



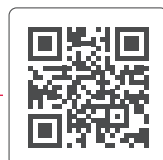
## perma STAR VARIO LONG RANGE

Electro-mechanical, weekly and monthly time settings, four cartridge sizes and LoRa connectivity.

perma STAR VARIO LONG RANGE combines all the performance features of the perma STAR VARIO with the new features of LoRa connectivity and a backlit display. The system utilises LoRaWAN network architecture in which gateways relay messages between the perma STAR VARIO LONG RANGE lubrication system and the central network server.

System users can view the operational status of all connected lubricators via the perma CONNECT application. For each perma STAR VARIO LONG RANGE lubrication system, a status update is sent hourly, or whenever a status change occurs. Remote control of the drive unit is also achieved via the perma CONNECT application which includes turning the device on/off, changing settings or even running a purge cycle.

More information can be found on our website [www.perma.com.au](http://www.perma.com.au)



MADE IN **GERMANY**



Backlit display with push button control provides time settings in months and weeks for 60, 120, 250 and 500 cm<sup>3</sup> sizes

Broad range of weekly and monthly time setting options provides service planning flexibility

LED signal lights for status indication



LoRaWAN infrastructure utilizes AES128 data encryption and complies with ISO / IEC27001 data security requirements

LoRa connectivity allows for remote monitoring and control of lubrication systems

Perform desktop audits via the perma CONNECT application

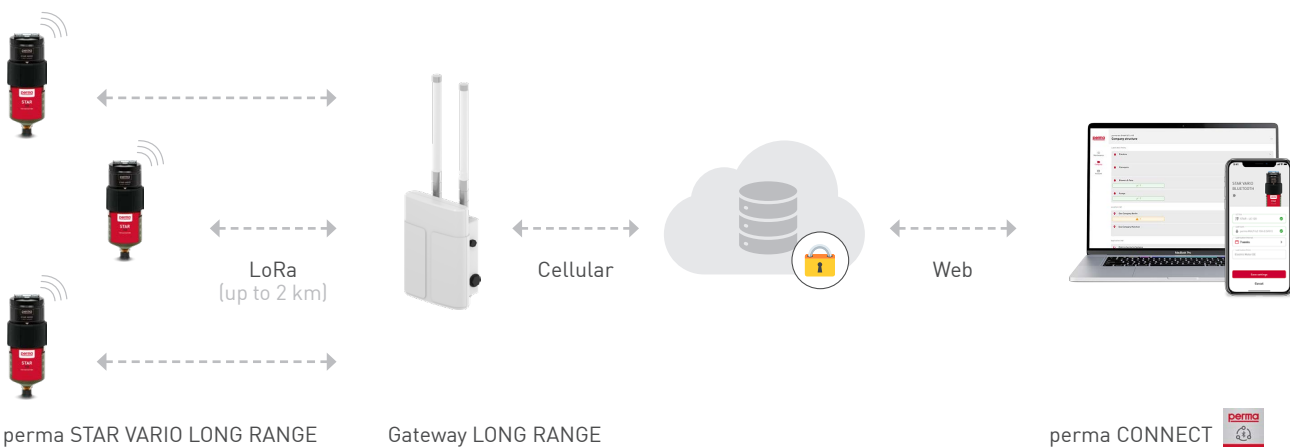


Each gateway can receive data from 8 lubricators simultaneously and support up to a total of 2000 lubrication systems

Gateways relay status updates and control commands to and from lubricators up to a 2 km radius<sup>†</sup>

Utilise 4G cellular backhaul via the provided data SIM card

<sup>†</sup> LoRa communication up to 2 km line-of-sight. Dependent on a number of factors, including signal interference and density of obstructions/structures between the gateways and lubricators



<sup>†</sup>Limits depend on line ID, grease type, temperature and the resistance to flow presented by lubrication point itself. Extending line lengths delays the delivery of first grease and may prevent lubricant delivery altogether



**Drive - reusable**

Electro-mechanical drive with 4.5 V battery pack (Alkaline)



**Discharge period**

1, 2, 3 ... 12 months | 1, 2, 3 ... 52 weeks  
STAR LC 500: max. 6 months | 26 weeks



**Lubricant volume**

60, 120, 250, 500 cm<sup>3</sup>



**Operating temperature**

-20 °C to +60 °C



**Remote installations**

5 meters of 3/8" ID line (grease)<sup>‡</sup>



**Protection class**

IP 65

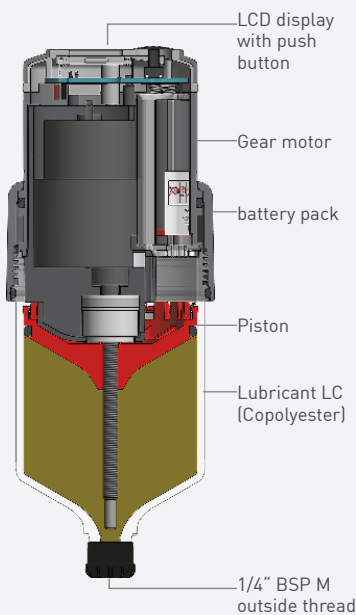


**Standard & special lubricants**

Greases up to NLGI 2 | Oils

**Dimensions**

LC 60: Ø 75 x 155 mm | LC 120: Ø 75 x 178 mm  
LC 250: Ø 75 x 228 mm | LC 500: Ø 75 x 324 mm



**Gateway LONG RANGE**  
permanent installation



**STAR VARIO LONG RANGE drive unit**  
reusable



**Battery pack STAR VARIO**  
single use



**STAR Lubricant canister (LC)**  
single use



**Support flange STAR**  
reusable