approvato da / Approved by	Nome file / File name		Data / Date
LI					Scala / Scale
		Titolo / Title			
		Esempio schema di collegamento : EVO3 Pro, Volante formula, Modulo GPS, LCU-ONE			
N. disegno / Drawing N.		Rev. / Rev.	Foglio / Sheet		
			1 of 1		