PZ MachineLink

CAN telematics & datalogger

Rugged, vehicle-grade CAN-bus logger and gateway with WiFi, Bluetooth, multi-protocol serial, switched outputs and 1-Wire.
Designed for permanent installation in mobile machinery, agricultural and construction equipment, and industrial test rigs.



1. Main features

- Input $5\,\mathrm{V}$ to $32\,\mathrm{V}$ DC, reverse-polarity protected, self-resetting fused
- Ignition-wake input (KL.15) or always-on operation; $< 1\,\mathrm{mA}$ sleep with optional cloud wake-up
- CAN 2.0 A/B, $10\,\mathrm{kbps}$ to $1000\,\mathrm{kbps}$, CANopen-capable
- Multi-protocol serial: RS-232 / RS-422 / RS-485 (half + full duplex), software-selectable
- $2\times$ high-side switched outputs, $4\,\mathrm{A}$ continuous, with current diagnostics
- $2\times$ analogue inputs, $0\,\mathrm{V}$ to $32\,\mathrm{V}$, 12-bit
- 1-Wire master with $5\,\mathrm{V}/100\,\mathrm{mA}$ sensor supply
- WiFi 802.11 b/g/n (STA + AP fallback) + Bluetooth LE
- Integrated web interface, MQTT cloud client, VPN remote access
- Onboard memory $64\,\mathrm{GB}$ for high-speed CAN logging
- Field-updatable over **CAN, WiFi or cloud**; built-in CAN flash service to **update other devices over CAN**
- Battery-backed real-time clock
- Sealed IP67 housing, mating Deutsch `DTM06-12SA` + `DTM06-12SB` plugs

2. Electrical

Parameter	Value
`VIN` supply	$5\,\mathrm{V}$ to $32\,\mathrm{V}$ DC (continuous)
`VIN` transient	$\pm 150\,\mathrm{V}$, ISO 7637-2
Reverse polarity	Protected (Schottky + fuse)
Pre-fuse	$2\,\mathrm{A}$ slow-blow (max $3\,\mathrm{A}$)
`VIN_EN` threshold	$\geq 5\,\mathrm{V}$ = device ON
Operating current (WiFi on)	$45\,\mathrm{mA}$ @ $12\,\mathrm{V}$, $25\,\mathrm{mA}$ @ $24\,\mathrm{V}$
Sleep current (KL.15 off)	$< 1\,\mathrm{mA}$ (power save enabled)
Cloud check-in (optional)	$20\,\mathrm{mA}$ to $30\,\mathrm{mA}$ for $15\,\mathrm{s}$ to $30\,\mathrm{s}$ per check
Logging + cloud @ $12\,\mathrm{V}$	$\sim 180\,\mathrm{mA}$
`OUT1`/`OUT2`	$4\,\mathrm{A}$ cont., short-circuit + open-load detection
`ANA0`/`ANA1`	$0\,\mathrm{V}$ to $32\,\mathrm{V}$, 12-bit
`5V_OUT`	$5\,\mathrm{V}$ regulated, $100\,\mathrm{mA}$ polyfused
CAN pins (`CANH`, `CANL`)	$\pm 58\,\mathrm{V}$, TVS-clamped
Serial pins (`RS1`–`RS4`)	$\pm 58\,\mathrm{V}$, common-mode choked
CAN bit rate	$10\,\mathrm{kbps}$ to $1000\,\mathrm{kbps}$ (ISO 11898-2)
Serial bit rate	up to $1\,\mathrm{Mbps}$
Operating temp. (case)	$-40\,^{\circ}\mathrm{C}$ to $70\,^{\circ}\mathrm{C}$
Storage temp.	$-40\,^{\circ}\mathrm{C}$ to $85\,^{\circ}\mathrm{C}$

3. Mechanical

Parameter	Value
Housing (body)	$117.6 \times 80 \times 60\,\mathrm{mm}$
Body length	$101.6\,\mathrm{mm}$
Body width	$80\,\mathrm{mm}$
Total height (mated)	$132.7\,\mathrm{mm}$
Connector face thickness	$36\,\mathrm{mm}$
Weight (housing)	$140\,\mathrm{g}$
Material	PA66 GF15, black, UL94 V-0
Sealing	IP67 (with sealed plug kit)
Mounting holes	$2\times$ ⌀ $7.4\,\mathrm{mm}$ thru, ⌀ $16\,\mathrm{mm}$ c-bore
Mounting centres	$118.8\,\mathrm{mm}$
Fastener	M6 or ¼", torque $7\,\mathrm{N\,m}$ to $10\,\mathrm{N\,m}$
Mounting orientation	Any, **except connectors pointing up**
User-side mating plugs (sold separately)	
Connector A	`DTM06-12SA` (grey, key A)
Connector B	`DTM06-12SB` (black, key B)
Wedge lock	`WM-12S`
Socket contact (20 AWG)	`0462-201-20141`
Sealed cavity plug	`114017`
Crimp tool	`HDT-48-00`

4. Standards & compliance

ISO 11898-2 (CAN PHY) • EN 61000-6-2 / 61000-6-4 (EMC industrial) • ISO 7637-2 pulses 1, 2a, 3a, 3b, 5a (load dump) • RoHS / REACH compliant • IP67 (sealed plug kit, all unused cavities plugged with `114017`)

5. Pinout

Connector B — power, CAN, I/O *(black, key B)*

`DTM06-12SB` – mating socket plug

Pin	Signal	Function
1	`VIN`	Power in (KL.30), 5 V to 32 V
2	`ANA0`	Analogue in, 0 V to 32 V
3	`VIN_EN`	Ignition / wake (KL.15)
4	`CANH`	CAN bus high
5	`CANL`	CAN bus low
6	`PWR_IN`	Supply for switched outputs
7	`OUT2`	High-side output 2 (4 A)
8	`OUT1`	High-side output 1 (4 A)
9	`1-Wire`	1-Wire data
10	`5V_OUT`	5 V sensor supply, 100 mA
11	`ANA1`	Analogue in, 0 V to 32 V
12	`GND`	Chassis return (KL.31)

Tie `PWR_IN` to `VIN` unless your installation needs a separately-switched output rail. For always-on use, bond `VIN_EN` to `VIN`.

Connector A — RS-232 / RS-485 *(grey, key A)*

`DTM06-12SA` – mating socket plug

Pin	Signal	Function
1	`RS4`	Pair 2 (RS-485 full-duplex RX+)
2	`RS3`	Pair 2 (full-duplex RX–)
3–10	—	Reserved, do not connect
11	`RS1`	Pair 1 (RS-485 “A” / full-duplex TX+)
12	`RS2`	Pair 1 (RS-485 “B” / full-duplex TX–)

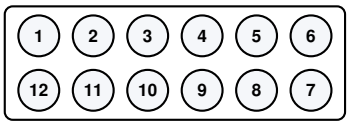
Mode mapping (software-selectable)

Mode	Wiring
RS-232 P-to-P	Pin assignment under re-verification (see manual). No termination.
RS-485 half-duplex	Pair 1: A=`RS1`, B=`RS2`. 120 Ω at each bus end.
RS-485 full-duplex	TX pair = `RS1`+/`RS2`–; RX pair = `RS4`+/`RS3`–. Cross RS1↔RS4, RS2↔RS3. 120 Ω at both ends of each pair.
RS-422 full-duplex	Same wiring as RS-485 full-duplex.

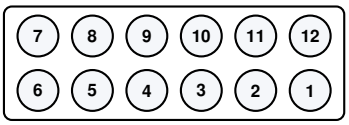
Use twisted-pair cable for CAN and RS-485 lines.

6. Plug pin layout (view from rear, wire-entry side)

Connector B (black)



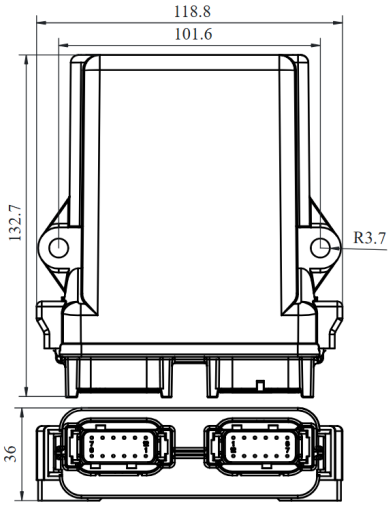
Connector A (grey)



Quick start: WiFi configuration

On first power-up, the device hosts an open access point named `PZ_MachineLink-XXXXXX` (XXXXXX = last 3 bytes of MAC, printed on the label). Join with the initial password from the label, then browse to `https://pzmachinelink.local/` to set your own password and join your local WiFi.

7. Dimensions (mm)



Top: front view (housing + mounting flanges). Bottom: connector-face view (36 mm deep).

Mounting

- 2× M6 or ¼" through the ⌀ 7.4 mm flange holes, ⌀ 16 mm counter-bore.
- Mounting hole centres: 118.8 mm (along long axis).
- Torque 7 N m to 10 N m max. Always use a flat washer on the plastic flange.
- Allow ≥ 30 mm clearance on the connector side for plug insertion / removal.
- Route the harness with a drip loop so condensation cannot run into the connectors.

Orientation

Any orientation except connectors pointing upward. With the plugs facing up, water collects on the seal and migrates past the gasket over time, breaching IP67. Plugs facing downward is preferred (natural drainage); sideways and intermediate angles are fine.

Communication interfaces

- CAN 2.0 A/B (ISO 11898-2), 10 kbps to 1000 kbps
- Serial: RS-232 / RS-422 / RS-485 (half + full duplex)
- 1-Wire master, 5 V/100 mA sensor supply
- WiFi 802.11 b/g/n (2.4 GHz), STA + AP fallback
- Bluetooth LE
- Onboard memory 64 GB (exFAT/FAT32)

8. Ordering

Item	Part number	Notes
PZ MachineLink (device)	`10001`	Sealed unit, mating plugs sold separately
Mating plug A (grey)	`DTM06-12SA`	TE Deutsch DT-Mini
Mating plug B (black)	`DTM06-12SB`	TE Deutsch DT-Mini
Wedge lock	`WM-12S`	Required, secures sockets
Socket contact (20 AWG)	`0462-201-20141`	Stamped Ni, 7.5 A
Sealed cavity plug	`114017`	For unused cavities (IP67)
Crimp tool	`HDT-48-00`	Hand-crimp, size 20 contacts

Need the full specification?

This is a 3-page summary. For complete electrical limits, wiring schematics (power, CAN, RS-232 / RS-485 half + full duplex, switched outputs, analogue input, 1-Wire), connector front-views, web interface setup and compliance details, see the companion document ***PZ MachineLink – Hardware & Wiring Manual*** (file `PZ-MachineLink_Manual.pdf`).

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