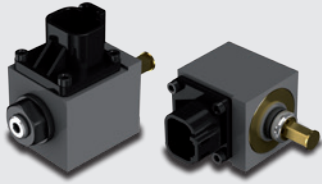


## Hall effect spool position sensors



- SPSD type
- SPSL type

### Spool position sensors

Accuracy, reliability and repeatability are the main features of Walvoil position sensors.

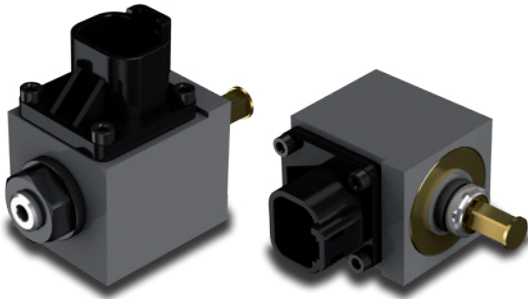
Converts the spool movements into an electric digital signal or into a voltage linear signal.

| Working conditions                  | SPSD   | SPSD-S                      | SPSL   | SPSL-S                      |
|-------------------------------------|--|-----------------------------|--|-----------------------------|
| Voltage supply                      | from 9 to 32 VDC                                   |                             | from 9 to 32 VDC or 5 VDC                          |                             |
| Current absorption                  | < 10 mA (no load)                                  |                             | < 10 mA (no load)                                  |                             |
| Mechanical life                     | 3x10 <sup>6</sup>                                  |                             | 3x10 <sup>6</sup>                                  |                             |
| Connector type                      | DT04-4P Deutsch                                    |                             | DT04-4P Deutsch                                    |                             |
| Weather protection                  | IP67 / IPX9K                                       |                             | IP67 / IPX9K                                       |                             |
| Working temperature                 | from -40°C to 105°C ( <i>from -40°F to 221°F</i> ) |                             | from -40°C to 105°C ( <i>from -40°F to 221°F</i> ) |                             |
| Working pressure                    | 350 bar ( <i>5100 psi</i> )                        |                             | 350 bar ( <i>5100 psi</i> )                        |                             |
| Max. electrical stroke              | ±10 mm ( <i>±0.39 in</i> )                         | ±5.5 mm ( <i>±0.22 in</i> ) | ±10 mm ( <i>±0.39 in</i> )                         | ±5.5 mm ( <i>±0.22 in</i> ) |
| Max. mechanical stroke              | ±10 mm ( <i>±0.39 in</i> )                         | ±5.5 mm ( <i>±0.22 in</i> ) | ±10 mm ( <i>±0.39 in</i> )                         | ±5.5 mm ( <i>±0.22 in</i> ) |
| EMC compatibility                   | ISO 13766 / ISO 14982                              |                             | ISO 13766 / ISO 14982                              |                             |
| Mechanical vibrations, shock, bumps | IEC 68-2-6,-27,-29                                 |                             | IEC 68-2-6,-27,-29                                 |                             |
| Output signal                       | PNP  |                             | /  |                             |
| type                                | PNP  |                             | /  |                             |
| max. current                        | 6 mA   |                             | /  |                             |
| range                               | /  |                             | from 0.5 to 4.5 V                                  |                             |
| linearity                           | /  |                             | ± 5%   |                             |
| spool in neutral                    | /  |                             | 2.5 ± 0.2 V  |                             |
| max. current                        | /  |                             | 1 mA   |                             |

# Spool position sensors

## Hall effect spool position sensors

### SPSD type



The SPSPD position sensor converts the spool movements into an electric digital signal.

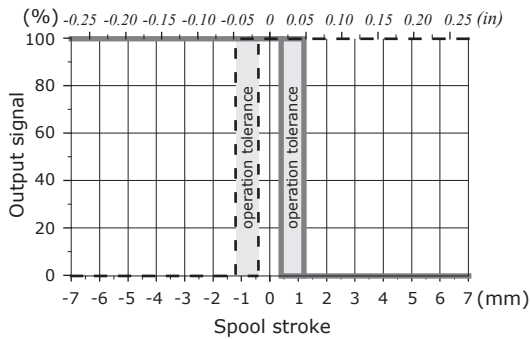
Main features are:

- contactless technology guarantees a long mechanical life;
- available for the complete range of valves.

Typical applications:

- cranes
- telehandlers
- aerial platforms
- front-end loaders (mid-mount)

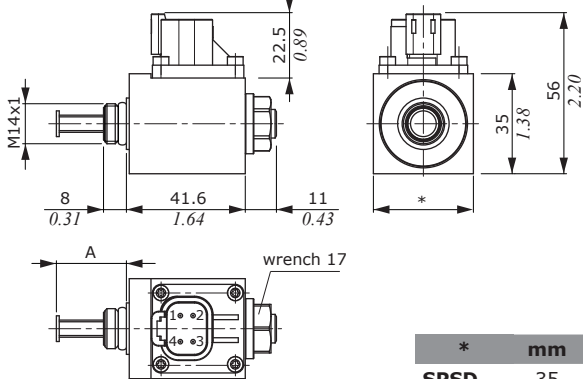
Output signal (SPSD example) vs. spool stroke



— out A  
- - - out B

### Mating connector

| Code       | Type            |
|------------|-----------------|
| 5CON140072 | DT06-4S Deutsch |



A = feeler neutral position.  
As for the sensor model,  
the dimension can be 16 or  
21.5 mm (0.63 or 0.85 in)

| *      | mm | in   |
|--------|----|------|
| SPSD   | 35 | 1.38 |
| SPSD-S | 31 | 1.22 |

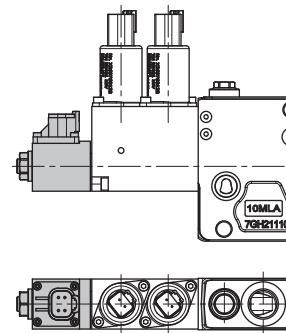
### Connector PIN-OUT

| Pin | Functions |
|-----|-----------|
| 1   | Out A     |
| 2   | GND       |
| 3   | VB+       |
| 4   | Out B     |

### SPSL ordering codes

| Code         | Description               | Electrical stroke    | Mechanical stroke    | Supply            |
|--------------|---------------------------|----------------------|----------------------|-------------------|
| 5SE210021D01 | SPSD/M1021/PNP/D4P/v1.0   | ±10 mm<br>(±0.39 in) | ±10 mm<br>(±0.39 in) | from 8<br>to 32 V |
| 5SE310021D01 | SPSD-S/M1021/PNP/D4P/V1.0 | ±10 mm<br>(±0.39 in) | ±10 mm<br>(±0.39 in) | from 8<br>to 32 V |

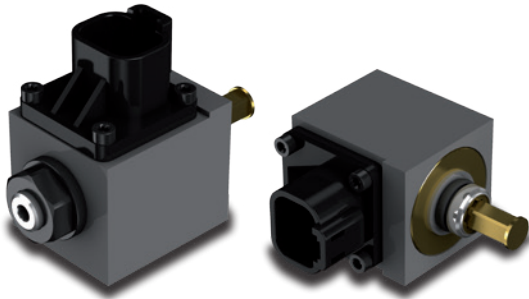
### Example of sensor in 8EZ control with DPX100 working section



**IMPORTANT:** It is suggested to order the sensors through the controls assembled on the monoblock and sectional valves.

These controls, in different configurations, are available on the full range of Walvoil directional valves.

### SPSL type



The SPSL position sensor converts the spool movements into a linear voltage signal.

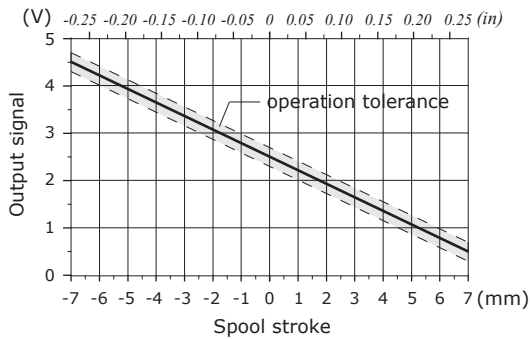
Main features are:

- contactless technology guarantees a long mechanical life;
- available for the complete range of valves.

Typical applications:

- cranes
- telehandlers
- aerial platforms
- front-end loaders (mid-mount)

**Output signal (SPSL example) vs. spool stroke**

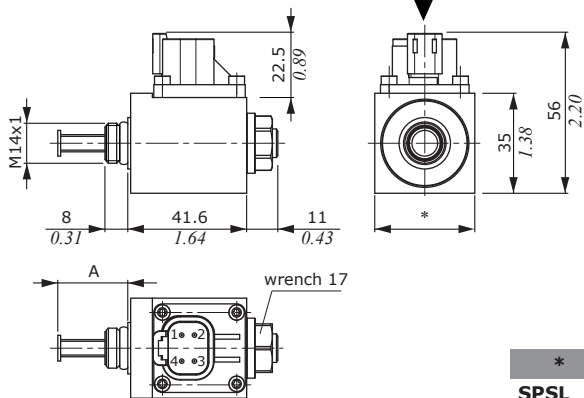
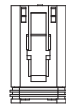


### SPSL ordering codes

| Code         | Description                   | Electrical stroke     | Mechanical stroke     | Supply         |
|--------------|-------------------------------|-----------------------|-----------------------|----------------|
| 5SE221021D01 | SPSL/0.5(OUT)-4.5(IN)-CR10    | ±10 mm<br>(±0.39 in)  | ±10 mm<br>(±0.39 in)  | 5 V            |
| 5SE225516D01 | SPSL/0.5(OUT)-4.5(IN)-CR5.5   | ±5.5 mm<br>(±0.22 in) | ±10 mm<br>(±0.39 in)  | 5 V            |
| 5SE226516D01 | SPSL/0.5(OUT)-4.5(IN)-CR6.5   | ±6.5 mm<br>(±0.26 in) | ±6.5 mm<br>(±0.26 in) | 5 V            |
| 5SE227021D01 | SPSL/0.5(OUT)-4.5(IN)-CR7     | ±7 mm<br>(±0.27 in)   | ±10 mm<br>(±0.39 in)  | 5 V            |
| 5SE228021D01 | SPSL/0.5(OUT)-4.5(IN)-CR8     | ±8 mm<br>(±0.31 in)   | ±10 mm<br>(±0.39 in)  | 5 V            |
| 5SE236521D01 | SPSL/8-32V/0.5(OUT)-4.5(IN)   | ±6.5 mm<br>(±0.26 in) | ±10 mm<br>(±0.39 in)  | from 8 to 32 V |
| 5SE325521D01 | SPSL-S/0.5(OUT)-4.5(IN)-CR5.5 | ±5.5 mm<br>(±0.22 in) | ±10 mm<br>(±0.39 in)  | 5 V            |

### Mating connector

| Code       | Type            |
|------------|-----------------|
| 5CON140072 | DT06-4S Deutsch |



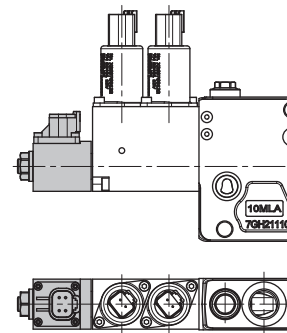
A = feeler neutral position.  
As for the sensor model, the dimension can be 16 or 21.5 mm (0.63 or 0.85 in)

| *      | mm | in   |
|--------|----|------|
| SPSL   | 35 | 1.38 |
| SPSL-S | 31 | 1.22 |

### Connector PIN-OUT

| Pin | Functions     |               |
|-----|---------------|---------------|
|     | 5V supply     | 8-32V supply  |
| 1   | + 5V          | signal OUT    |
| 2   | not connected | GND           |
| 3   | GND           | VB+           |
| 4   | signal OUT    | not connected |

### Example of sensor in 8EZ control with DPX100 working section



**IMPORTANT:** It is suggested to order the sensors through the controls assembled on the monoblock and sectional valves.

These controls, in different configurations, are available on the full range of Walvoil directional valves.