



DENKI SEIGYO

DSWLS-08



Wireless Travel Limit Switch

Industrial Wireless Limit Switch for Machine Travel, Position & End-Limit Detection

Product Overview

The **DSWLS-08** is an industrial-grade wireless travel limit switch designed for detecting the **end position, travel position, opening/closing position, and movement of industrial machinery**.

It combines a rugged mechanical limit-switch mechanism with an integrated wireless transmitter, allowing the switch status to be transmitted wirelessly to a compatible Denki Seigyo receiver or control system.

By eliminating long signal cables between field-mounted limit switches and control panels, DSWLS-08 helps reduce:

- Signal cabling
- Cable trays
- Trenching requirements
- Installation time
- Cable-related failures
- Maintenance requirements

The switch is particularly suitable for **moving machinery, conveyors, cranes, hoists, material-handling systems, remote equipment and retrofit automation projects** where conventional cable installation is difficult.

Key Features

- Industrial wireless travel limit switch
- Mechanical limit-switch operation
- Integrated wireless transmitter
- Can connect up to 4 Limit switch with one Module
- Wireless communication up to **1000 m in open conditions**
- Industrial wireless frequency options: **470–510 MHz / 2.4 GHz***
- Rugged industrial metal construction
- **IP66 / IP67** protection



- Oil-resistant and water-resistant construction
- Mechanical life up to **15 million operations**
- Electrical life up to **500,000 operations**
- Rated contact capacity **15 A @ 250 VAC**
- Operating speed from **1 mm/s to 2 m/s**
- Up to **120 mechanical operations/min**
- Suitable for machine travel and end-position detection
- Reduced field wiring
- Suitable for moving and travelling machinery
- Easy retrofit installation
- Multiple wireless limit switches can be integrated into a common wireless system
- Suitable for difficult cable-routing locations

*Actual wireless range depends on antenna arrangement, installation height, obstacles, electromagnetic interference and the operating environment.

Technical Specifications

Parameter	DSWLS-08 Specification
Product Type	Wireless Travel Limit Switch
Model	DSWLS-08
Switching Type	Mechanical Limit Switch
Wireless Communication	Industrial Wireless
Wireless Frequency	470–510 MHz / 2.4 GHz*
Communication Range	Up to 1000 m, open environment*
Rated Contact Capacity	15 A @ 250 VAC
Operating Speed	1 mm/s to 2 m/s
Mechanical Operating Frequency	Up to 120 operations/min
Electrical Operating Frequency	Up to 30 operations/min
Initial Contact Resistance	≤ 15 mΩ
Insulation Resistance	≥ 100 MΩ @ 500 VDC
Mechanical Life	≥ 15 million operations
Electrical Life	≥ 500,000 operations
Ambient Temperature	–10°C to +80°C
Humidity	Up to 95% RH
Protection Rating	IP66 / IP67
Housing	Industrial metal construction
Application	Travel, position and end-limit detection



Actuator Characteristics

The DSWLS-08 mechanical configuration has the following actuator characteristics:

Parameter	Specification
Maximum Operating Force (OF)	2720 gf
Minimum Release Force (RF)	910 gf
Maximum Pre-Travel (PT)	1.7 mm
Minimum Over-Travel (OT)	4 mm
Maximum Movement Differential (MD)	1 mm
Operating Position (OP)	44.5 ± 0.8 mm

Mechanical Construction

Rugged Metal Housing

DSWLS-08 uses an industrial metal housing designed to protect the mechanical switching mechanism and integrated wireless electronics in demanding industrial environments.

Sealed Industrial Construction

The enclosure provides **IP66/IP67 protection**, helping protect the switch against dust and water ingress when correctly installed.

High Mechanical Durability

The mechanical switching mechanism is designed for frequent industrial operation, with a specified mechanical life of **at least 15 million operations**.

Wireless Communication

The DSWLS-08 transmits the mechanical limit-switch status wirelessly to a compatible Denki Seigyo receiver.

Wireless Parameters

Parameter	Specification
Communication	Industrial Wireless
Frequency	470–510 MHz / 2.4 GHz*
Maximum Range	Up to 1000 m in open conditions*
Transmission	Limit-switch ON/OFF status
Receiver	Compatible Denki Seigyo Wireless Receiver

The actual achievable range depends on the selected wireless configuration, antenna arrangement, installation height, obstacles and electromagnetic interference.



Product Technical Parameters

Model Number		DSWLS-08		
Protocol standard		LoRa Private network protocol		
Frequency range		470 ~ 510MHz FHSS CSMA		
Maximum link budget		157dB		
Maximum output power		17dBm		
Polarization mode		Single polarization; vertical polarization		
Networking mode	Star Type	Recommended transmission distance		0-500m(visible) SF7
Sensitivity	Transmission rate	2400bps	800bps	300bps
	Receive sensitivity	-126dBm	-130dBm	-140dBm
Management				
Management Mode		English management, support parameter setting local/remote		
Reset		Supported by both software and hardware		
Function				
Working mode	M2P(SF7)	Many-to-one mode	Travel slave; receiving master	
IO configuration	Travel 1 DI/receive 5 DO	Display	Travel light display; receiving LCD display	

Product configuration instruction manual

Safety					
Hardware	RF power	Peak value is less than 0.1W, no interference with other equipment			
	RF isolation	Double-layer filter circuit design, anti-interference of different frequency			
	Electrical isolation	Power supply, communication, IO, etc. are all isolated			
Software	Wireless encryption	CRC check			
	Protocol architecture	Based on TD/CSMA/FHSS			
Interface					
Antenna interface	SMA female	Antenna gain	3dBi	Antenna angle	Omnidirectional antenna
Incoming line interface	M12 waterproof connector				
Voltage and current					
Power supply mode	Lithium battery DC3.6 for limit switch		Receiver 18-30VDC on-site power supply		
Working current	< 23mA@DC3.6v		Full load < 30mA@24V		
	< 0.09mA@DC3.6v		Normal state < 5mA@24V		
	< 0.02mA@DC3.6v				
Working environment and characteristics					
Surge protection (receiver)	Common mode 4Kv/differential mode 2Kv		Humidity (non-condensing)		≤ 95%
Protection level	IP65				
Operating temperature (travel switch)	-20 ~ +55℃		Operating temperature (power supply receiver)		-30℃~ +70℃
Material (travel switch)	Cast aluminum		Material (power supply receiver)		PC



Operating Principle

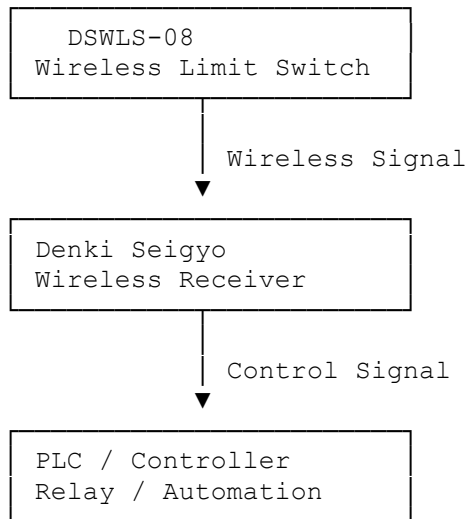
Mechanical Movement → Limit Switch Actuation → Wireless Transmission → Wireless Receiver → PLC / Controller

When the machine reaches its configured travel or end position, the mechanical actuator operates the internal limit-switch contacts.

The integrated wireless transmitter detects the switching condition and transmits the corresponding status to the Denki Seigyo receiver.

The receiver then provides the corresponding signal to the machine control system.

Typical System Architecture



This architecture allows multiple wireless limit-switch detection points to be incorporated into a centralized control system.

Installation Advantages

Reduced Cabling

Long signal cables from individual limit-switch locations to the main control cabinet can be eliminated.

Faster Installation

Wireless communication simplifies installation where conventional signal wiring would require significant cable routing.

Difficult Locations

DSWLS-08 is particularly useful for:

- Moving machinery
- Long-distance equipment
- Bridges and structures
- Conveyors
- Rotating or travelling equipment
- Existing industrial plants
- Remote machinery
- Difficult cable-tray routes



Easy System Expansion

Additional wireless limit-switch points can be added without installing a new long cable run for every detection point.

Lower Maintenance

Reducing exposed field cabling can help reduce cable damage, cable-break faults and maintenance requirements.

Applications

Conveyor Systems

Travel position, end position and movement detection without long signal cables.

Cranes & Hoists

Travel-limit and position detection for travelling cranes, hoists and material-handling systems.

Industrial Machinery

Suitable for:

- Machine travel detection
- End-of-stroke detection
- Door position monitoring
- Mechanical movement detection

Material Handling Equipment

Wireless position feedback for automated material-transfer and handling equipment.

Remote Equipment

Suitable for machinery installed away from the primary control cabinet.

Retrofit Automation

Ideal for existing machinery where adding new signal cables is difficult or expensive.

Automated Production Lines

Provides wireless machine-position feedback to centralized PLC/control systems.

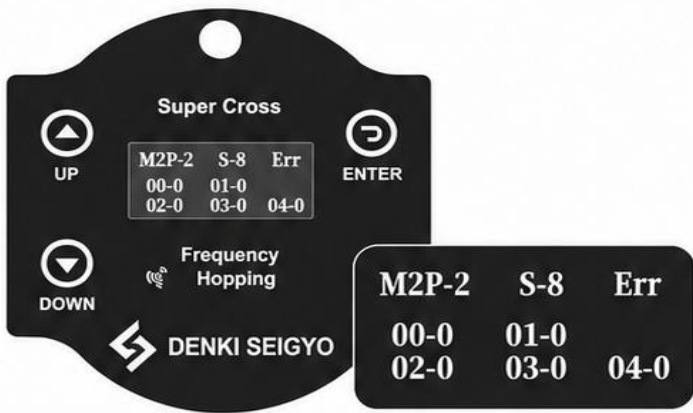
Large Industrial Plants

Useful where conventional cable routing between field devices and control rooms is expensive or difficult.



Product configuration instruction manual

Display and wiring instructions

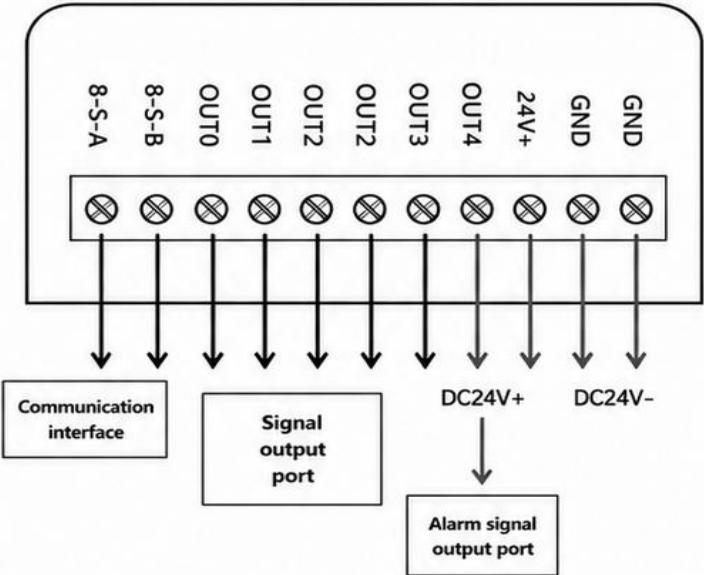


Receiver

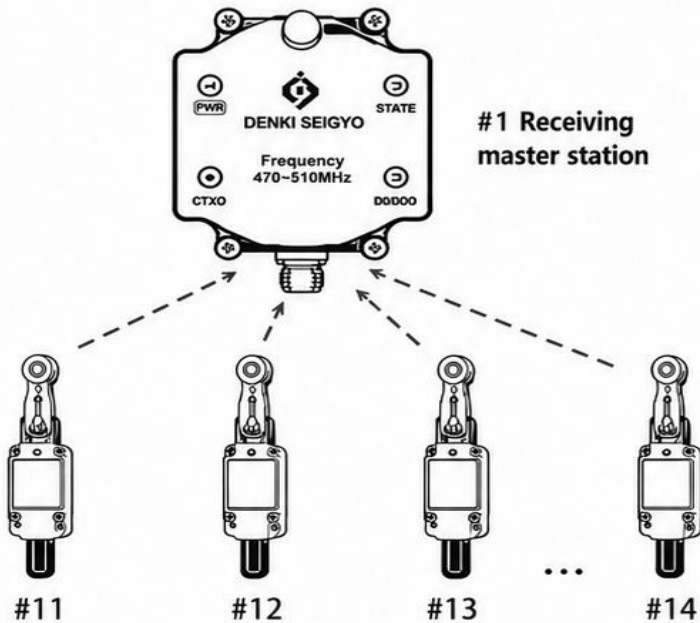
M2P--Digital	Product mode-ID number
S-Digital	Wireless signal strength, 8 is the strongest, 1 is the weakest
Err	Any subordinate address code is abnormal
D0-(0 or 1)	0 is no action, 1 is action (stroke 1)
D1-(0 or 1)	0 is no action, 1 is action (stroke 2)
D2-(0 or 1)	0 is no action, 1 is action (stroke 3)
D3-(0 or 1)	0 is no action, 1 is action (stroke 4)
D4-(0 or 1)	0 is normal, 1 is abnormal (stroke switch detection)

Receiver

24v	DC24V+
GND	DC24V-
OUT0	Output 1 (stroke 1)
OUT1	Output 2 (stroke 2)
OUT2	Output 3 (stroke 3)
OUT3	Output 4 (stroke 4)
OUT4	Abnormal output port



Application Instruction



Operation Mode

470~510MHz
Frequency Hopping
CSMA

Travel Switch Slave



Typical Applications

Application	Wireless Signal Path
Machine End Position	DSWLS-08 → Wireless Receiver → PLC
Conveyor End Detection	DSWLS-08 → Wireless Receiver → Motor / PLC
Crane Travel Limit	DSWLS-08 → Wireless Receiver → Crane Control Panel
Remote Machine Position	DSWLS-08 → Wireless Receiver → SCADA / PLC

Conventional vs Wireless Limit Switch

Conventional Wired Limit Switch	DSWLS-08 Wireless Limit Switch
Requires signal cable	Wireless signal transmission
Long cable runs required	Reduced field wiring
Cable trays may be required	Simplified installation
Cable damage can cause faults	Less exposed signal cabling
Expansion requires additional cables	Easier system expansion
Difficult to install on moving equipment	Suitable for moving equipment
Higher installation effort	Faster field installation

Wireless Limit Switch System

DSWLS-08

Wireless Limit Switch / Transmitter

Detects mechanical movement and transmits the switch status wirelessly.

DSWLS-R

Wireless Receiver

Receives the wireless signal and provides the corresponding output to the machine-control system.

PLC / Controller

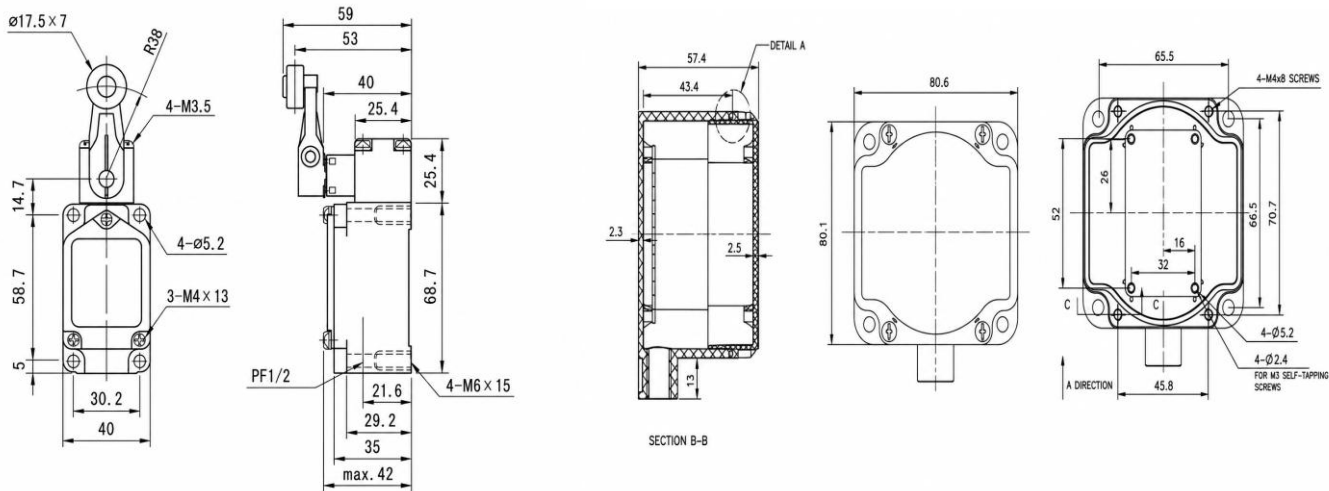
Processes the received limit-switch signal for:

- Machine control
- Interlocking
- Sequencing
- Position monitoring
- Automation logic

The Denki Seigyo page identifies **DSWLS-R** as the compatible receiver family for the wireless limit-switch system.



Dimension Details



Model Designation

Model	Description
DSWLS-08	Wireless Travel Limit Switch – mechanical configuration 08

DSWLS = Denki Seigyo Wireless Limit Switch
08 = Mechanical actuator/configuration designation.

Protection & Environmental Performance

Parameter	Specification
Protection	IP66 / IP67
Operating Temperature	-10°C to +80°C
Humidity	Up to 95% RH
Construction	Industrial metal
Water Resistance	Yes
Oil Resistance	Yes
Mechanical Durability	≥15 million operations

Important Application Note

Although DSWLS-08 is designed for industrial position and travel detection, **it should not be considered a safety-rated device unless the complete Denki Seigyo system has specifically been designed, validated and certified for the required safety function.**



Ordering Information

Standard Model

DSWLS-08 — Wireless Travel Limit Switch

For system selection, specify:

Selection Item	Requirement
Model	DSWLS-08
Wireless Frequency	Required frequency configuration
Receiver	Compatible DSWLS wireless receiver
Communication Range	Required operating distance
Antenna	Required antenna configuration
Receiver Output	Required PLC/control interface
Environment	Any special environmental requirements

Product Summary

Feature	DSWLS-08
Product	Wireless Travel Limit Switch
Detection	Travel / Position / End Limit
Switch Mechanism	Mechanical
Wireless Range	Up to 1000 m*
Frequency	470–510 MHz / 2.4 GHz*
Contact Rating	15 A @ 250 VAC
Mechanical Life	≥15 million operations
Electrical Life	≥500,000 operations
Protection	IP66 / IP67
Operating Temperature	–10°C to +80°C
Housing	Industrial Metal
Operating Speed	1 mm/s to 2 m/s
Mechanical Frequency	Up to 120 operations/min
Electrical Frequency	Up to 30 operations/min
Application	Industrial Travel & Position Detection

Why Choose DSWLS-08?

DSWLS-08 combines rugged mechanical limit-switch technology with wireless communication to provide reliable position detection while significantly reducing field wiring. Its high mechanical life, IP66/IP67 protection and long wireless operating range make it well suited for demanding industrial environments.

DENKI SEIGYO — Reliable Sensing. Smarter Automation.