

Connected single point lubricator

SKF SYSTEM 24





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The SKF SYSTEM 24 portfolio includes a solution for wireless monitoring of automatic single point lubricators the “TLDD series”. The connected single point lubricator, utilizes a web dashboard and interface to monitor the status of each lubricator and change its settings.

Main benefits

- Automatic lubrication helps to increase workplace safety, reliable machine operation and maintenance efficiency
- Scalable solution which is easy to install
- Visibility and control of all lubricators registered in the online platform from one single access point
- Automatic warning and alarm messages that help to ensure reliable lubrication
- Reduce the frequency of inspecting lubrication points in the field
- Empty time overview of all lubricators helps to optimize logistics

The TLDD lubricator is based on the proven automatic single point lubricator from the TLSL series. The difference is that the manual set-up of the lubricator is replaced by wireless control through the online Lubrication Cloud platform. The connectivity is realized by three components which form the TLDD system.

Lubricator

The wireless communication of the lubricator is achieved by utilising encrypted long range network communication inside and outside the factory. The wireless communication allows secure remote monitoring and control of the lubricators, reducing the necessity of frequent visits of the lubricators in the field. Two cartridge sizes and a wide variety of lubricants are available for the lubricator with adjustable emptying times of 1 to 12 months. The electro-mechanical drive system allows installations in all orientations and short feed lines can be used if the lubricator cannot be mounted directly on the machine.

Gateway

The gateway supports the communication between the lubricators and the data cloud. Using the long-range network, each gateway can connect with several different lubricators (there is virtually no limit) that are distributed across the factory. Should one gateway not offer

sufficient network coverage, multiple gateways can be used together, creating a scalable system. To enable easy installation without a complex IT setup, the gateway uses the GSM network to communicate with the data cloud. All communication is encrypted to prevent access except by authorized users of the Lubrication Cloud platform. Two gateway options are offered: the standard option for indoor installation, and the heavy-duty IP67 option, which can work in harsh environments, including outdoor (heat, cold, rain, snow, wind, etc.)

Lubrication Cloud platform

The system is monitored and controlled via the Lubrication Cloud platform. The web-interface visualizes the lubricator data in the cloud and offers intuitive interaction with the lubricator data. The platform can be easily accessed by computers, tablets and mobile devices through the web browser.

Features of the Lubrication Cloud platform

- Access and data consolidation of multiple organizations/sites with a single account
- One platform for your different SKF Connected Lubrication products
- Intuitive web interface for managing TLDD lubricators, including an advanced hierarchy function for grouping assets and organizing the local installation.
- Dashboard with summary of lubrication status, allowing the user to track and log the behavior of the installed units over time.
- Automatic alarms and email notifications for troubleshooting
- Easy monitoring and changing of settings of each lubricator
- Access management for multiple users
- Batch upload of lubrication points (with Excel .csv files)
- Multilingual interface



The TLDD system consists of different components that need to be ordered separately.



Lubricator drive unit

Each lubrication point requires one drive unit. Different drive unit versions comply with regional communication regulations.



Lubricant cartridge sets

Lubricant cartridge sets are available for a wide range of grease and oil lubricants in two different sizes. The TLDD uses the same cartridge sets and batteries as TLSD lubricators.



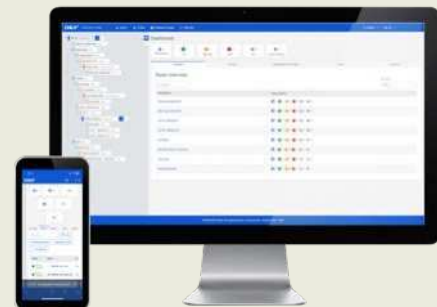
Support plate for grease or oil lubrication

The support plate is a mandatory component for each drive unit for installing the lubricator. A support plate for grease lubrication is included with every drive unit with "-DS" suffix. For oil lubrication, a special support plate with none-return valve needs to be ordered separately.



Gateway

The gateways connect a group of lubricators with the cloud of the Lubrication Cloud platform. The gateways are available in matching versions to the drive units.



Lubrication Cloud platform

The lubrication cloud platform (<https://www.lubrication-cloud.skf.com>) allows registered users to see the status of connected lubricators and control them.



TLDD components

Description	Region	Designation
Lubricator drive-unit	Europe	TLDD 1/EU-DS *
	North and Central America	TLDD 1/US-DS *
	Australia and South America	TLDD 1/AU-DS *
Gateway	Europe	TLDD 1/EU-GAT or TLDD 2/EU-GAT
	North and Central America	TLDD 1/US-GAT or TLDD 2/US-GAT
	Australia	TLDD 1/AU-GAT or TLDD 2/AU-GAT
	South America	TLDD 1/AU-GAT or TLDD 2/LA-GAT

* With support plate TLSD 1-SP included

Note: refer to the Technical data table in the next page for more information on which version to use in your region.

Available lubricants

A wide range of SKF lubricants is available for TLDD lubricators. The cartridge sets are available in two sizes and are supplied with a battery pack.



Grease	Description	125 ml	250 ml
LGWA 2	High load, extreme pressure, wide temperature range	LGWA 2/SD125	LGWA 2/SD250
LGEM 2	High viscosity bearing grease with solid lubricants	LGEM 2/SD125	LGEM 2/SD250
LGHB 2	High load, high temperature, high viscosity	LGHB 2/SD125	LGHB 2/SD250
LGHQ 2	High performance, high temperature	LGHQ 2/SD125	LGHQ 2/SD250
LGFG 2	General purpose food grade (NSF H1)	LGFG 2/SD125	LGFG 2/SD250
LGFQ 2	High load and wide temperature food grade	LGFG 2/SD125	LGFG 2/SD250

Custom filling with other lubricants can be considered on demand. Please contact SKF.

Chain oils		125 ml	250 ml
LHMT 68	Medium temperature oil	LHMT 68/SD125	LHMT 68/SD250
LFFM 100	General purpose food grade (NSF H1)	LFFM 100/SD125	LFFM 100/SD250

For oil lubrication with LHMT 68 and LFFM 100, a special support plate with none-return valve is required (TLSD 1-SPV) and needs to be ordered separately.

Technical data

Lubricator	
Grease capacity	
.../SD125 refill set	125 ml (4.2 US fl. oz)
.../SD250 refill set	250 ml (8.5 US fl. oz)
Emptying time	1 to 12 months, user adjustable via Lubrication Cloud Platform
Lowest grease purge	
.../SD125 refill set	0,3 ml (0.01 US fl. oz) per day
.../SD250 refill set	0,7 ml (0.02 US fl. oz) per day
Highest grease purge	
.../SD125 refill set	4,1 ml (0.13 US fl. oz) per day
.../SD250 refill set	8,3 ml (0.28 US fl. oz) per day
Operating temperature range	0 to 50 °C (30 to 120 °F)
Maximum operating pressure	5 bar (75 psi)
Drive mechanism	Electro mechanical
Connection thread	G ¹ / ₄
Maximum feed line length with:	
Grease	Up to 3 meters (10 ft)
Oil	Up to 5 meters (16 ft)
LED status indicators	Green, yellow, red, blue and purple to indicate the lubricator status
Total weight (incl. packaging)	0,34 kg (0.75 lb)
IP rating	IP 65
Battery	Battery pack 4.5 V, 2.7 Ah Alkaline manganese (TLSD 1-BAT)

Regional differentiation

Country availability	See the list below of countries to select the correct regional version. If your country is not listed, please reach out to your SKF local representative for more information.
Europe	Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Switzerland, Sweden, United Kingdom
North and Central America	United States of America, Canada*, Mexico*, Puerto Rico
Australia	Australia, New Zealand
South America	Chile*, Colombia*, Argentina*, Brazil*, Paraguay*, Peru*, Uruguay*
Other regions	Contact your local SKF representative for information

*Pending local radio communications approval - please visit skf.com or contact your local SKF representative to confirm availability.

Standard gateway	
Designation	TLDD 1/xx-GAT
Distance to lubricators	Up to 300 m (985 ft) in open factory environments
Number of lubricators	Virtually no limit
Power	100-240 V, 50/60 Hz, plugs for EU, US, UK, AU included
Power over Ethernet	N/A
Operating temperature range	–10 to +60 °C (+14 to +140 °F)
Relative humidity	20 to 90 %, non-condensing
Product dimensions	165 x 133 x 45 mm (6.5 x 5.2 x 1.8 in.)
Total weight (incl. packaging)	0.73 kg (1.6 lb)

Heavy duty gateway	
Designation	TLDD 2/xx-GAT
Distance to lubricators	Up to 300 m (985 ft) in open factory environments
Number of lubricators	Virtually no limit
Power	Ethernet Input Power: 37 - 57 VDC, 25 W min. power rating
Power over Ethernet	PoE Standard IEEE 802.3at, PoE adapter available (Input 100-240V, 50/60 Hz, 0.6A max.)
Power adapters *	
TLDD 2/EU-POE	PoE power adapter with EU plug (type E)
TLDD 2/US-POE	PoE power adapter with US plug (type A)
TLDD 2/AU-POE	PoE power adapter with Australian plug (type I)
Operating temperature range	–40 to +70 °C (–40 to +158 °F)
Relative humidity	20 to 90 %, non-condensing
Product dimensions	232 x 199 x 102 mm (9.1 x 7.8 x 4.0 in.)
Total weight (incl. packaging)	1.43 kg (3 lb)
Protection index	IP 67

* A plug adapter or an alternative 3-pin power cable (type C13) may be used to adapt to local requirements.

Gateway and communication			
Lubricator and gateway	LoRaWAN®, Long Range Wide Area Network		
Region	Lubricator	Gateway	Frequency range
Europe	EU version	EU version	863-870 MHz
North America	US version	US version	902-928 MHz
Australia, New Zealand	AU version	AU version	915-928 MHz
South America	AU version	LA version *	915-928 MHz
Other regions	Contact SKF		
Gateway	GSM 4G, 3FF micro sim card pre-installed, not exchangeable		
Security	Encrypted communication		

* The TLDD 1/AU-GAT may also be used in this region

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Cartridges for single point lubricators



skf.com | skf.com/lubrication | skf.com/mapro

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