

# mag-Net<sup>®</sup>



## *The invisible power and data connector for wearables in hostile environments*

For wearable electronic soldier systems that require invisible power and data connectivity, **mag-Net<sup>®</sup>** is a ground-breaking auto-aligning, self-coupling, self-locking connector solution that provides incredible ease-of-use and reliability.

Unlike circular barrel connectors, **mag-Net<sup>®</sup>** is a robust, flush-flat rectangular solution with a self-aligning, automatic magnetic latching system, enabling the easiest one-handed blind mating.

- Auto-aligning and self-coupling, provides unbelievably easy one handed blind mating
- Mechanical latching with no moving parts, gives most reliable jam-free connection.
- Specifically designed for garment mounting; to protective vests or load carriage systems.
- Flush flat receptacles with abrasion resistant design, ensures maximum durability, with no protective caps required.
- Equipment connectors for direct connection of equipment to garments eliminating unnecessary weight and cable snag hazards.
- 8 way contact configuration for both power and high-speed data transmission.
- Ultra light-weight, no-bulk design to maximise mobility.
- Fully environmentally sealed mated and un-mated.



General note:

TT Electronics reserves the right to make changes in product specification without notice or liability.

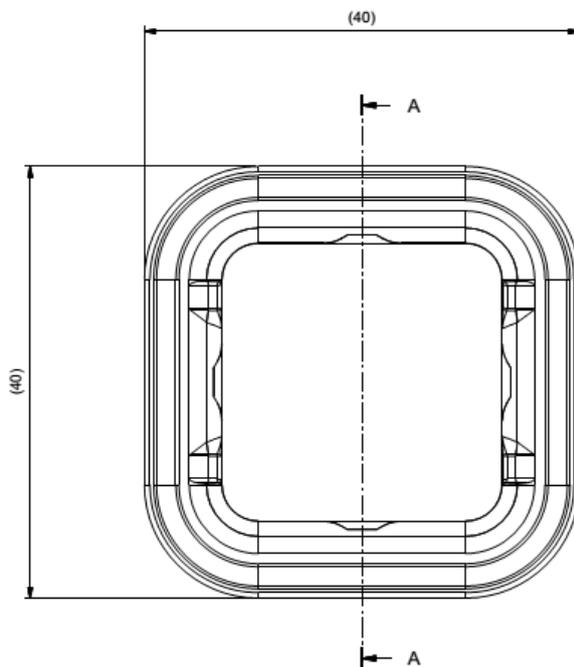
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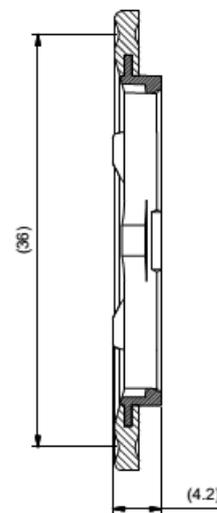
# Garment receptacle cage

Part number: MGNT-1038

mag-Net® receptacle cages can be sewn into place into a garment. The rubberised surround incorporates a sowing line groove that can be stitched through, protecting the thread from any potential abrasion. The cage is a low-cost, mechanical device which matches the dimensions of one MOLLE/PALS strap, providing an aperture into which a mag-Net connector receptacle can be fitted. The mag-Net garment receptacle cage allows garments to be manufactured completely separately from the electronics harness, and provides the easiest method of removal or refitting of the electronics for repair, maintenance, or refitting. mag-Net cages can be oriented in any direction, and the mag-Net receptacle connectors simply 'click' into the cage. When fitted, the receptacle cage and connector are completely flush with the garment, minimising any risk of abrasion damage, and completely eliminating potential snagging, which is common with all circular connector types. mag-Net cages are available in different colours to match most camouflage patterns, including multicam®, MTP, woodland, and coyote (please consult factory).



SECTION A-A  
VEST RETENTION CAGE



## Specifications:

- Operating temperature of  $-40^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$
- IP68 (3 metres for 1 hours)
- Corrosion resistance 2000hrs salt fog
- Fluid and shock resistance to MIL-STD-810G
- RoHS, REACH, WEEE compliant

## Construction:

- Cage insert: glass filled thermoplastic
- Overmould: Hytrel®

## General note:

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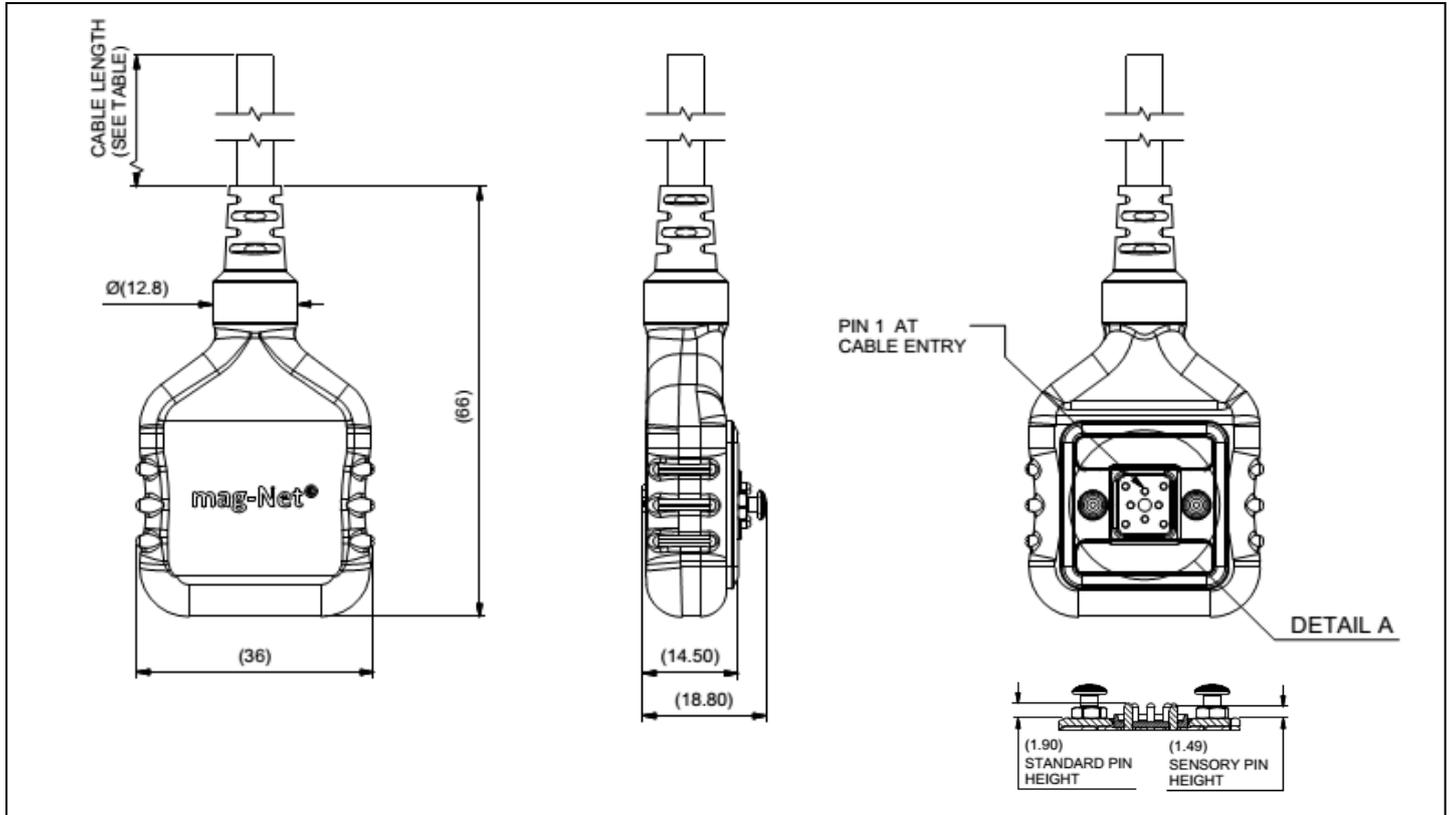
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www.ttelectronics.com

Part number: MGNT-1039-100



mag-Net® cable plugs are fully shielded and environmentally sealed cordsets for wearable electronics in the harshest of environments. mag-Net cable plugs have automatic self aligning, self latching mating, with no moving parts to jam that can cause unwanted disconnects or difficult connection. Once connected, stainless steel ‘mushroom’ latch pins are firmly locked in place into the receptacle preventing any accidental or unwanted disconnects. To disengage, simply lift vertically and remove. mag-Net® cable plugs are ergonomically shaped for easy use even with gloves, and the rounded shape minimises potential snagging. mag-Net® cable plugs have gold spring probe ‘pogo’ style contacts, for easy cleaning and maintenance. Plug shell bodies are lightweight aluminium and are finished with a flame retardant, non reflective, and low Infra Red contrast colour overmould. All mag-Net cable plugs meet and exceed MIL-STD-810G immersion requirements, and are fully environmentally sealed against dust and moisture ingress to IP68 3m for 1 hour. mag-Net® cable plugs are supplied with high performance cable designed for the latest wearable Personal Area Networks (PANs) including DEF STAN 23-12 General Soldier Architecture. mag-Net® cable plugs are wired for high speed data USB 2.0 requirements with a 90Ω shielded data pair and two lines for USB power, and four additional lines to carry up to 8 amp of power. The cable is fully shielded with an overall braid screen terminated to the plug body to provide high performance EMC characteristics for the most demanding applications.

### Specifications:

- Endurance 2000 mating cycles
- Operating temperature of -30°C to +80°C
- IP68 (3 metres for 1 hours)
- Corrosion resistance 200hrs salt fog
- Max current 8A
- Contact resistance <15m ohm
- Insulation resistance 1000M Ω
- Dielectrics withstand voltage 500V
- USB2.0 compatible
- Fluid and shock resistance to MIL-STD-810G
- RoHS, REACH, WEEE compliant

### Construction:

- Shell: non-reflective black electroless nickel over aluminium
- Contacts: gold over copper alloy
- Insert: glass filled thermoplastic
- Latch pins: stainless steel
- Magnets: neodymium

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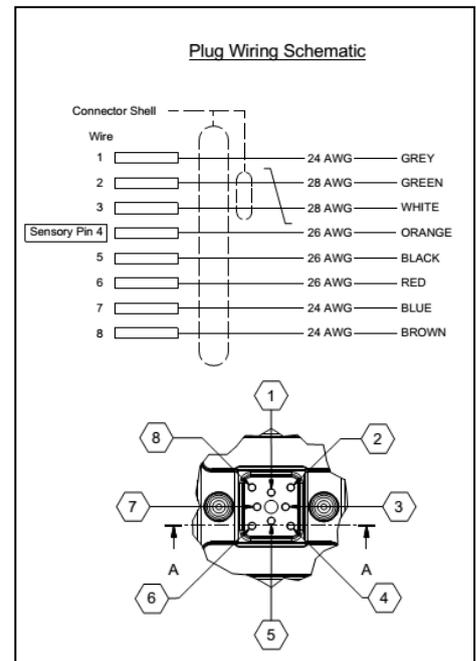
**Cable construction:**

- Data: 90 ohm 28 AWG (7 x 0.13) twisted pair, tin plated copper, FPI insulation, with overall foil screen and drain wire,
- Power: 24 AWG (19 x 0.13), tin plated copper, FPI insulation
- Binder: Polyester wrap
- Braid screen: 38 AWG
- Jacket: HFS 100, RAL 1019 Grey Beige, overall diameter 6.0mm max

For alternative cable lengths:

**MGNT-1039-XXX**

└ Cable length in cm



*mag-Net — unleash mobility*

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