

MOBILE ELECTRONICS



T E C H N I C A L C A T A L O G

**Methodology :**

This document is intended for manufacturers of machines that incorporate Poclain Hydraulics products. It describes the technical characteristics of Poclain Hydraulics products and specifies installation conditions that will ensure optimum operation.

This document includes important comments concerning safety as well as the installation guide that must be read before any installation (<https://poclain.com/resources>). Important comments are indicated in the following way:

**Safety comment.**

This document also includes essential operating instructions for the product and general information. These are indicated in the following way:

**Essential instructions.****General information.****Information on the model number.****Weight of component without oil.****Volume of oil.****Units.****Tightening torque.****Screws.****Information intended for Poclain-Hydraulics personnel.**

The views in this document are created using metric standards.

The dimensional data is given in mm and in inches (inches are given in brackets in italics).

**Associated documents****Document type**

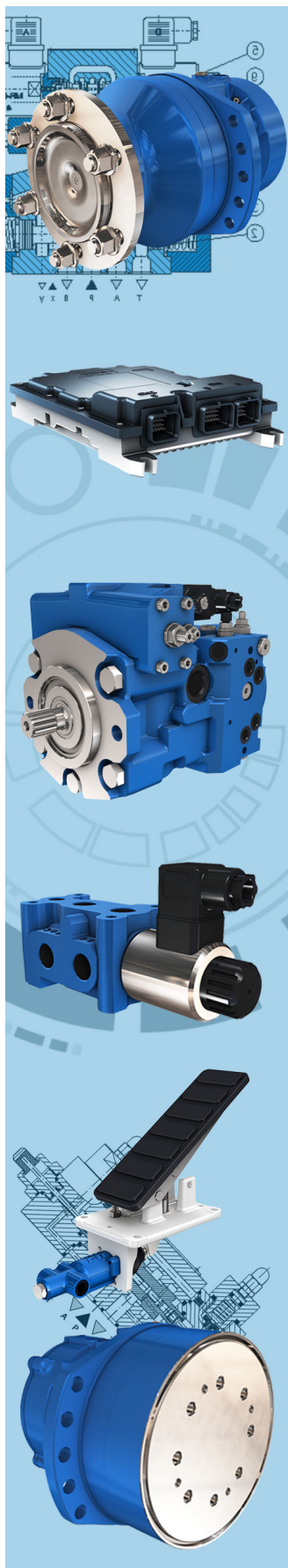
Generic installation

B59689D

**The components of this booklet are not reparable.****Warranty reclaim of any disassembled components will not be accepted.**



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SmartDrive™ CT ECU

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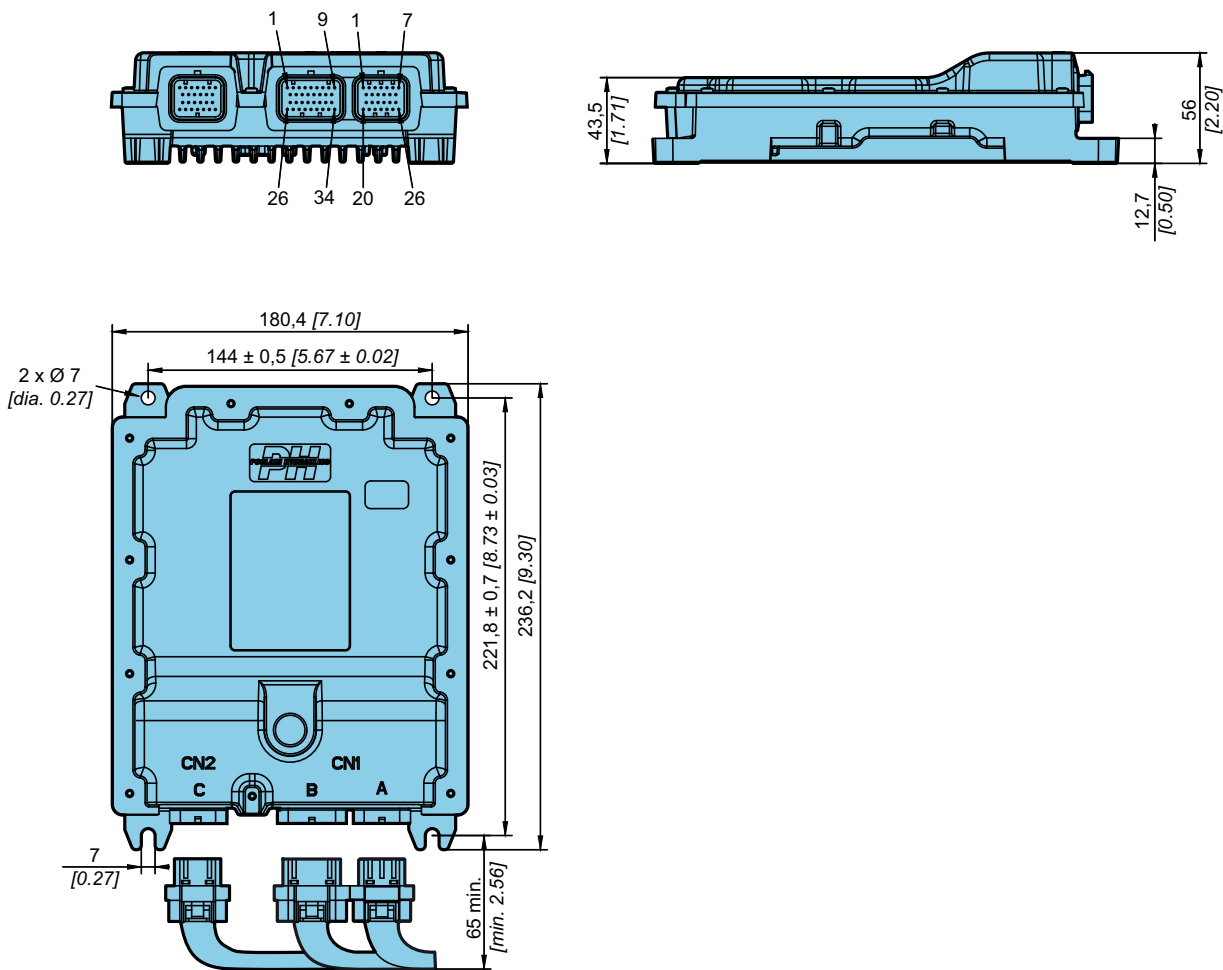
Cables

**SMARTDRIVE™ CT ECU**

Commercial name		SD-CT-200	SD-CT-300
Part number		A46841P	A46842Q
Operating voltage		8 V to 32 V	
Operating temperature		- 40°C to 85°C [-40 °F to 185°F]	
Overall dimensions		See below	
Material		- Aluminum AlSi ₉ Cu ₃ (Box) - PA66 plastic with 20% of fiberglass (cap) - Silicon (seal)	
Mass		1,270 kg ±10% [2,76 lb] ±10%	
Mounting		4 x Ø 7 mm 4 x [0.275" dia.]	
Controller Ingress Protection with counterpart connectors mounted		IP67 (according to EN60529 oct 1992)	
Max. quiescent current consumption (ignition switched off)		5 mA	
12V system max current		35,4 A	
24V system max current		17 A	
Maximum usage profile:	12V System: (Supply voltage 16V)	- 6 HSD PWM outputs 400Hz, 95% 8 Ω loads - 4 HSD digital outputs on, 6.15 Ω loads	- 8 HSD PWM outputs 400Hz, 95% 8 Ω loads - 4 HSD digital outputs on, 6.15 Ω loads - 4 HSD digital outputs on, 8Ω loads
	24V System: (Supply voltage 32V)	- 6 HSD PWM outputs 400Hz, 95% 32Ω loads - 4 HSD digital outputs on, 32Ω loads	- 8 HSD PWM outputs 400Hz, 95% 32Ω loads - 8 HSD digital outputs on, 32Ω loads
Performance level		Capacity to reach PL d level according to ISO13849:2015 standard	
Mean Time To Failure (MTTF)		85,1 years (ambient temperature of 40°C [104°F] with operating profil of 11,87% (4 hours per day, 5 days per week, 52 weeks per year)	66,7 years (ambient temperature of 40°C [104°F] with operating profil of 11,87% (4 hours per day, 5 days per week, 52 weeks per year)
Mean Time To Dangerous Failure (MTTFd)		224.2 years	173.1 years
Diagnostic Coverage (DC)		90,9% (medium)	90,7% (medium)
Category		2	2
Electrical protection		Over-voltage, reverse polarity, ground and battery short circuit	
Microcontroller		One 32 bits microcontroller and one 8 bits microcontroller	
ECU programming		Programming with a PC using the PHASES™-CT software application	
ECU set-up		Set-up with the software PHASES™-CT	
Universal inputs (UN)		9	15
Analog inputs (AN)		11	17
Frequency inputs (FIN)		5	8
Wake-Up Input (WUI)		1	1
Ground sense input (GND_SENSE)		1	1
HSD PWM 2A outputs		6	8
HSD DIG 2,6A outputs		4	4
HSD DIG 2A outputs		0	4
Low Side Digital output (LSD) 4A		0	3
Low Side Digital output (LSD) 5,2A		3	3
Sensor supply 5V		1	1



Overall dimensions of the ECU



Electronic control units

Electronic components

Connectors

Cables

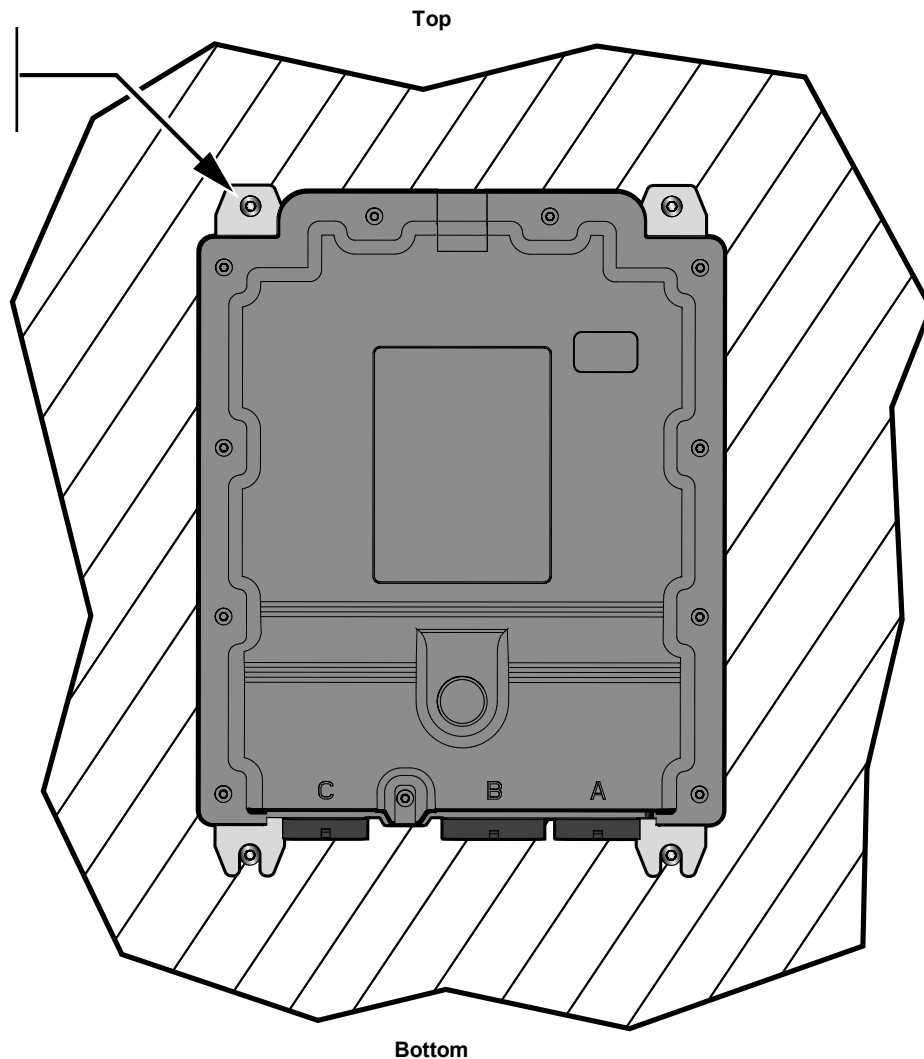


Fitting the controller

The controller must be fixed on a rigid support. Make sure that there is enough space to fit the connector (min. 65 mm [*min. 2.56 in*]). The controller shall be preferably mounted in vertical position (connectors at the bottom) to enhance ventilation and avoid dust accumulation on cooling fins.

The controller's housing has to be connected to the ground (chassis) of the vehicle and to be installed on a flat surface (flatness of 0,5/100x100mm [*3.94x3.94 in*]).

Screw (X4): M6
Nut (x4): M6
Shim (x4) : M6
Tightening torque: 6 Nm



Electrical connections	Commercial name	Part number	
SmartDrive™ CT main connector	KIT-CONNECT-SD-CT-200	A48149L	page 29
	KIT-CONNECT-SD-CT-300	A48140B	
SmartDrive™ CT communication connector	KIT-CONNECT-COM-M-SD-CT	A48693C	page 31
Connector kit 120Ω	KIT-PLUG-120-DTM-2S	A52539H	page 33
SmartDrive™ CT-200 cable	CABLE-SD-CT-200-60-5000	A48878D	page 89
SmartDrive™ CT-300 cable	CABLE-SD-CT-300-86-5000	A48877C	page 46



Electronic control units

Electronic components

Connectors

Cables



SPEED SENSOR T4



✓ No detection of the rotation direction.

Commercial name	SPD-SENS-T4-12-44	SPD-SENS-T4-12-53	SPD-SENS-T4-12-62
Part number	B61287Q	B61288R	B61289S
Length L(*)	44 [1.73]	53 [2.09]	62 [2.44]
Function	Detect movements: rotation speed		
Compatibility	Electronic transmission management		

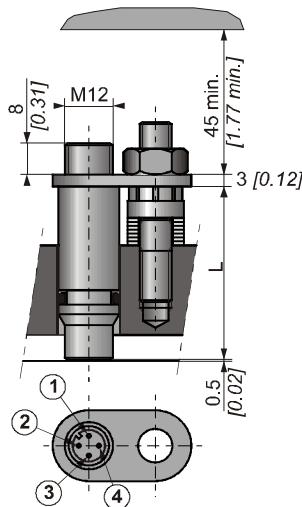
(*) : According to the size of the motor, consult your Poclain Hydraulics sales engineer

Features

Supply voltage	8 - 32 V
Output type	- 1 push-pull square frequency signal - Maximum load current: 20 mA - Voltage at low state: < 1.5 V - Voltage at high state: > (power supply voltage - 3.5 V)
Signal type	Frequency 
Maximum range	1.15 mm [0.045"]
Current consumption	20 mA max.
Frequency range	0 to 15 kHz
Operating temperature	- 40°C to + 125°C [- 40°F to 257°F]
Material	Stainless steel housing
Protection rating	IP68 (sensitive side) / IP67 (connector side)
Electrical protection	Protected against reverse polarity, short circuit to ground and supply
Mean Time To Failure (MTTF)	1 338 years with operating profile of 21% (8h per day, 229 days per year) Calculated according ISO13849-1 with component database SN29500
Mean Time To Dangerous Failure (MTTFd)	2 677 years



Layout



Installation

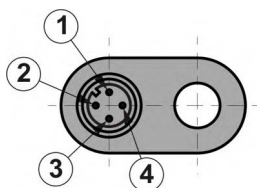
Disconnecting the accessories and speed set up

In the case of motors predisposed to speed, the existing shutter needs to be removed and eliminated before installing the sensor and its attachment device.

To install the sensor, see the "Installation guide" brochure No. B61352L.

Connection of the speed sensor

Remove the plastic plug on the connector.



Function	Pin number
Power supply	1
Not present	2
Ground	3
Square frequency signal	4

For the connection of connectors, please refer to the connection table and the general cabling plan contained in the installation brochure for your transmission.

Electrical connections	90°	180°
Commercial name	ELEC-CABLE-M12-90°-5000	ELEC-CABLE-M12-180°-5000
Part number	A04999J	A07468S
	page 52	page 52



In case of using an M12 90° cable (A04999J), pay attention to the alignment of the elbow with the sensor's bracket to avoid twisting the sensor's connector pins.



The M12 nut must be tightened with a tightening torque from 0.6 Nm (hand-tight) to 1.5 Nm (using a torque wrench). An excessive tightening can damage the M12 connector.



Sensor must be powered on after installation (fixing on motor's cover and counterpart connector assembled).



SPEED SENSOR TR



✓ Detection of the rotation direction.

Commercial name	SPD-SENS-TR-12-44	SPD-SENS-TR-12-53	SPD-SENS-TR-12-62
Part number	B61291U	B61292V	B61293W
Length L(*)	44 [1.73]	53 [2.09]	62 [2.44]
Function	Detect movements: rotation speed and rotation direction		
Compatibility	Electronic transmission management		

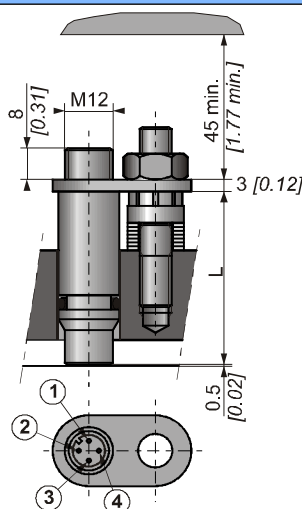
(*) : According to the size of the motor, consult your Poclain Hydraulics sales engineer

Features

Supply voltage	8 - 32 V
Output type	- 1 push-pull square frequency signal - 1 push-pull direction signal - Maximum load current: 20 mA - Voltage at low state: < 1.5 V - Voltage at high state: > (power supply voltage - 3.5 V)
Signal type	Frequency  Direction 
Maximum range	1.15 mm [0.045"]
Current consumption	20 mA max.
Frequency range	0 to 15 kHz
Instantaneous frequency deviation	10% with sensor mounted on Poclain Hydraulics motors
Operating temperature	- 40°C to + 125°C [- 40°F to 257°F]
Material	Stainless steel housing
Protection rating	IP68 (sensitive side) / IP67 (connector side)
Electrical protection	Protected against reverse polarity, short circuit to ground and supply
Mean Time To Failure (MTTF)	717 years with operating profile of 21% (8h per day, 229 days per year) Calculated according ISO13849-1 with component database SN29500
Mean Time To Dangerous Failure (MTTFd)	1 434 years



Layout



Installation

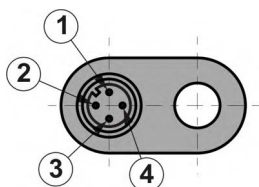
Disconnecting the accessories and speed set up

In the case of motors predisposed to speed, the existing shutter needs to be removed and eliminated before installing the sensor and its attachment device.

To install the sensor, see the "Installation guide" brochure No. B61352L.

Connection of the speed sensor

Remove the plastic plug on the connector.



Function	Pin number
Power supply	1
Direction signal	2
Ground	3
Square frequency signal	4

For the connection of connectors, please refer to the connection table and the general cabling plan contained in the installation brochure for your transmission.

Electrical connections

	90°	180°
Commercial name	ELEC-CABLE-M12-90°-5000	ELEC-CABLE-M12-180°-5000
Part number	A04999J	A07468S
	page 52	page 52



In case of using an M12 90° cable (A04999J), pay attention to the alignment of the elbow with the sensor's bracket to avoid twisting the sensor's connector pins.



The M12 nut must be tightened with a tightening torque from 0.6 Nm (hand-tight) to 1.5 Nm (using a torque wrench). An excessive tightening can damage the M12 connector.



Sensor must be powered on after installation (fixing on motor's cover and counterpart connector assembled).

Electronic control units

Electronic components

Connectors

Cables



SPEED SENSOR TD

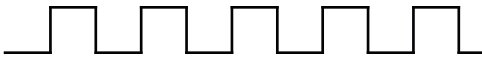


✓ Detection of the rotation direction.

Commercial name	SPD-SENS-TD-12-44	SPD-SENS-TD-12-53	SPD-SENS-TD-12-62
Part number	B61294X	B61295Z	B61296A
Length L(*)	44 [1.73]	53 [2.09]	62 [2.44]
Function	Detect movements: rotation speed and rotation direction		
Compatibility	Electronic transmission management		

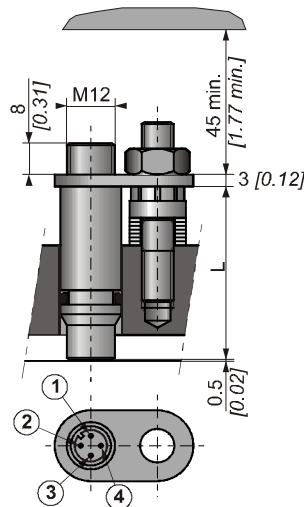
(*) : According to the size of the motor, consult your Poclain Hydraulics sales engineer

Features

Supply voltage	8 - 32 V
Output type	- 2 push-pull shifted square frequency signals (phase shift from 25° to 155°) - Maximum load current: 20 mA - Voltage at low state: < 1.5 V - Voltage at high state: > (power supply voltage - 3.5 V)
Signal type	Frequency 1  Frequency 2 
Maximum range	1.15 mm [0.045"]
Current consumption	20 mA max.
Frequency range	0 to 15 kHz
Instantaneous frequency deviation	10% with sensor mounted on Poclain Hydraulics motors
Operating temperature	- 40°C to + 125°C [- 40°F to 257°F]
Material	Stainless steel housing
Protection rating	IP68 (sensitive side) / IP67 (connector side)
Electrical protection	Protected against reverse polarity, short circuit to ground and supply
Mean Time To Failure (MTTF)	717 years with operating profile of 21% (8h per day, 229 days per year) Calculated according ISO13849-1 with component database SN29500
Mean Time To Dangerous Failure (MTTFd)	1 434 years



Layout



Installation

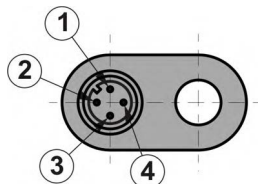
Disconnecting the accessories and speed set up

In the case of motors predisposed to speed, the existing shutter needs to be removed and eliminated before installing the sensor and its attachment device.

To install the sensor, see the "Installation guide" brochure No. B61352L.

Connection of the speed sensor

Remove the plastic plug on the connector.



Function	Pin number
Power supply	1
Square frequency signal n°2	2
Ground	3
Square frequency signal n°1	4

For the connection of connectors, please refer to the connection table and the general cabling plan contained in the installation brochure for your transmission.

Electrical connections	90°	180°
Commercial name	ELEC-CABLE-M12-90°-5000	ELEC-CABLE-M12-180°-5000
Part number	A04999J	A07468S
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 In case of using an M12 90° cable (A04999J), pay attention to the alignment of the elbow with the sensor's bracket to avoid twisting the sensor's connector pins.

 The M12 nut must be tightened with a tightening torque from 0.6 Nm (hand-tight) to 1.5 Nm (using a torque wrench). An excessive tightening can damage the M12 connector.

 Sensor must be powered on after installation (fixing on motor's cover and counterpart connector assembled).



SPEED SENSOR TD WITH CABLE



✓ Detection of the rotation direction.

Commercial name	SPD-SENS-TD-12-44-L450	SPD-SENS-TD-12-53-L450	SPD-SENS-TD-12-62-L450
Part number (brass housing)	B62903W	B62904X	B77693X
Length L(*)	44 [1.73]	53 [2.09]	62 [2.44]
Function	Detect movements: rotation speed and rotation direction		
Compatibility	Electronic transmission management		

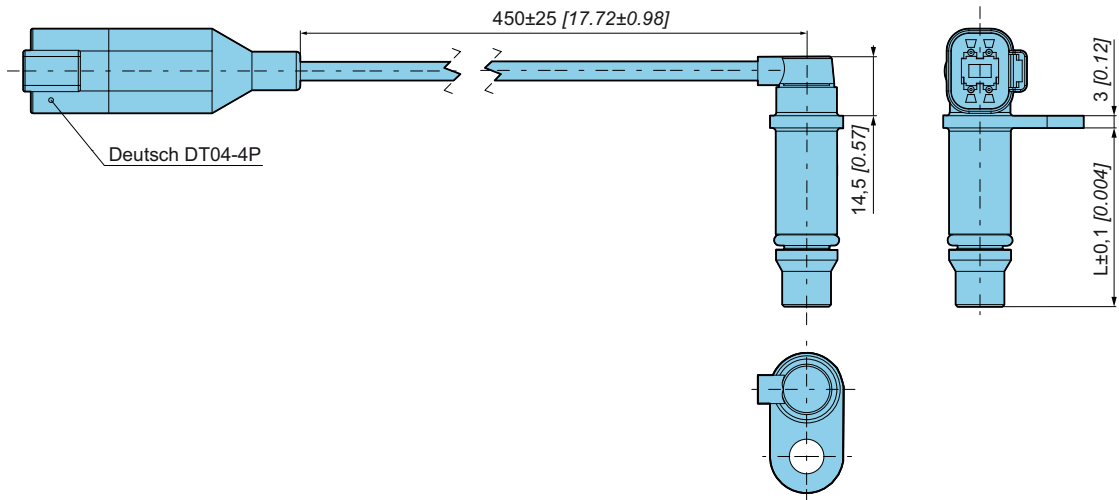
(*) : According to the size of the motor, consult your Poclain Hydraulics sales engineer

Features

Supply voltage	8 - 32 V
Output type	- 2 push-pull shifted square frequency signals (phase shift from 25° to 155°) - Maximum load current: 20 mA - Voltage at low state: < 1.5 V - Voltage at high state: > (power supply voltage - 3.5 V)
Signal type	Frequency 1  Frequency 2 
Maximum range	1.15 mm [0.045"]
Current consumption	20 mA max.
Frequency range	0 to 15 kHz
Instantaneous frequency deviation	10% with sensor mounted on Poclain Hydraulics motors
Operating temperature	- 40°C to + 125°C [- 40°F to 257°F]
Material	Brass housing
Protection rating	IP68 (sensitive side) / IP69K with mating connector (connector side)
Electrical protection	Protected against reverse polarity, short circuit to ground and supply
Mean Time To Failure (MTTF)	717 years with operating profile of 21% (8h per day, 229 days per year) Calculated according ISO13849-1 with component database SN29500
Mean Time To Dangerous Failure (MTTFd)	1 434 years



Layout



Installation

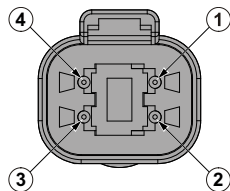
Disconnecting the accessories and speed set up

In the case of motors predisposed to speed, the existing shutter needs to be removed and eliminated before installing the sensor and its attachment device.

To install the sensor, see the "Installation guide" brochure No. B61352L.

Connection of the speed sensor

Deutsch connector : DT04-4P



Function	Pin number
+Vdc	1
Ground GND	2
Frequency output S1	3
Frequency output S2	4

For the connection of connectors, please refer to the connection table and the general cabling plan contained in the installation brochure for your transmission.

Electrical connections

Commercial name	KIT-CONNECT-4-PIN-DEUTSCH
Part number	A39961L

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SPEED SENSOR TH



✓ High resolution speed sensor

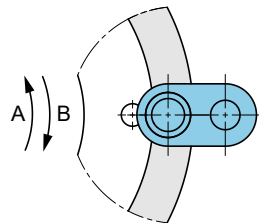
Commercial name	SPD-SENS-TH-12-44-P1-DTM4	SPD-SENS-TH-12-53-P1-DTM4	SPD-SENS-TH-12-62-P1-DTM4
Part number	B75159T	B75160U	B75161V
Length L(*)	44 [1.73]	53 [2.09]	62 [2.44]
Hydraulic motor compatibility	MK04 (**)		
Function	Detect movements: High rotation speed and rotation direction		
Compatibility	Electronic transmission management		

(*) : According to the size of the motor, consult your Poclain Hydraulics sales engineer.

(**) : In case of request for other motors, please contact your Poclain Hydraulics application engineer in matter of feasibility.

Features

Supply voltage	9 - 32 V
Current consumption	20 mmax. no load
Protection	Overvoltage (36 V DC), reverse voltage (36 V DC)
Output type	- 2 push-pull square wave signal - Max. load current: 20 mA per channel - Voltage at low state: < 0.9 V - Voltage at high state: > (power supply voltage - 3.5 V) - Output protected against short-circuits
Direction signal	The 2 output signals allow to determine the direction of the rotation.

Direction of rotation
AS1
S2Direction of rotation
BS1: Square wave signal 1
S2: Square wave signal 2

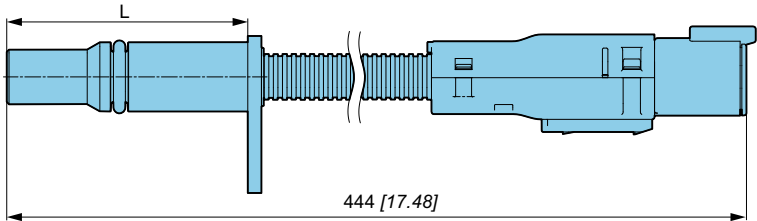
Frequency range	0 to 30 kHz
Resolution range	Resolution depends of the magnetic target ring that is assembled in the motor. The resolution is specific for each motor. - MK04: 888 pulses / rev - MS02: 960 pulses / rev *** - MHP27: 1 824 pulses / rev *** (***) : Product in development. Consult your Poclain Hydraulics sales engineer.
Speed measuring accuracy	± 3% typ.
Operating temperature	- 40°C to + 105°C [- 40°F to 221°F]
Material	Stainless steel
Protection rating	IP6K9K
EC certificate	NF EN 14982: Agricultural and forestry machinery - Electromagnetic compatibility NF EN ISO 13766-1: Earth-moving and building construction machinery - Electromagnetic compatibility (EMC) of internally powered machines NF EN 12895: Industrial trucks - Electromagnetic compatibility
Mean Time To Failure (MTTF)	208 years with operating profile of 21% (8h per day, 229 days per year) Calculated according ISO13849-1 with component database UTE C 80-810



Features

Mean Time To Dangerous Failure (MTTFd) 416 years

Layout

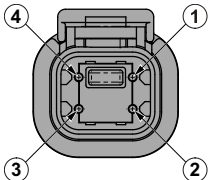


Installation

To install the sensor, see the "Installation guide" brochure No. B61352L.

Connection of the speed sensor

Deutsch connector: DTM04-4P



Function	Pin number
Ground	1
Output signal S2	2
+VBAT	3
Output signal S1	4

For the connection of connectors, please refer to the connection table and the general cabling plan contained in the installation brochure for your transmission.

Electrical connections

Commercial name	KIT-CONNECT-DTM-4S-NW8.5
Part number	B59113C

Electronic control units

Electronic components

Connectors

Cables



40 BAR PRESSURE SENSORS

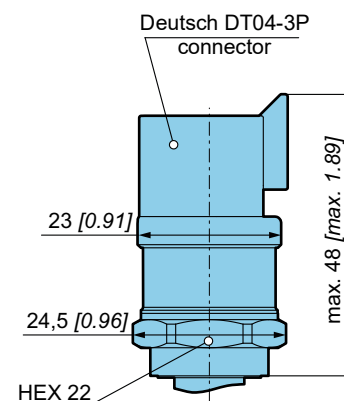
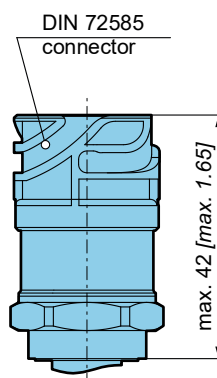
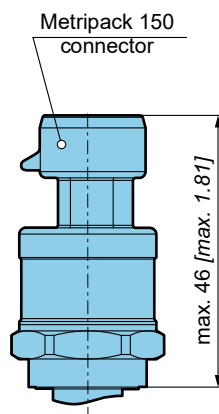


Commercial name	PRES-SENS-40B-G1/4-MP3	PRES-SENS-40B-G1/4-DIN	PRES-SENS-40B-G1/4-DT3
Part number	B58363M	B58368S	B57611U
Hydraulic connection	G1/4A	G1/4A	G1/4A
Electrical connection	Metripack 150 (3 pins)	DIN 72585 (3 pins, coding 1)	Deutsch DT04-3P
Ingress protection	IP67	IP6K9K	IP6K9K
Function	Measure the charge pressure		

Features

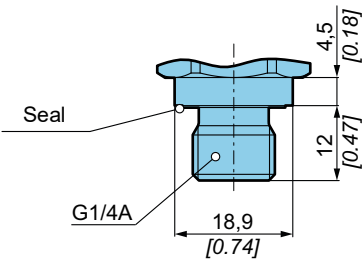
Supply voltage (Ub)	5V DC $\pm$ 5%
Output signal	10% ... 90% (0.5V ... 4,5V at Ub=5V DC)
Output load	> 5k Ohm
Pressure range	40 bar [580 PSI]
Over pressure safety	250 bar [3 626 PSI]
Response time	calibrated 1ms
Accuracy	< 1%
Using temperature range	Ambient - 40 °C to 105 °C [- 40 °F to 221 °F] Storage - 40 °C to 100 °C [- 40 °F to 212 °F] Medium - 40 °C to 125 °C [- 40 °F to 257 °F]
Electrical protection	Overvoltage: +28,8V Polarity inversion: -5,2V Against short circuits (GND and Ub)
CE conformity	EN 61000-6-1/2/3/4
Shock resistance	500 g (DIN EN 60068-2-27)
Vibration resistance	25 g (IEC 60068-2-6 from 10 to 500Hz)
Mean Time To Failure (MTTF)	546 years with operating profile of 21% (8h per day, 229 days per year)
Mean Time To Dangerous Failure (MTTFd)	1 092 years

Layout





Sensor connection



Tightening torque

Connection	Seal	N.m [lb.ft]
G1/4A (ISO 1179-2)	HNBR	20 (+5Nm) [14.75] (+3.69 lb.ft)

Pinout

Metripack 150 (3 pins) connector	DIN 72585 (3 pins, coding 1) connector	Deutsch DT04-3P connector
A: GND B: +Ub C: Signal	1: +Ub 2: GND 3: Signal	A: +Ub B: Signal C: GND

Electrical connection	Commercial name	Part number	
Cable for pressure sensor connection	CABLE-PRESSURE-SENSOR-3M	003141105U	page 51
Connector kit for DIN72585 connector	KIT-CONNECT-4-PIN-DIN72585	B02394B	page 45
Connector kit for DT04-3P connector	KIT-CONNECT-3-PIN-DEUTSCH	B62766X	page 45



When wiring, check that the wire can neither be cut off, nor torn off when the machine is working or moving.



160 BAR PRESSURE SENSORS

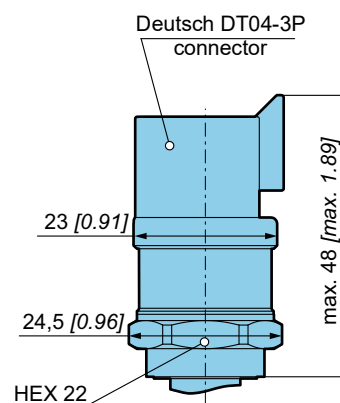
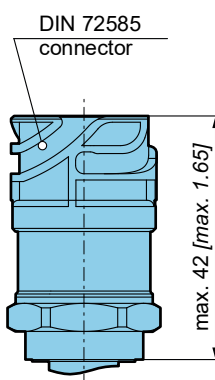
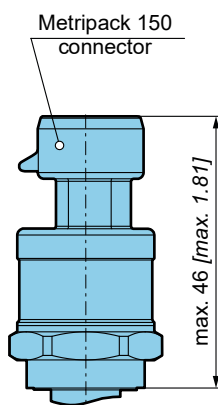


Commercial name	PRES-SENS-160B-M10-MP3	PRES-SENS-160B-M10-DIN	PRES-SENS-160B-M10-DT3	PRES-SENS-160B-G1/4-MP3	PRES-SENS-160B-G1/4-DIN
Part number	B58364N	B58369T	B57612V	B58365P	B58370U
Hydraulic connection	M10x1	M10x1	M10x1	G1/4A	G1/4A
Electrical connection	Metripack 150 (3 pins)	DIN 72585 (3 pins, coding 1)	Deutsch DT04-3P	Metripack 150 (3 pins)	DIN 72585 (3 pins, coding 1)
Ingress protection	IP67	IP6K9K	IP6K9K	IP67	IP6K9K
Function	Measure the pressure on the brake system				

Features

Supply voltage (Ub)	5V DC $\pm$ 5%
Output signal	10% ... 90% (0.5V ... 4,5V at Ub=5V DC)
Output load	> 5k Ohm
Pressure range	160 bar [2 320 PSI]
Over pressure safety	320 bar [4 640 PSI]
Response time	calibrated 1ms
Accuracy	< 1%
Using temperature range	Ambient - 40 °C to 105 °C [- 40 °F to 221 °F] Storage - 40 °C to 100 °C [- 40 °F to 212 °F] Medium - 40 °C to 125 °C [- 40 °F to 257 °F]
Electrical protection	Overvoltage: +28,8V Polarity inversion: -5,2V Against short circuits (GND and Ub)
CE conformity	EN 61000-6-1/2/3/4
Shock resistance	500 g (DIN EN 60068-2-27)
Vibration resistance	25 g (IEC 60068-2-6, from 10 to 500Hz)
Mean Time To Failure (MTTF)	546 years with operating profile of 21% (8h per day, 229 days per year)
Mean Time To Dangerous Failure (MTTFd)	1 092 years

Layout





Sensor connection

M10x1 (ISO 9974-2)	G1/4A (ISO 1179-2)

Tightening torque

Connection	Seal	N.m [lb.ft]
M10x1 (ISO 9974-1)	HNBR	20 (+2Nm) [14.75] (+1.47 lb.ft)
G1/4A (ISO 1179-2)		20 (+5Nm) [14.75] (+3.69 lb.ft)

Pinout

Metripack 150 (3 pins) connector	DIN 72585 (3 pins, coding 1) connector	Deutsch DT04-3P connector
A: GND B: +Ub C: Signal	1: +Ub 2: GND 3: Signal	A: +Ub B: Signal C: GND

Electrical connection	Commercial name	Part number	
Cable for pressure sensor connection	CABLE-PRESSURE-SENSOR-3M	003141105U	page 51
Connector kit for DIN 72585 connector	KIT-CONNECT-4-PIN-DIN72585	B02394B	page 45
Connector kit for DT04-3P connector	KIT-CONNECT-3-PIN-DEUTSCH	B62766X	page 45



When wiring, check that the wire can neither be cut off, nor torn off when the machine is working or moving.

Electronic control units

Electronic components

Connectors

Cables



600 BAR PRESSURE SENSORS

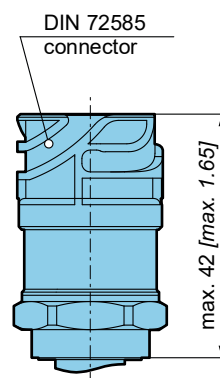
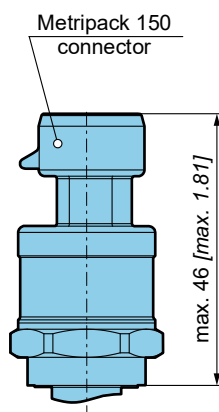


Commercial name	PRES-SENS-600B-9/16-MP3	PRES-SENS-600B-G1/4-MP3	PRES-SENS-600B-G1/4-DIN
Part number	B58366Q	B58367R	B58371V
Hydraulic connection	9/16-18 UNF-2A	G1/4A	G1/4A
Electrical connection	Metripack 150 (3 pins)	Metripack 150 (3 pins)	DIN 72585 (3 pins, coding 1)
Ingress protection	IP67	IP67	IP6K9K
Function	Measure the pressure on the high pressure system		

Features

Supply voltage (Ub)	5V DC $\pm$ 5%
Output signal	10% ... 90% (0.5V ... 4,5V at Ub=5V DC)
Output load	> 5k Ohm
Pressure range	600 bar [8 702 PSI]
Over pressure safety	1200 bar [17 404 PSI]
Response time	calibrated 1ms
Accuracy	< 1%
Using temperature range	Ambient - 40 °C to 105 °C [- 40 °F to 221 °F] Storage - 40 °C to 100 °C [- 40 °F to 212 °F] Medium - 40 °C to 125 °C [- 40 °F to 257 °F]
Electrical protection	Overvoltage: +28,8V Polarity inversion: -5,2V Against short circuits (GND and Ub)
CE conformity	EN 61000-6-1/2/3/4
Shock resistance	500 g (DIN EN 60068-2-27)
Vibration resistance	25 g (IEC 60068-2-6, from 10 to 500Hz)
Mean Time To Failure (MTTF)	546 years with operating profile of 21% (8h per day, 229 days per year)
Mean Time To Dangerous Failure (MTTFd)	1 092 years

Layout





Sensor connection

9/16-18 UNF-2A (ISO 11 926)	G1/4A (ISO 1179-2)
O-ring 9/16-18 UNF-2A 17,3 [0.68] 19,9 [0.78] 12 [0.47] 4,5 [0.18]	Seal G1/4A 18,9 [0.74] 12 [0.47] 4,5 [0.18]

Tightening torque

Connection	Seal / O-ring	N.m [lb.ft]
9/16-18 UNF-2A (ISO 11 926)	HNBR	20 (+5Nm)
G1/4A (ISO 1179-2)		[14.75] (+3.69 lb.ft)

Pinout

Metripack 150 (3 pins) connector	DIN 72585 (3 pins, coding 1) connector
A: GND B: +Ub C: Signal	1: +Ub 2: GND 3: Signal

Electrical connection	Commercial name	Part number	
Cable for Metripack connector	CABLE-PRESSURE-SENSOR-3M	003141105U	page 51
Connector kit for DIN72585 connector	KIT-CONNECT-4-PIN-DIN72585	B02394B	page 45



When wiring, check that the wire can neither be cut off, nor torn off when the machine is working or moving.

Electronic control units

Electronic components

Connectors

Cables



ANALOG TEMPERATURE SENSORS



Commercial name	TEMP-SENS-G1/4-M12-7	TEMP-SENSOR-G1/4-DIN-7	TEMP-SENSOR-G1/4-DIN-52
Part number	B45088H	B31477N	B00091X
Compatibility	Electronic transmission management		
Features			
Supply voltage (Vs)	5V ± 0.5V		
Output signal	0.5V to 4.5V ratiometric Saturation at 0.4V for temperatures <-23°C [-9.4F]		
Response time	4 s for 50°C [122°F] step 8 s for 90°C [194°F] step		
Accuracy	≤ ± 3% FS		
Permissible pressure	600 bar [8702 PSI]		
Measuring range	-20 to +120°C [-4 to +248°]		
Using temperature range	Medium - 40 °C to 120 °C [- 40 °F to 248 °F]		
	Ambient - 40 °C to 100 °C [- 40 °F to 212 °F]		
	Storage - 40 °C to 100 °C [- 40 °F to 212 °F]		
Housing material	Stainless steel 1,4571		
Electrical connection	M12 - 4 pins	DIN 72585 - 4 pins coding 1	
Ingress protection	IP67	IP6K9K	
Electrical protection	Overvoltage: 14V		
	Reverse polarity		
	Against short circuits (0V and Vs)		
Mean Time To Failure (MTTF)	682 years with operating profile of 21% (8h per day, 229 days per year)		
Mean Time To Dangerous Failure (MTTFd)	1 364 years		

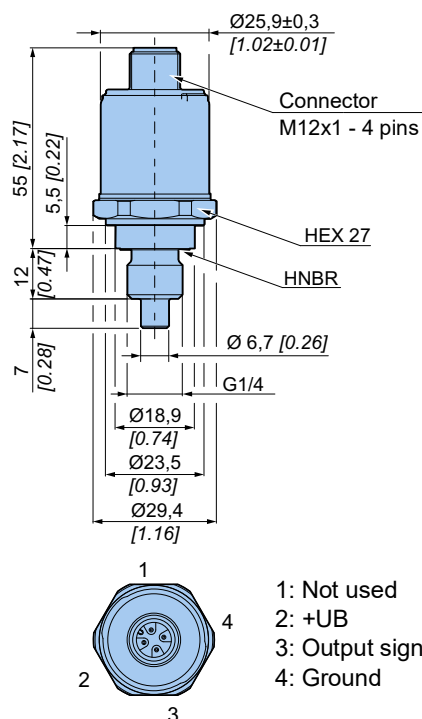
Mounting

To obtain a good temperature reading put the sensitive part of the sensor in the heart of the fluid stream.

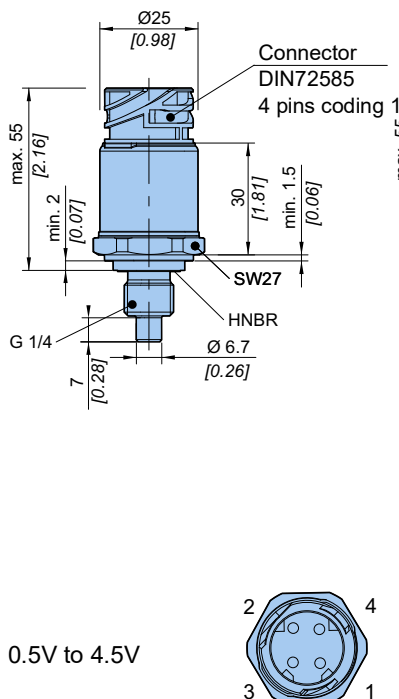


Layout

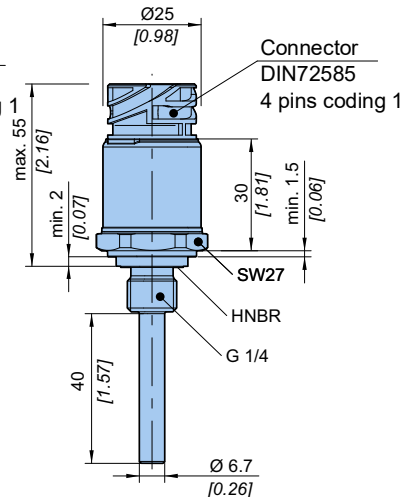
TEMP-SENS-G1/4-M12-7



TEMP-SENSOR-G1/4-DIN-7



TEMP-SENSOR-G1/4-DIN-52



Electronic control units

Electronic components

Hydraulic connection

Connection	Seal	N.m [lb.ft] ± 10 %
G 1/4"	HNBR	20 [14.8]

Electrical connection DIN

Commercial name	KIT-CONNECT-4PIN-DIN72585
Part number	B02394B
	page 71

Electrical connection M12

	90°	180°
Commercial name	ELEC-CABLE-M12-90°-5000	ELEC-CABLE-M12-180°-5000
Part number	A04999J	A07468S
	page 52	page 52



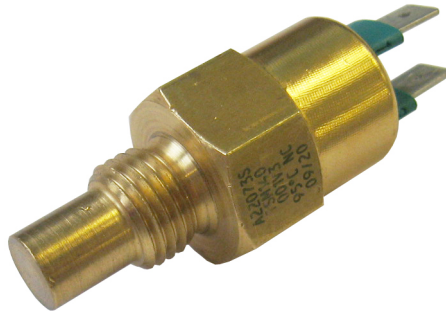
When wiring, check that the wire can neither be cut off, nor torn off when the machine is working or moving.

Connectors

Cables



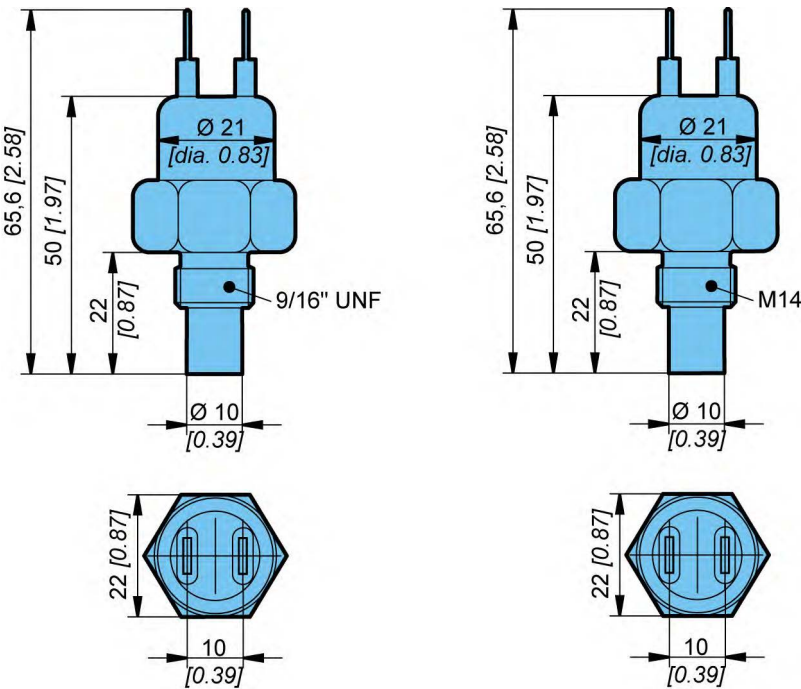
THERMOCONTACT



Commercial name	TEMP-SENSOR-M14-90C-NC	TEMP-SENSOR-9/16-90C-NC
Part number	B37087L	B37088M
Compatibility	Electronic transmission management	
Fonction	Measure the temperature of the hydraulic circuit	
Features		
Threshold of temperature	90°C ± 3°C [194°F± 37.4°F]	
Hysteresis	< 20°C [<68°F]	
Type of contact	switch opens with increasing temperature	
Max. voltage	30 Volt	
Max. current	Ohmic load 16A and inductive load 10A	
Using temperature range	-40 to +130°C [-40 to +266°F]	
Max. pressure	100 bar [1 450 PSI]	
Ingress protection	IP67	
Housing material	CuZn38Pb2	



Layout 9/16" UNF M14



Electronic control units

Electronic components

Hydraulic connection

Connection	O'ring	N.m [lb.ft] ± 10 %
M14 x 1,5	-	20 [14.7]
9/16" UNF	-	

Electrical connection

Terminal blades 6,3 x 0,8 [0.25 x 0.03]



When wiring, check that the wire can neither be cut off, nor torn off when the machine is working or moving.

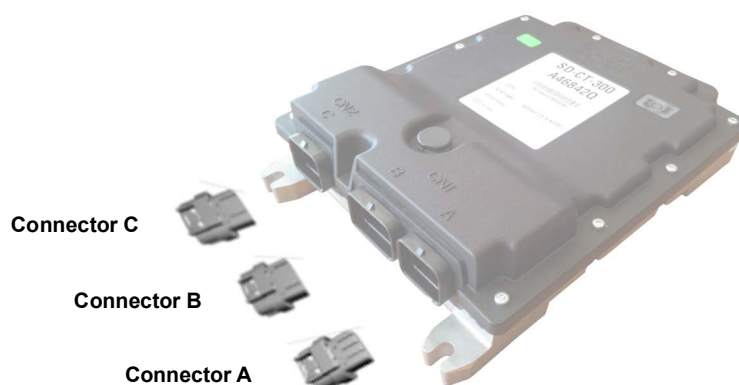
Connectors

Cables





SMARTDRIVE™ CT MAIN CONNECTOR



Characteristics	SD-CT-200	SD-T-300
Commercial name	KIT-CONNECT-SD-CT-200	KIT-CONNECT-SD-CT-300
Poclain Hydraulics part number	A48149L	A48140B
Function	SmartDrive™ CT controller's Counter-part connectors	
Compatibility	Electronic transmission management with SmartDrive™ CT controller	

Component	AMP reference			
Connector A		1473416-1	x1	x1
Connector B		4-1437290-1	x1	x1
Connector C		3-1437290-7	0	x1
Sockets		3-1447221-3	x65	x90
Stoppers		4-1437284-3	x50	x75
Wire section	0,75 to 1,25 mm ² [0.00116 to 0.00194 in ²]			
Insulation diameter	for wire section 0,75 to 1,25 mm ² [0.00116 to 0.00194 in ²] : 1,6 to 2,4 mm [0.063 to 0.094 in]			
Operating temperature	-40°C to 85°C [-40°F to 185°F]			
Ingress Protection	IP67			

Mounting tools for the connector

Description	AMP reference
Crimpers	 1454509-1

Electronic control units

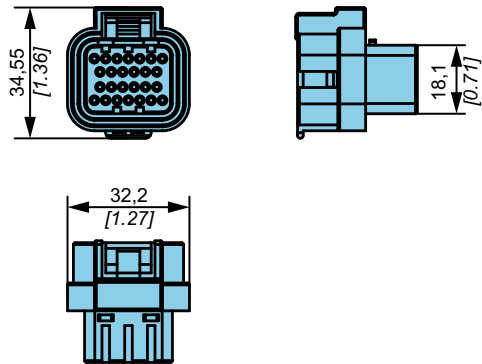
Electronic components

Connectors

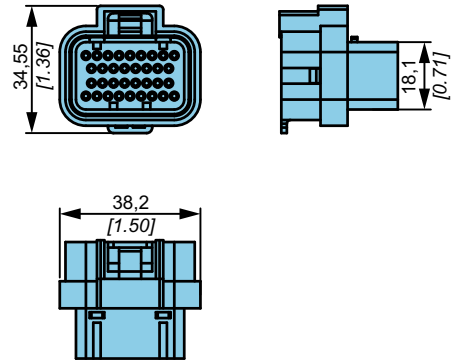
Cables

**Overall dimensions**

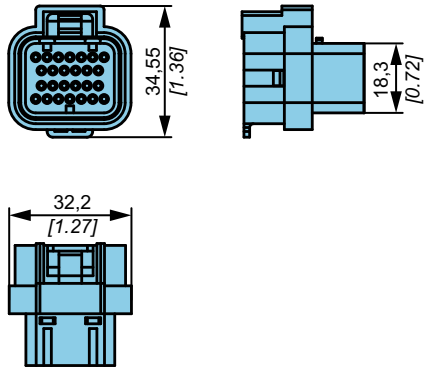
Connector A: 1473416-1



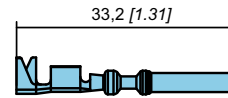
Connector B: 4-1437290-1



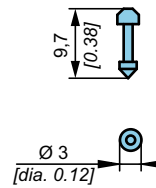
Connector C: 3-1437290-7



Socket: 3-1447221-3



Stopper: 4-1437284-3





SMARTDRIVE™ CT COMMUNICATION CONNECTOR



This connector has to be present on the machine to permit SmartDrive™ CT maintenance.

Commercial name	KIT-CONNECT-COM-M-SD-CT
Part number Poclain Hydraulics	A48693C
Function	Diagnosis and download the software embedded in the SmartDrive™ CT controller via CAN bus
Compatibility	Electronic transmission management with SmartDrive™ CT controller
Manufacturer	DEUTSCH

Features	DEUTSCH reference		
Components		1x Receptacle	HD10-9-1939PE
		1x Closing cap	HDC9-JDL082397
		1x Gasket	HD10-9-GKT
		7x Pin	0460-202-1631 (AWG16-20)
		4x Stopper	114-017
Operating temperature	For the connector: -55°C to 125°C [-67°F to 257°F] For the gasket: -57°C to 107°C [-70.6°F to 224.6°F]		
Ingress Protection	IP67		
Wire section	0,5 to 1.0 mm ² [0.019 to 0.039 in ²] (16, 18, 20 AWG)		
Insulation diameter	1,35 to 3,05 mm [0.053 to 0.12 in]		

Mounting tools for the connector

Description	AMP reference	
Crimpers		HDT-48-00
Extractor		0411-310-1605

Electronic control units

Electronic components

Connectors

Cables

**Connector mounting**

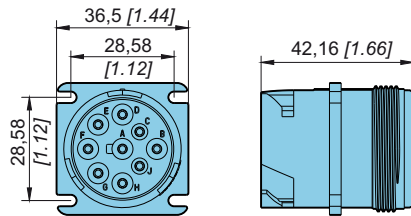
Strip the wires to a length of 5 mm [0.19 in].

Crimp the wires onto the pins as shown in the table below.

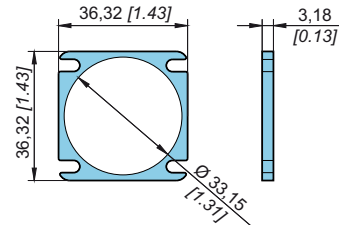
N° pin connector on SmartDrive™ CT controller		Function	N° pin male communication connector
		Ground	A
		VBAT_P	B
CAN 2 vehicle	Connector B pin 10	CAN2 H	C
	Connector B pin 18	CAN2 L	D
-	-	-	E
-	-	-	F
-	-	-	G
CAN 1 diagnosis	Connector B pin 1	CAN 1 H	H
	Connector B pin 2	CAN 1 L	J

Overall dimensions

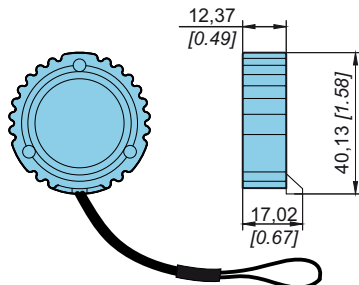
Receptacle: HD10-9-1939PE



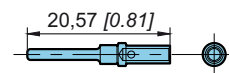
Gasket: HD10-9-GKT



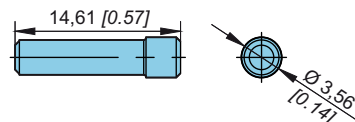
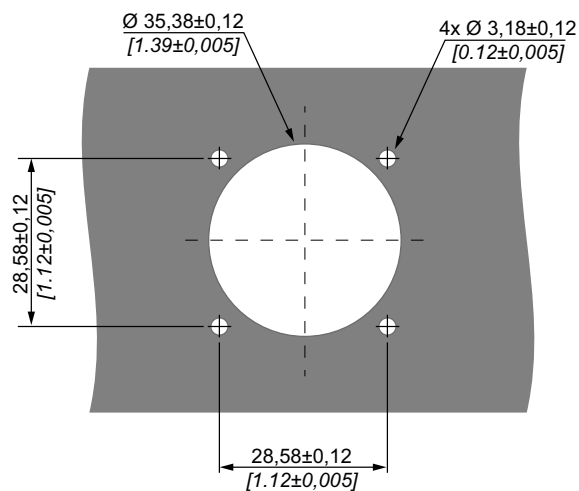
Cap: HDC9-JDL082397



Pin: 0460-202-1631



Stopper: 114017

**Panel cutout**

Maximum panel thickness: 6,35 mm [0.25 in]



CONNECTOR KIT 120Ω

Commercial name	KIT-PLUG-120-DTM-2S
Part number	A52539H
Function	120Ω termination resistor for CAN bus
Compatibility	Electronic transmission management with SmartDrive™ CT controller
Manufacturer	DEUTSCH

Features	DEUTSCH reference		
Components			
		1x Receptacle	DTM04-2P-P007
		2x Connector	DMT06-2S
		1x Wedgelock	WM-2S
		1x Wedgelock	WM-2SB
		1x Connector with integrated resistance	DMT06-2S-EP10
		7x Sockets	0462-201-2031
Operating temperature	-55°C to 125°C [-67°F to 257°F]		
Wire section	0,2 to 0,5 mm ² [0.008 to 0.019 in ²]		
Insulation diameter	1,35 to 3,05 mm [0.053 to 0.12 in]		
Pin material	Gold plated		
Contact size	20		

Mounting tools for the connector

Description	AMP reference
Crimpers	HDT-48-00



Electronic control units

Electronic components

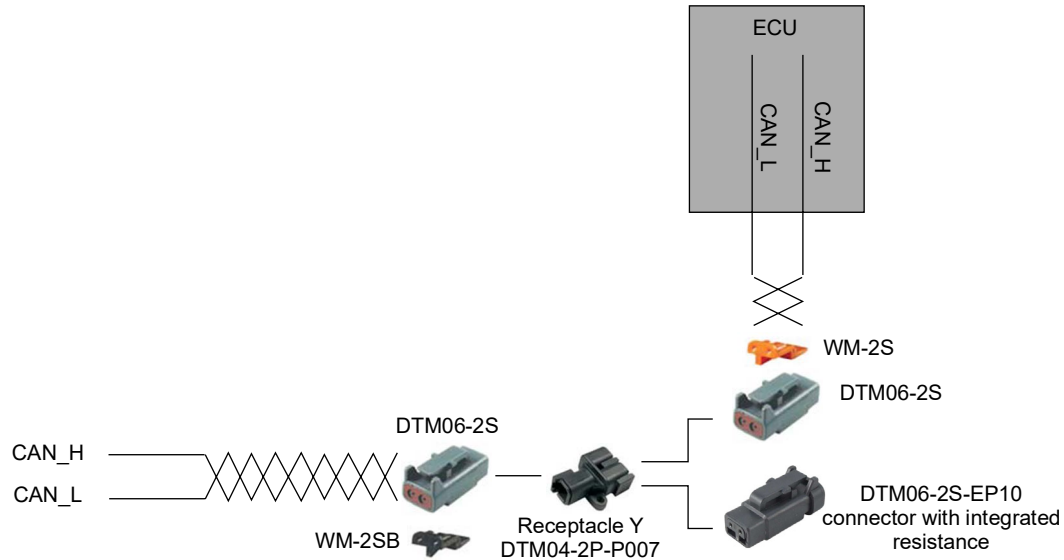
Connectors

Cables

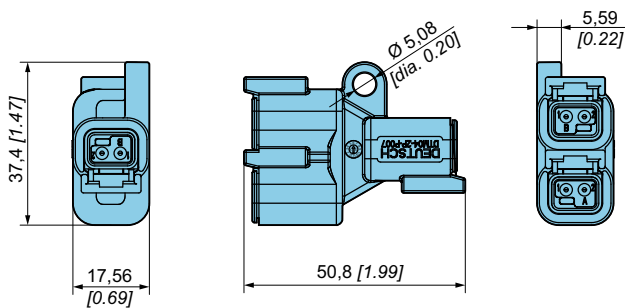
**Connector mounting**

Strip the wires to a length of 5 mm [0.19 in].

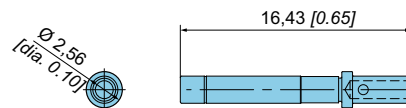
Crimp the wires onto the sockets as shown in the diagram below.

**Dimensions**

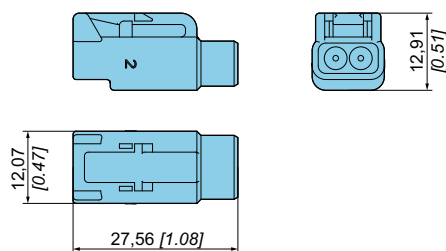
Receptacle Y: DTM04-2P-P007



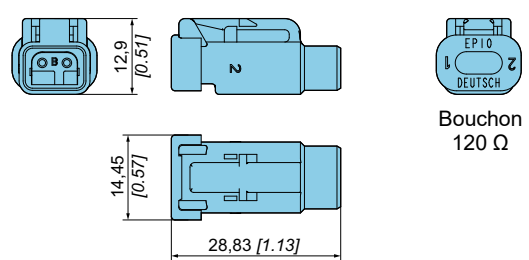
Socket: 0462-201-2031



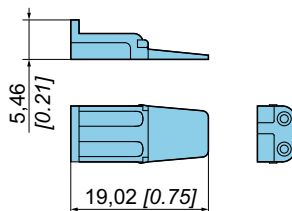
Connector: DTM06-2S



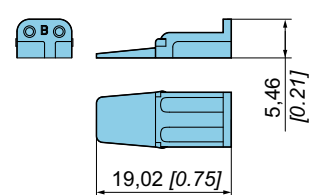
Connector with integrated resistance: DTM06-2S-EP10



Orange wedgelock: WM-2S



Black wedgelock: WM-2SB





3-PIN WEATHER PACK CONNECTOR



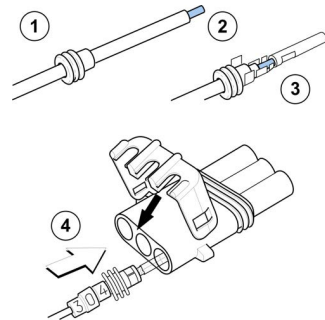
Commercial name	KIT CONNECTEUR CAPT CDE SA
Part number	007142212Z
Compatibility	Floor pedal. Suspended pedal. Swash plate sensor.

Features		
Manufacturer	DELPHI reference	
	1x 3-way male connector	1201 5793
Components	3x Female contact	1208 9188
	3x Seal	1201 5323
Wire section	0.5 to 0.8 mm ²	
Insulation diameter	2 to 2.9 mm	
Operating temperature	-40°C to +125°C [-40°F to +257°F]	
Ingress protection	IP 67	

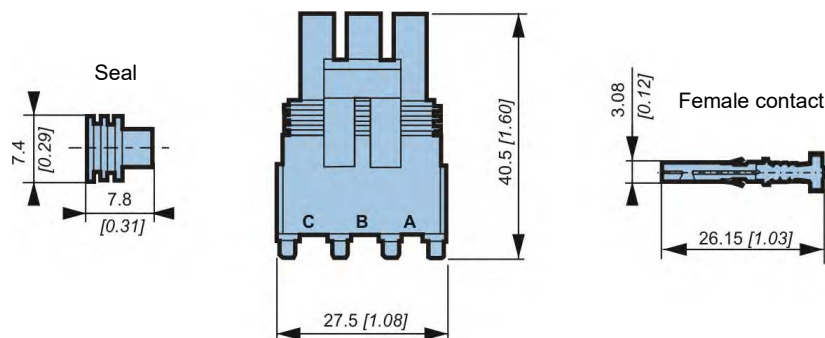
Connector mounting

Locking device position

1. Fit a seal on each wire.
2. Strip 5 mm [0.19 in] off the wires.
3. Crimp the terminals with the 1201 4254 Packard Electric pliers, pinching the seal with the lug.
4. Plug the terminal into its compartment. If a terminal is wrongly inserted, use extraction tool Ref 1201 4012 to remove it.
Fold down the connector latch.



Layout



Electronic control units

Electronic components

Connectors

Cables



3-PIN METRI PACK CONNECTOR

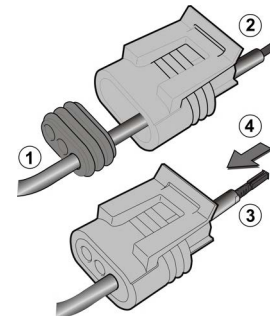


Commercial name	KIT CONNECTEUR CAPT VIRAGE
Part number	007142222K
Compatibility	Floor pedal.
Manufacturer	DEPLHI

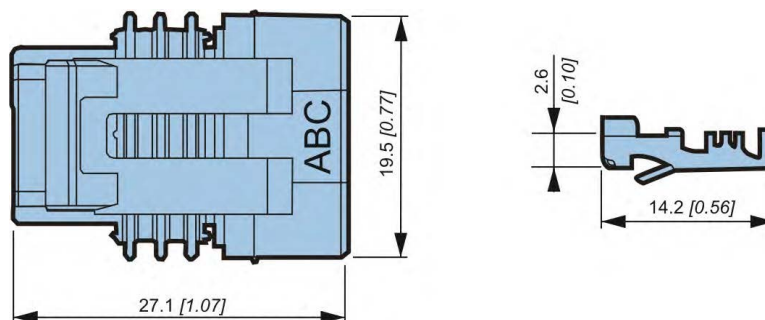
Features	DELPHI reference
Components	1x 3-way terminal connector 4x Terminal
Wire section	0.35 to 0.60 mm ²
Insulation diameter	1.30 to 2.20 mm
Operating temperature	-40°C to +125°C [-40°F to +257°F]
Ingress protection	IP67

Connector mounting

1. Pass the wires through the connector.
2. Strip 5 mm from the wires.
3. Crimp the terminals with special tool 1203 9500.
4. Pull the wires towards the connector to fit the terminals into their housing.



Layout





6-PIN METRI PACK CONNECTOR

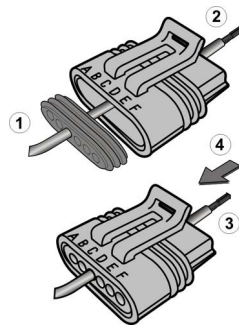


Commercial name	KIT-CONNECT-6-PIN-MP
Part number	A38140G
Compatibility	Joystick with Z-gate
Manufacturer	DEPLHI

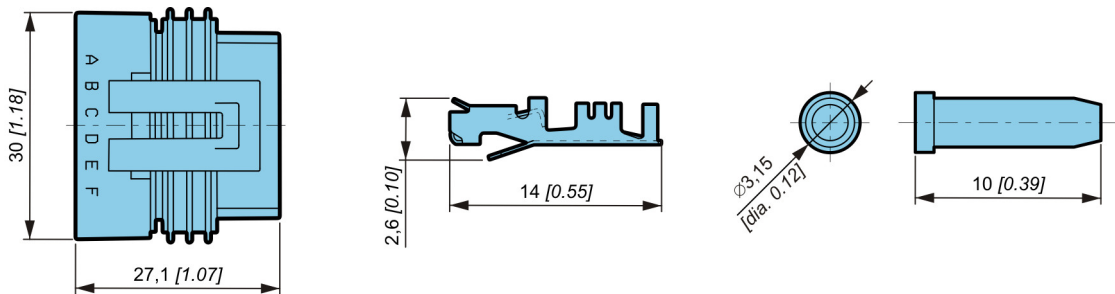
Features		DEPLHI reference
Components	1x Connector	1206 6317
	7x Pin	1210 3881
	3x Stopper	1206 5266
Wire section	0,8 to 1,0 mm ²	
Insulation diameter	2,03 to 2.40 mm	
Operating temperature	-40°C to +125°C [-40°F to +257°F]	
Ingress protection	IP67	

Connector mounting

1. Pass the wires through the connector.
2. Strip 5 mm from the wires.
3. Crimp the terminals with special tool 1203 9500.
4. Pull the wires towards the connector to fit the terminals into their housing.



Layout





EN 175301 - 803 STYLE A CONNECTOR

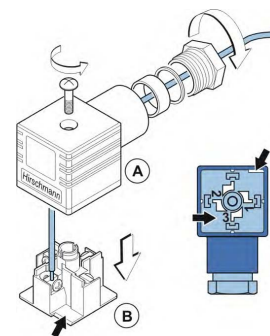


Commercial name	KIT CONNECT CDE SA
Part number	007142211X
Compatibility	Proportional control electro-valve. Electro-valve solenoid control.
Manufacturer	Hirschmann

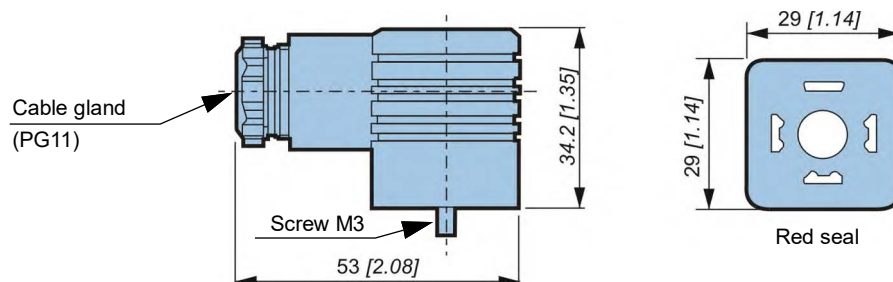
Features	Hirschmann reference
Standard	EN 175301 - 803 style A (DIN 43650)
Components	2x Connector 2x Screw 2x Gasket
Max. current	16 A
Max. voltage	250 V (AV)
Wire section	max. 1.5 mm ²
Cable diameter	6 mm [0.24 in] to 9 mm [0.35 in]
Operating temperature	-40°C to +125°C [-40°F to +257°F]
Ingress Protection	IP65

Connector mounting

1. Unscrew the packing gland and the screw.
2. Open the connector with a flat-headed screwdriver inserted in part B of the slot.
Strip the wire over a length of 5 mm [0.19 in].
Pass the wire through the gland, then through the cover A.
Plug the wire into B. Wire No.3 has to be earthed.
3. Re-assemble B and A: The "3" mark has to be nearest the gland.
Refit the packing gland and the screw.



Layout





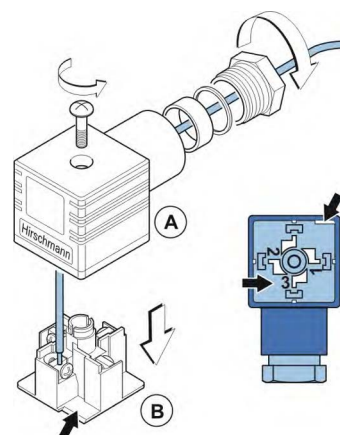
EN 175301 - 803 STYLE A CONNECTOR WITH DIODE



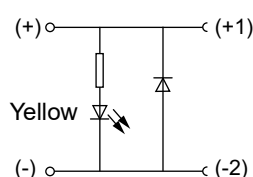
Commercial name		CONNECTOR-GDML-DIODE
Part number	A37605A	
Compatibility	On/Off control electro-valve.	
Manufacturer	Hirschmann	
Features		Hirschmann reference
Standard	EN 175301 - 803 style A (DIN 43650)	
Components	1x Connector	GDML 2011 LED 24 HH YE
	1x Screw M3x35	
	1x Gasket	GDM 3-7
Max. current	8 A	
Max. voltage	24 V DC (use 12 V and 24 V DC)	
Wire section	max. 1.5 mm ²	
Cable diameter	4.5 to 11 mm	
Operating temperature	-40°C to +90°C [-40°F to +194°F]	
Ingress Protection	IP65	

Connector mounting

1. Unscrew the packing gland and the screw.
2. Open the connector with a flat-headed screwdriver inserted in part B of the slot.
Strip the wire over a length of 5 mm [0.19 in].
Pass the wire through the gland, then through the cover A.
Plug the wire into B. Wire No.3 has to be earthed.
3. Re-assemble B and A: The "3" mark has to be nearest the gland.
Refit the packing gland and the screw.



You should respect the polarity as shown in the diagram below.



Electronic control units

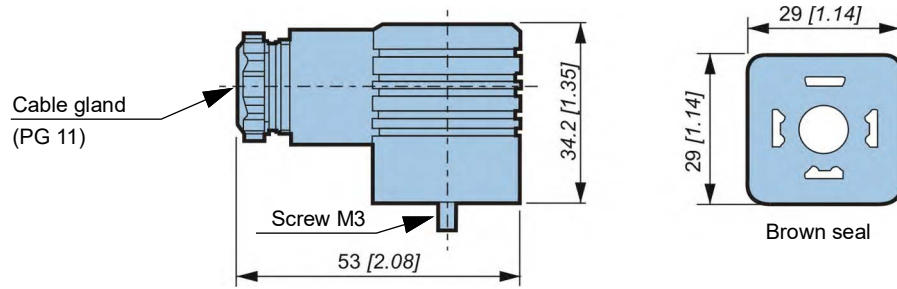
Electronic components

Connectors

Cables

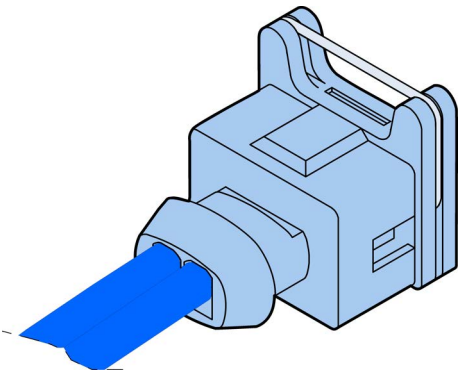


Layout





2-PIN AMP TIMER JUNIOR CONNECTOR

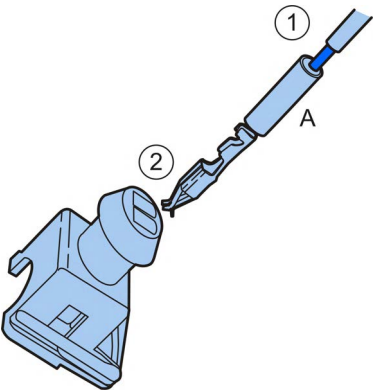


Commercial name	VMA CONNECTOR VALVE KIT
Part number	007142206S
Compatibility	In-line valve. Flanged valve.
Manufacturer	AMP

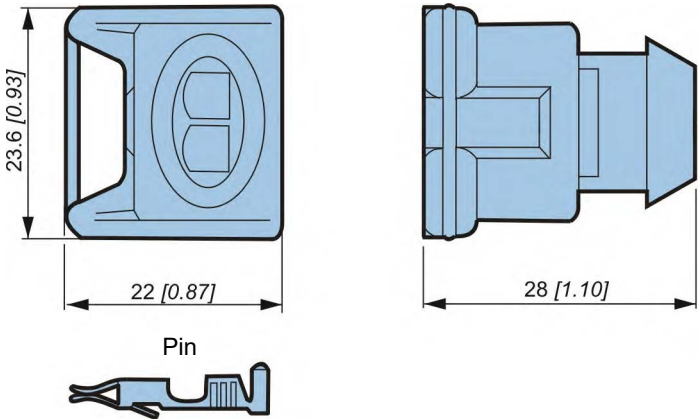
Features		AMP reference
Components	3x Contact	927 846 - 2
	1x Body connector	827 551 - 3
Wire section	0.5 to 1 mm ²	
Insulation diameter	1.4 to 2.1 mm	

Connector mounting

- Strip 5 mm [0.19 in] of insulation off the cables. Crimp the lugs using an AMP CERTI-LOCK 169400 tool. Protect the connection with heat-shrink tubing (A), or Rislon fixed plastic tubing.
- Refer to your general wiring diagram, inserting each lug into its housing until it clicks into place.



Layout



Electronic control units

Electronic components

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Cables



2-PIN DEUTSCH DT CONNECTOR



Commercial name	KIT-CONNECT-2-PIN-DEUTSCH	
Part number	A42310P	
Compatibility	PM and PH1 pump	
Manufacturer	DEUTSCH	

Features		DEUTSCH reference
Components	1x Connector	DT06-2S
	1x Wedgelock	W2S-P012
	3x Socket contact	0462-201-16141
Wire section	0.5 to 0.1 mm ²	
Cable diameter	2.23 to 3.68 mm	
Operating temperature	-55°C to +125°C [-40°F to +257°F]	
Ingress Protection	IP67	

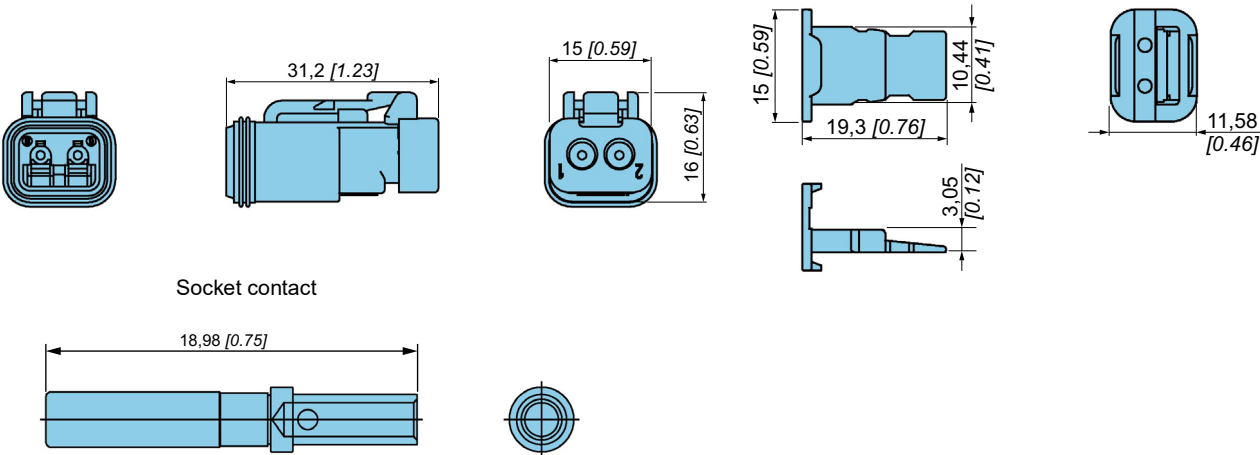
Mounting tool

Crimp tool: HDT-48-00

Layout

Connector

Wedgelock





3-PIN DEUTSCH DTM CONNECTOR



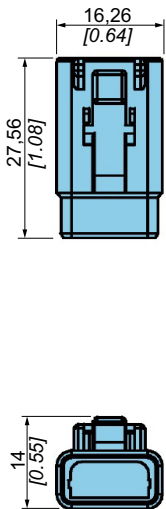
Commercial name	KIT-CONNECT-DTM-3S-NW8.5
Part number	B02468G
Compatibility	Position sensor
Manufacturer	DEUTSCH

Features		DEUTSCH reference
Components	1x Connector	DTM 06-3S
	1x Backshell 180° NW8.5	1028-005-0305
	1x Wedglock	WM-3S
	4x Contact	0462-201-20141
Wire section	0.2 to 0.5 mm ²	
Cable diameter	1.35 to 3.05 mm	
Operating temperature	-55°C to +125°C [-40°F to +257°F]	
Ingress Protection	IP6K9K	

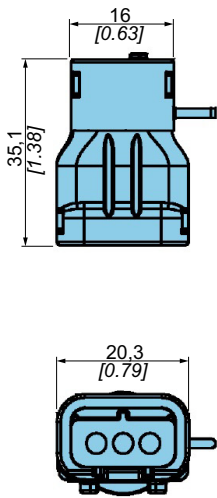
Mounting tool
Crimp tool: HDT-48-00

Layout

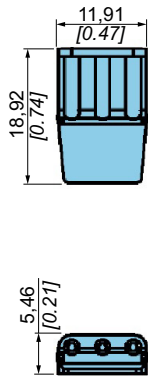
3 pins DTM connector



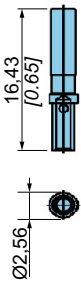
Backshell



Wedglock



Socket contact



Electronic control units

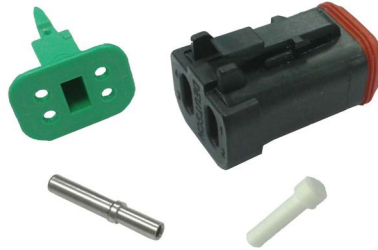
Electronic components

Connectors

Cables



4-PIN DEUTSCH DT CONNECTOR



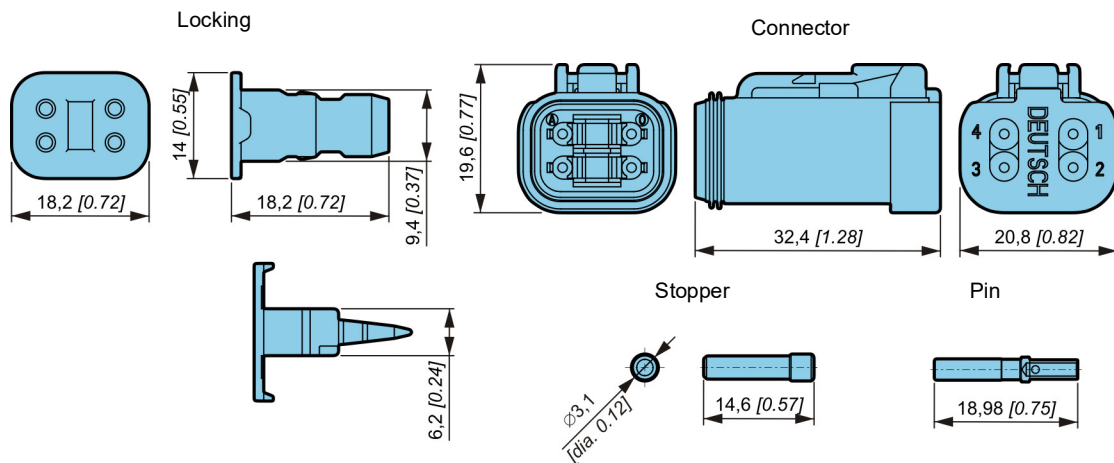
Commercial name	KIT-CONNECT-4-PIN-DEUTSCH
Part number	A39961L
Compatibility	Joystick with Z-gate
Manufacturer	DEUTSCH

Features	DEUTSCH reference
1x Connector	DT06-4S-EP06
5x Pin	0462-201-16141
1x Stopper	114017
1x Locking	W4S-P012
Wire section	0,5 to 1,0 mm ²
Insulation diameter	2,23 to 3.68 mm
Operating temperature	-55°C to +125°C [-67°F to +257°F]
Ingress protection	IP67

Mounting tools

Crimpers HDT-48-00

Layout





4-PIN DIN72585 IP6K9K CONNECTOR



Commercial name	KIT-CONNECT-4-PIN-DIN72585
Part number	B02394B
Compatibility	Pressure sensor, Temperature sensor
Manufacturer	TYCO

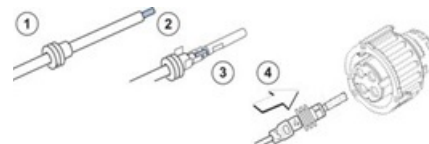
Features	TYCO reference
Components	1x DIN connector socket 4 pins
	1x Cap 90° NW8.5
	4x Socket contacts
	4x Single wire seals
	2x Cavity plugs
Wire section	0.5 to 1mm ²
Insulation diameter	1.2 to 2.1 mm [0.05 to 0.11 in]
Operating temperature	-40°C to +130°C [-40°F to 257°F]
Ingress protection	IP6K9K

Mounting tool

Crimp tool :AMP 734289-1

Connector mounting

1. Fit a seal on each wire
2. Strip 5 mm [0.19 in] off the wires.
3. Crimp the socket contacts with the 734289-1 hand tool pliers in position 2 for wire range 0.5 to 1mm², pinching the seal with the lug.
4. Plug the terminal into its compartment. If a terminal is wrongly inserted, use extraction tool AMP Ref. 1-1579007-8 to remove it.



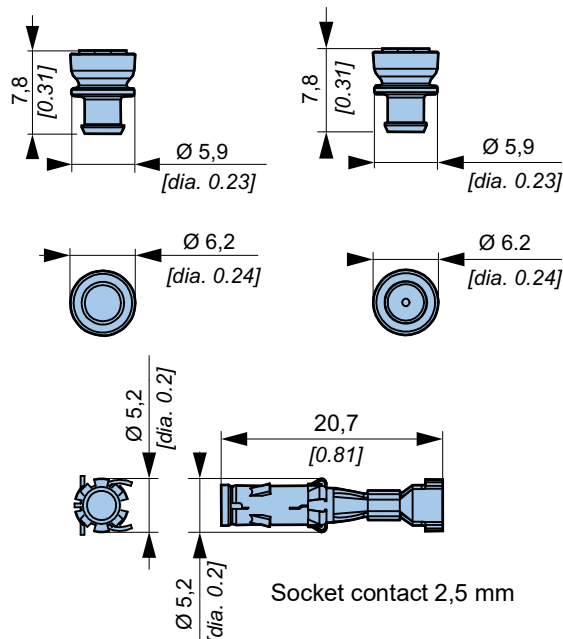
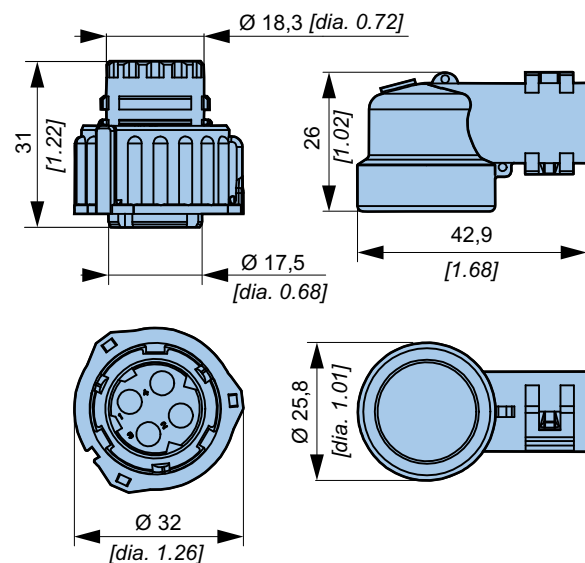
Layout

DIN connector socket 4 pins

Cap 90° NW8.5

Cavity plug

Single wire seal



Socket contact 2,5 mm

Electronic control units

Electronic components

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SMARTDRIVE™ CT CABLE

Commercial name	CABLE-SD-CT-200-60-5000	CABLE-SD-CT-300-86-5000
Part number	A48878D	A48877C
Function	Connect SmartDrive™ CT to the machine wiring and have a male communication connector.	
Compatibility	Transmission management with SmartDrive™ CT	
Features		
Length of cable	5m	5m
Operating temperature	- 40°C to 85°C [-40 °F to 185°F]	
Ingress protection	IP67 according to IEC 60529	
Number of wires	60	86
Number of stoppers	50 (Tyco ref: 4-1437284-3)	75 (Tyco ref: 4-1437284-3)
Wire section	0,75 mm² [0.029 in²] for signals 1 mm² [0.039 in²] for VBAT_P and power outputs 1,25 mm² [0.049 in²] for VBAT_D1, VBAT_D2, VBAT_D3 and -VBAT	
Insulation diameter	1,6 to 2,2 mm [0.063 to 0.086 in]	

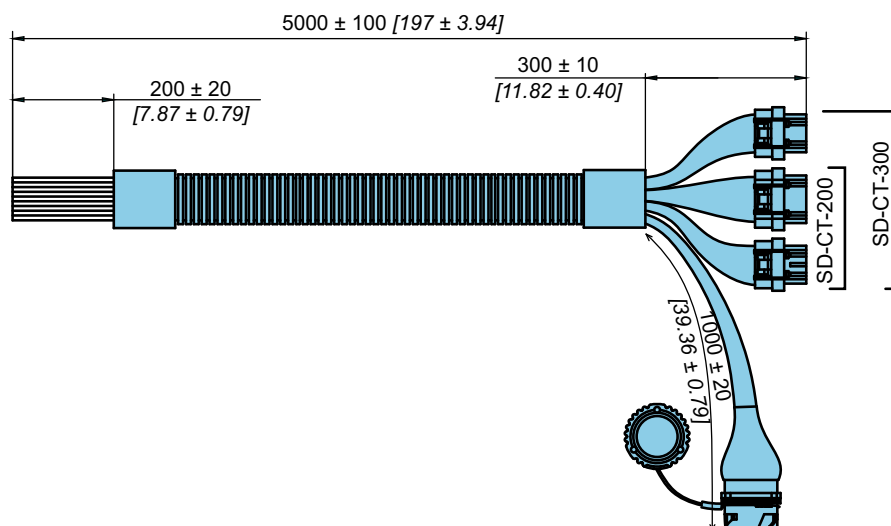
Each wire is numbered with locating pin and connector.

For the CAN bus, the identification is performed by different colour for each pin. (see table - CAN Wire colour)

CAN Wire colour

Function	Colour
CAN1_High	White
CAN1_Low	Green
CAN2_High	White
CAN2_Low	Red
CAN3_High	White
CAN3_Low	Blue

Dimensions



Unused wires should be individually insulated because of possible voltage.



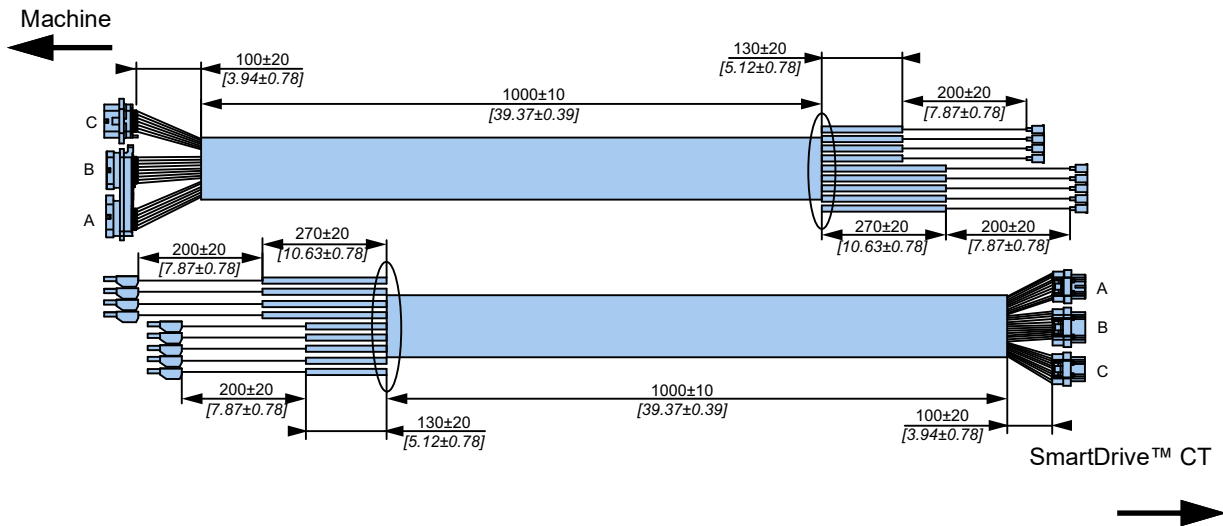
In case some wires are removed, stoppers must be inserted in connector cavity to ensure the sealing.



SMARTDRIVE™ CT TEST CABLE

Commercial name	CABLE-TEST-BOX-86-WAY-CT300
Part number	B04164A
Function	Check the wiring by isolation each wire between the machine and the Electronic Unit (workshop use)
Compatibility	Transmissions controlled by a unit in the SmartDrive™ CT range
Features	
Lenght of cable	3000 mm
Maximum volatge	32 VDC
Operating Temperature	-40 °C to 80 °C [-40 °F to 176 °F]
Material	PVC for wires, Polyester for Braided sheath
Number of wires	86
Section of wires	1 mm²

Layout



**Electrical wiring**

The wires of the cable are numbered and have different colors

Connector A SD-CT300

Number PIN	Number wire	Color wire
1	A-1	Green
2	A-2	Green
3	A-3	Green
4	A-4	Green
5	A-5	Green
6	A-6	Green
7	A-7	Green
8	A-8	Green
9	A-9	Green
10	A-10	Brown
11	A-11	Brown
12	A-12	Brown
13	A-13	Brown
14	A-14	Brown
15	A-15	Brown
16	A-16	Brown
17	A-17	Brown
18	A-18	Brown
19	A-19	Brown
20	A-20	Red
21	A-21	Red
22	A-22	Red
23	A-23	Red
24	A-24	Red
25	A-25	Red
26	A-26	Red

Connector A SD-CT300

Number PIN	Number wire	Color wire
61	C-1	Orange
62	C-2	Orange
63	C-3	Orange
64	C-4	Orange
65	C-5	Orange
66	C-6	Orange
67	C-7	Orange
68	C-8	Orange
69	C-9	Orange
70	C-10	White
71	C-11	White
72	C-12	White
73	C-13	White
74	C-14	White
75	C-15	White
76	C-16	White
77	C-17	White
78	C-18	White
79	C-19	White
80	C-20	Grey
81	C-21	Grey
82	C-22	Grey
83	C-23	Grey
84	C-24	Grey
85	C-25	Grey
86	C-26	Grey

Connector B SD-CT300

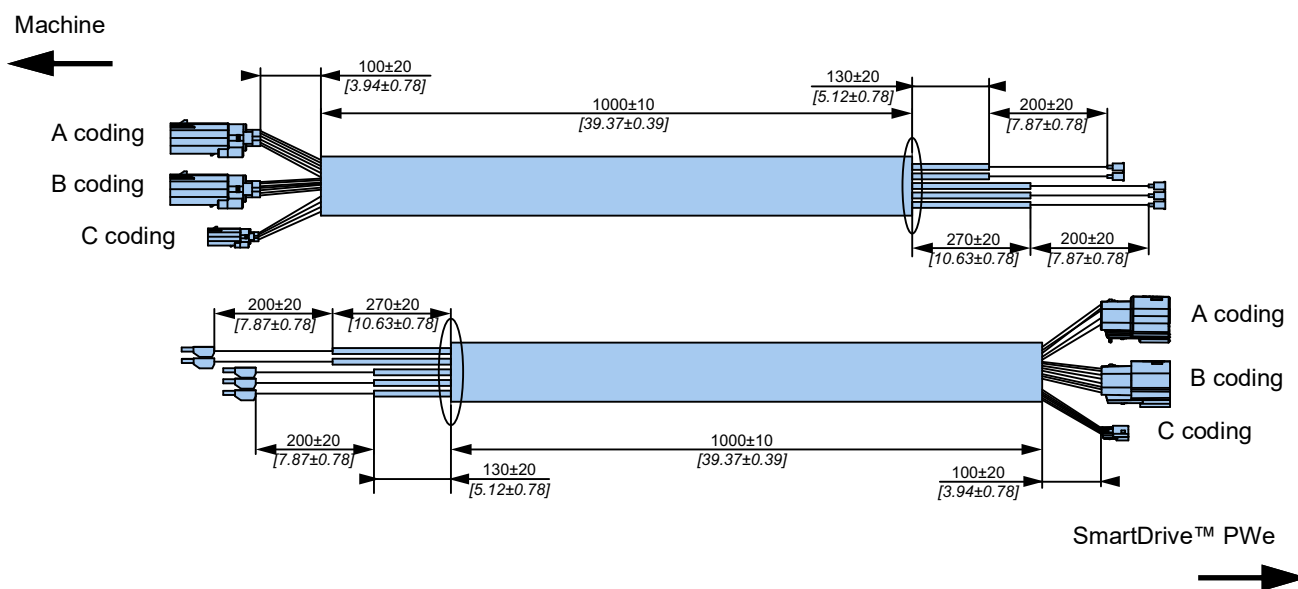
Number PIN	Number wire	Color wire
27	B-1	Red
28	B-2	Red
29	B-3	Red
30	B-4	Yellow
31	B-5	Yellow
32	B-6	Yellow
33	B-7	Yellow
34	B-8	Yellow
35	B-9	Yellow
36	B-10	Yellow
37	B-11	Yellow
38	B-12	Yellow
39	B-13	Yellow
40	B-14	Black
41	B-15	Black
42	B-16	Black
43	B-17	Black
44	B-18	Black
45	B-19	Black
46	B-20	Black
47	B-21	Black
48	B-22	Black
49	B-23	Black
50	B-24	Blue
51	B-25	Blue
52	B-26	Blue
53	B-27	Blue
54	B-28	Blue
55	B-29	Blue
56	B-30	Blue
57	B-31	Blue
58	B-32	Blue
59	B-33	Blue
60	B-34	Orange



SMARTDRIVE™ PWE TEST CABLE

Commercial name	CABLE-TEST-BOX-42-WAY-PWE
Part number	B04166C
Function	Check the wiring by isolation each wire between the machine and the Electronic Unit (workshop use)
Compatibility	Transmissions controlled by a unit in the SmartDrive™ PWE
Features	
Lenght of cable	3000 mm
Maximum voltage	32 VDC
Operating Temperature	-40 °C to 80 °C [-40 °F to 176 °F]
Material	PVC for wires, Polyester for Braided sheath
Number of wires	42
Section of wires	1 mm ²

Layout



Electronic control units

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**Electrical wiring**

The wires of the cable are numbered and have different colors

Connector Molex A coding		
Number wire	Number pin	Color wire
A-1	1	Green
A-2	2	Green
A-3	3	Green
A-4	4	Green
A-5	5	Green
A-6	6	Green
A-7	7	Green
A-8	8	Green
A-9	9	Green
A-10	10	Brown
A-11	11	Brown
A-12	12	Brown
A-13	13	Brown
A-14	14	Brown
A-15	15	Brown
A-16	16	Brown
A-17	17	Brown
A-18	18	Brown
A-19	19	Brown
A-20	20	Red

Connector Molex B coding		
Number PIN	Number wire	Color wire
B-1	1	Red
B-2	2	Red
B-3	3	Red
B-4	4	Yellow
B-5	5	Yellow
B-6	6	Yellow
B-7	7	Yellow
B-8	8	Yellow
B-9	9	Yellow
B-10	10	Yellow
B-11	11	Yellow
B-12	12	Yellow
B-13	13	Yellow
B-14	14	Yellow
B-15	15	Yellow
B-16	16	Yellow
B-17	17	Yellow
B-18	18	Yellow
B-19	19	Yellow
B-20	20	Black

Connector Molex C coding		
Number PIN	Number wire	Color wire
C-1	1	Black
C-2	2	Black



PRESSURE SENSORS CABLE



Commercial name CABLE-PRESSURE-SENSOR-3M

Part number 003141105U

Features

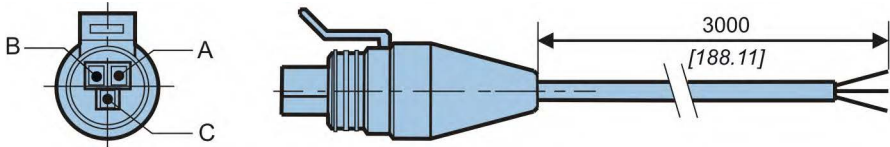
Lenght of cable 3 m

Material PVC

Number of wires 3

Sections of wires 0.5 mm²

Layout



Electrical wiring

Pin	Wire
A	Green
B	Brown
C	White

Electronic control units

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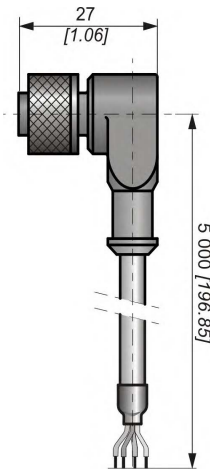
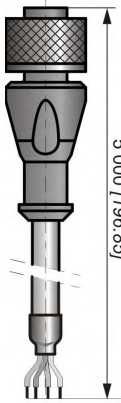
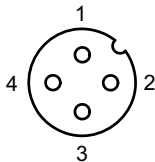
Cables



4-PIN M12 CABLE



Commercial name	ELEC-CABLE-M12-180°-5000	ELEC-CABLE- M12-90°-5000
Part number	A07468S	A04999J
Compatibility	Speed sensor, digital sensor and temperature sensor.	
Features		
Lenght of cable	5 m	
Material	PUR	
Number of wires	4	
Sections of wires	0.34 mm ²	
Protection	IP68	
Layout	180°	90°



Connector Mounting

Securely hand tighten the cable's ring to sensor connector M12.
The M12 nut must be tightened with a tightening torque from 0.6 Nm (hand-tight) to 1.5 Nm (using a torque wrench). An excessive tightening can damage the M12 connector.

Electrical wiring

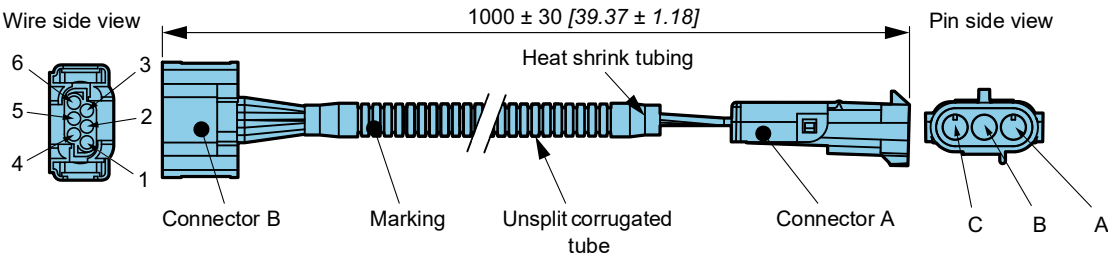
Pin	Wire
1	Brown
2	White
3	Blue
4	Black



1 SIGNAL PEDAL CONNECTION CABLE



Commercial name		CABLE-AMP-65-WP-3P-1000
Part number		A51444S
Function		Connect to the pedal and use only 1 signal.
Compatibility		Electronic transmission management with SmartDrive™.
Features		
Lenght of cable		1 m
Material		corrugated tube + wires
Number of wires		3
Sections of wires		AWG20
Operating temperature		- 40°C + 85°C [- 40°F + 185°F]
Corrugated tube material		PA
Layout		



Electrical wiring		Pin allocation of connectors		
Connector A:	Packard Electric	Connector B	Connector A	Wire color
Connector:	12010717	1	C	red
Terminal:	12089040	4	B	black
Wire seal:	12015899	2	A	white
Connector B: AMP		3	-	-
Connector:	1-967616-1	5	-	-
Terminal:	0-962885-5	6	-	-
Wire seal:	0-0967067-1			
Cavity plug:	967056-1			

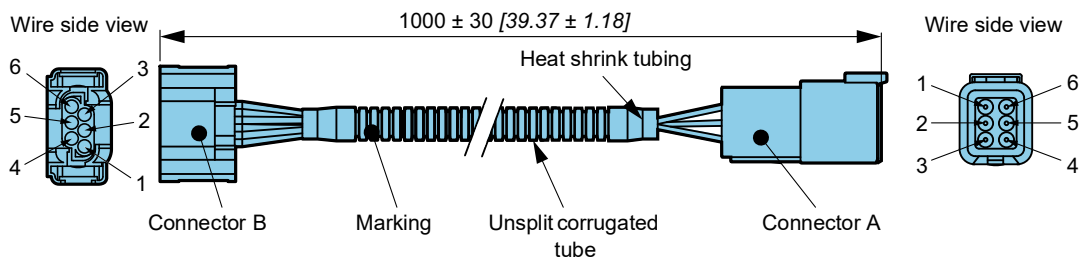


2 SIGNAL PEDAL CONNECTION CABLE



Commercial name	CABLE-AMP-65-DTM-6P-1000
Part number	A51445T
Function	Connect to the pedal and use 2 signals.
Compatibility	Electronic transmission management with SmartDrive™.
Features	
Lenght of cable	1 m
Material	corrugated tube + wires
Number of wires	6
Sections of wires	AWG20
Operating temperature	- 40°C + 85°C [- 40°F + 185°F]
Corrugated tube material	PA

Layout



Electrical wiring	
Connector A:	DEUTSCH
Connector:	DTM04-6P
Terminal:	0460-202-2031
Wedgelock:	WM-6P
Connector B:	AMP
Connector:	1-967616-1
Terminal:	0-962885-5
Wire seal:	0-0967067-1
Cavity plug:	967056-1

Pin allocation of connectors		
Connector B	Connector A	Wire color
2	1	white
4	2	black
1	3	red
5	4	blue
3	5	green
6	6	orange



Electronic control units

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Cables



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23/09/25



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