Zemic weighing sensors integrated into the Easy Shopper shopping trolley
应用在 Easy Shopper 购物推车上的 Zemic 称重传感器。

With the Easy Shopper you can do your shopping without having to repack and wait at the cash register. Whilst shopping, you can put the products directly into your bag -and you don't have to take them out at the checkout. The Easy Shopper has even more advantages. The Easy Shopper is the fastest and easiest way of shopping and thus the most modern supermarket shopping trolley in the world!

使用 Easy Shopper，可以不用在收银台前等待商品进行再次包装。购物期间，您可以直接将产品放入袋中，结账时就不必再次一件件取出重复包装。Easy Shopper 还有很多其他优势。Easy Shopper 是最便捷简单的购物方式，因此也是世界上最现代化的超市购物手推车!

With this innovative solution, Pentland Firth offers consumers a new supermarket experience where convenience comes first. The Easy Shopper is already being used in 35 locations. By the end of 2020, there will be at least 50.

通过这种创新方案，Pentland Firth 为消费者提供了一种全新的超市购物体验，在这种方案中便捷是第一位的。Easy Shopper 已经在 35 个地点推广使用。截止 2020 年底，将至少有 50 家超市使用 Easy Shopper。

This innovation offers many new possibilities and fits well with our slogan "We believe we make you stronger". With the integration of our force sensors, we make a direct contribution to creating new consumer experiences. This is why we are happy to support Pentland Firth, the developer of this smart supermarket trolley, with our knowledge and expertise in the field of force measurement.

这一方案创造了许多的可能性，并且与我们的口号 "我们相信我们让你更强大 " 吻合。我们也通过称重传感器的集成应用，为创造新的消费体验做出了直接贡献。这也是为什么我们很高兴能够使用我们在力测量领域所拥有的的知识和专业技术，为这款智能超市手推车的开发商 Pentland Firth 公司做支持。

- **Zemic Europe & Pentland Firth**

- **Zemic Europe 和 Pentland Firth**

  ① Weighing sensors integrated in smart shopping trolley

  应用于智能购物车的称重传感器。

  ② Engineering and management of installation space

  管理安装空间的程序

  ③ Integration of the appropriate connectors

  应用适当的连接器

  ④ Match of expertise weighing sensors & knowledge of retail and shopping behaviour

  专业的称重传感器知识与零售购物行为相结合

- **How Zemic Europe advised Pentland Firth**

- **Zemic Europe 如何为 Pentland Firth 提供解决方案**

  Weighing in a shopping trolley, in short, that was the aim of the project. After signing an NDA, Zemic Europe and Pentland Firth sat down together to discuss the project. First of all they determined which type of force sensor was most suitable for the application. Matters such as installation height, deflection, calibration, connection technology and accuracy were discussed.

  简而言之，实现购物车称重，这就是这个项目的目的。签署 NDA 协议后，Zemic Europe 和 Pentland Firth 一起讨论这个项目。首先，他们确定了选择哪

种类型的传感器最合适。紧接着他们讨论了诸如安装高度、挠度、校准、连接技术和精度等问题。

An important point during this process was to shorten the installation time of the load cells. In the end the choice was made to deliver matched load cells. The output voltages of the 4 load cells are selected and 4 cells are grouped together, this simplifies the system calibration. This time saving process has directly led to considerable cost savings in the production process of the Easy Shopper.

在这个过程中，一个重要的问题是如何缩短称重传感器的安装时间。最终，我们选择了最合适的称重传感器。选择了调节 4 个称重传感器的输出电压，使他们相匹配，简化了系统的标定工作。这样既节省了时间，同时直接节约了 Easy Shopper 生产过程中相当大的成本。

Pentland Firth has used the knowledge and experience of Zemic Europe in the field of weighing and force measurement. They have successfully linked this knowledge to their knowledge of consumer shopping behaviour.

Pentland Firth 利用 Zemic 欧洲公司在称重和测力领域的知识和经验，成功地将这些知识与他们对消费者购物行为的了解联系起来。

With the right selection of suppliers, Pentland Firth has succeeded in developing the smart shopping trolley Easy Shopper.

通过对供应商的正确选择，Pentland Firth 成功地研发出了智能购物手推车 Easy Shopper。

- **Benefits of the Easy Shopper**

- **Easy Shopper 的优势**

The benefits of the Easy Shopper are:

Easy Shopper 的优势在于：

① No more waiting at the cash register.

不用在收银台前等待。

② The articles can go straight from the shelf into the shopping bag.

物品可以直接从货架上放入购物袋内。

③ Scanning of items is easy because the barcode scanner is built into the shopping trolley.

由于条码扫描器内置在购物车内，所以扫描物品非常方便。

④ During shopping a complete overview of your shopping can be seen on an integrated display on the shopping trolley.

在购物过程中，可以在购物车上的显示屏上看到您购物的概况。

⑤ During shopping you can see the total value of the groceries on your screen.

购物期间，你可以在屏幕上看到货物的总价值。

⑥ Shopping lists can be shown on the display of the shopping trolley via the app on a phone.

通过手机上的应用程序可以使购物清单显示在购物车的显示屏上。

⑦ This shopping trolley navigates visitors through the store and also shows all current offers and promotions on the display.

这款购物手推车可以为顾客在店内导航，还能在显示屏上显示当前所有的优惠和促销活动。

- **The L6D single point load cell used in the Easy Shopper**

- **Easy Shopper 中使用的 L6D 单点式称重传感器。**

The L6D load cell has been selected as the best fitting component. This load cell has the following characteristics:

L6D 称重传感器被选为最合适的传感器。该称重传感器具有以下特点：

① Aluminium-alloy IP65 single point load cell

铝合金 IP65 单点式称重传感器。

② Colourless anodized

表面无色阳极化

③ Suitable for pricing scales, counting scales, bench scales, supermarket shelves, IoT devices, etc.

适用于定价秤、计数秤、台秤、超市货架、物联网设备等。

④ Maximum platform size: 250 x 350 mm

最大平台尺寸：250×350 毫米。

⑤ High accuracy; OIML approved C4.

精度高；通过 OIML 认证，C4 等级。