

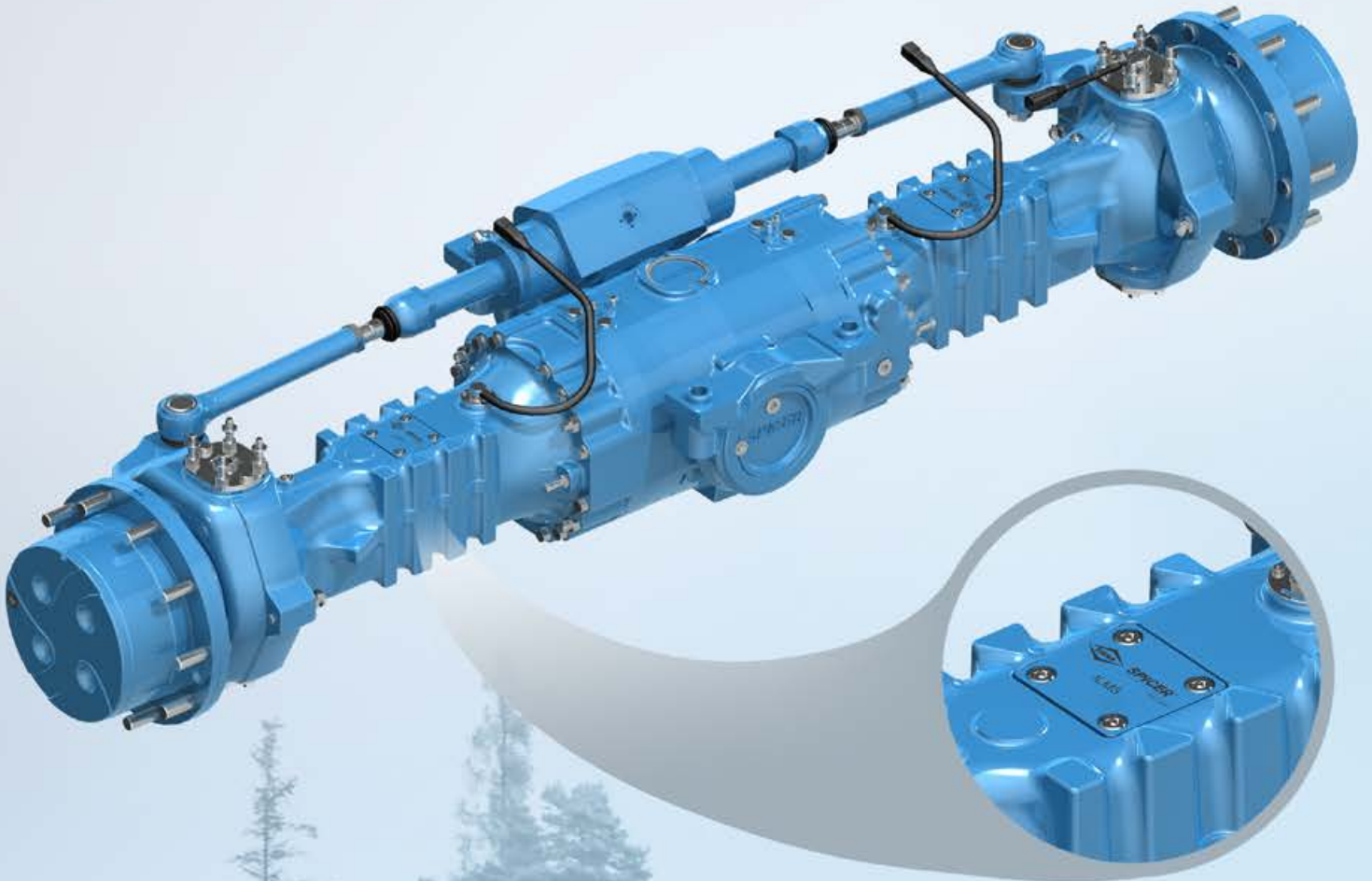


SPICER[®]

Smart Suite[™]

Spicer[®] Smart Suite[™]

Intelligent Load Monitoring System ILMS



ILMS, the first technology of Dana's Spicer Smart Suite[™] portfolio that leverages the Internet of Things and the Industry 4.0 trends to support company evolution into the age of smart equipment.



Spicer® Smart Suite™

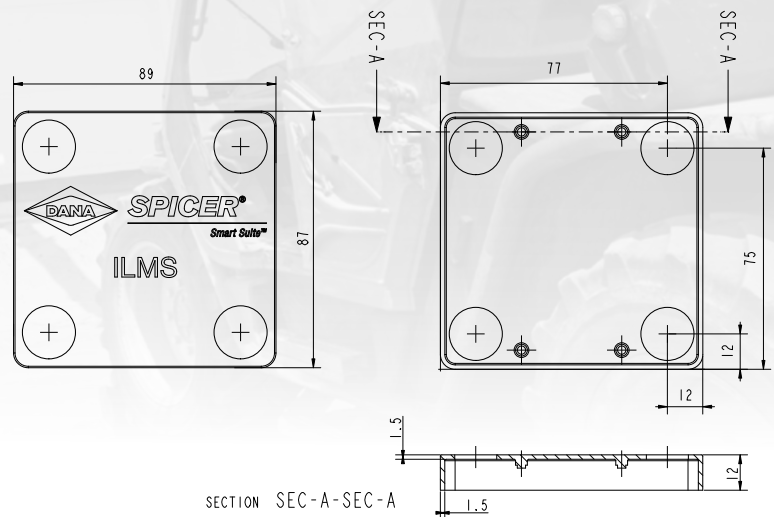
Intelligent Load Monitoring System - ILMS

Initially targeted for telehandler and other lifting applications, Dana's Spicer® Smart Suite™ ILMS uses patented and proprietary mechanical, electronic, machine-learning to evaluate vehicle stability in every dynamic condition and improve the operator safety. Therefore this technology is applicable in a variety of OEM applications.

The Spicer Smart Suite ILMS collects real-time data through the embedded sensor. Proprietary software uses machine-learning algorithms to elaborate data and provide insightful information about vehicle stability. It can even anticipate the risk of a vehicle tip over before it occurs. This information is distributed on the vehicle networks through the CANbus, while other connected vehicle systems can use it to take specific actions to prevent operator incidents, such as limiting vehicle speed or operating/facilitating the boom extension.

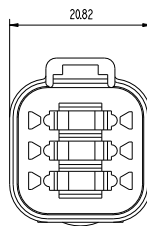
BASIC FUNCTIONALITIES

- Monitors the **longitudinal stability**
- Monitors axle **roll** and **pitch angles**
- Monitors the **shock events** occurring to the axle



ADVANCED FUNCTIONALITIES

- Estimation of lifted loads weight
- Monitors the longitudinal position of the **vehicle center of mass**



Connector Pinout		
Pin.	Label	Function
1	+15	Switched battery
2	+30	Permanent battery
3	GND	Battery -
4	CAR GND	Chassis
5	CAN H	CAN bus - high
6	CAN L	CAN bus - low

UNI EN 15000-2009

ISO13849

IEC 61508

Technical Data			
Power supply	Supply voltage	Nominal	12, 24 [V]
		Min	8 [V]
		Max	32 [V]
	Supply current	135 [mA] @12 [V]	
Temperature	Operating ambient temperature	from -40°C to +85°C	
	Storage ambient temperature	from -40°C to +105°C	
Dimension	Length 86 [mm]	Width 88 [mm]	Height 12 [mm]
Connector	Device Connector	6 pin	DEUTSCH DT04-6P
	Mating Connector	6 pin	DEUTSCH DT06-6S
Installation	Nominal Torque	M10 Class 10.9	70 [Nm]

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Application Policy

Capacity ratings, features, and specifications vary depending upon the model and type of service. Application approvals must be obtained from Dana; contact your representative for application approval. We reserve the right to change or modify our product specifications, configurations, or dimensions at any time without notice.