

SDVH 20 Spring Loaded DC LVDT Position Sensors

Introduction

The linear variable differential transformer (LVDT) has been widely used in applications such as power turbines, hydraulics, automation, aircraft, satellites, nuclear reactors, and many others. These transducers have low hysteresis and excellent repeatability.

DC-operated LVDTs are rugged in hermetically sealed sensors, constructed entirely of stainless steel 304 intended for environments containing moisture, dirt and fluid contaminants. They are designed to operate in conjunction with computer-based data processors (standard) or PLCs (option).



Features

- SS304 construction, Spring loaded
- DC operated, Built-in signal conditioner
- 3-wire voltage output 0-5V or 0-10V
2-wire current output 4-20mA
- Measurement ranges from 0mm to 100mm, high resolution and repeatability.
- Contactless, Long lifespan

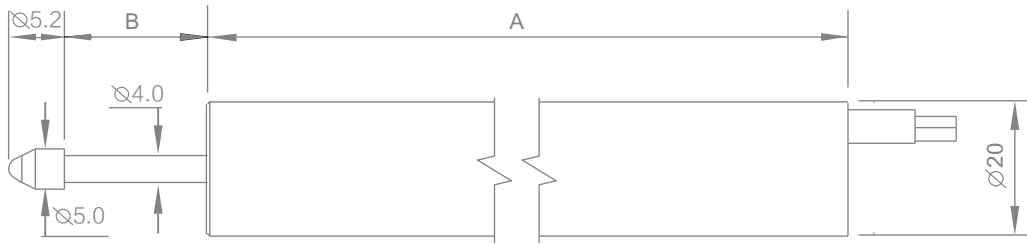
Applications

- TIR measurements
- Hydraulic cylinder position sensing
- Valve position sensing
- Roller gaps alignment
- Brake system inspections

Parameter

Series	SDVH20 Spring Loaded DC LVDT Position Sensors
Input Power	9 ~28V DC
Operating Current	Current of voltage output $\leq 12\text{mA}$
	2-wire current output of 4~20mA, Output: 4~20mA
Displ. Range	2.5, 5, 10, 15, 25, 50, 100mm
Output Signal	0 ~ 5V (9 ~12V DC Input)
	0 ~10V (15 ~28V DC Input)
	4 ~20mA (2-wire, 15 ~28V DC Input)
	Digital Output (9 ~28V DC Input Voltage)
Linearity Error	Analog Output $\pm 0.25\%$, $\pm 0.5\%$ Optional ; Digital Output: 0.25%, 0.1% etc. Optional
Repeatability Error	$\leq 0.01\mu\text{m}$ (Max), 16 bit for Digital Output
Dynamical Property	5Hz(Max.)
Operating Temp.	-25°C ~ +85°C
Thermal coefficient	Null Position $\leq 0.01\% \text{F.S} / ^\circ\text{C}$
	Sensitivity $\leq 0.025\% \text{F.S} / ^\circ\text{C}$

Dimensions



Parameter	SDVH20 Spring Loaded DC LVDT Position Sensors						
Displ. Range	2.5	5	10	15	25	50	100
A(mm)	80	90	110	130	170	210	320
B(mm)	5	8	15	22	34	60	115

All dimensions are in mm



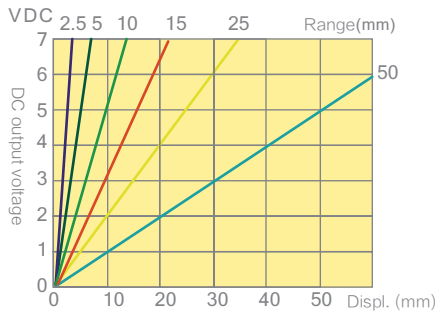
Caution

The output increases when the connecting rod moves axially.

Output

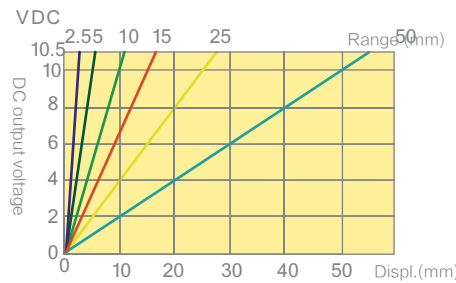
SDVH20 of different ranges(output 0–5V)
Voltage vs Displacement

DC Input 9–28V (12V DC recommended)



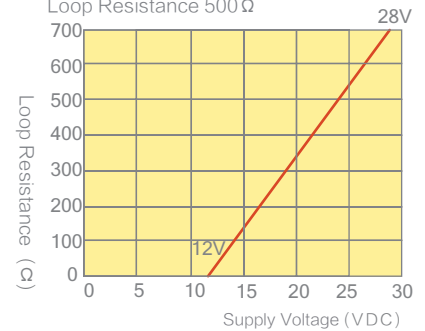
SDVH20 of different ranges(output 0–10V)
Voltage vs Displacement

DC Input 15–28V (15V DC recommended)



LVDT of Current Output
Loop Resistance (Max.) vs Supply Voltage

Input Voltage 15–28V DC
Input Voltage 24V DC(Recommended)
Loop Resistance 500 Ω



Connection



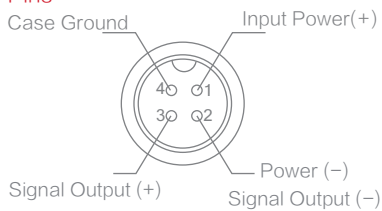
The voltage output of linear power supply needs to be used within range.

Please connect the pins according to the illustrations below, Available for both cable type and plug type.

Colors of the Cables

- Red** Power (+)
- Black** Power (-) Signal Output (-)
- Blue** Signal Output (+)

Pins

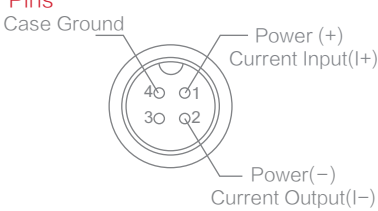


Analog Voltage Output

Colors of the Cables

- Red** Power (+) Current Input (I+)
- Black** Power (-) Current Output (I-)

Pins

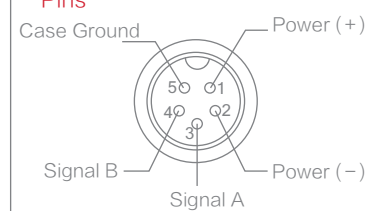


Analog Current Output

Colors of the Cables

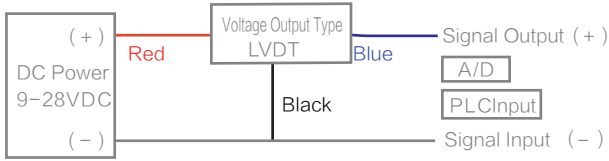
- Red** Power (+)
- Black** Power (-)
- Blue** Signal A
- White** Signal B

Pins

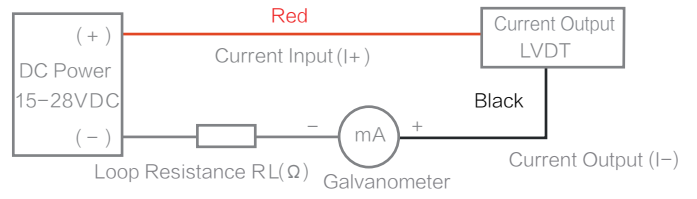


Digital Output of RS485

◆ Circuit of 2-wire Voltage Output Type



◆ Circuit of 2-wire Current Output Type



◆ Circuit of 2-wire PLC Type:



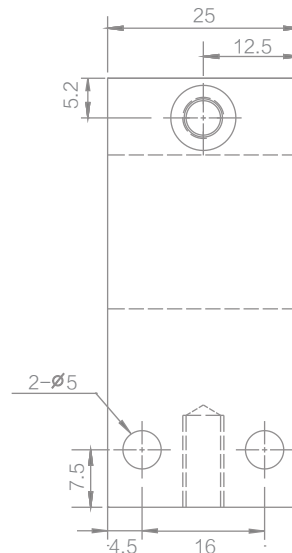
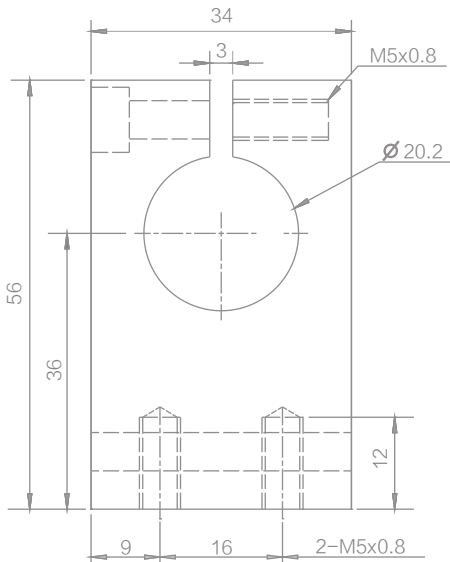
Installation



⚠ Mounting blocks must be low-CTE and non-magnetic. Magnetic mounting blocks such as iron ones are not allowed.

✔ Mounting blocks can be customized.

Dimensions of Mounting Blocks



Ordering Guide

SDVB20	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transmitter and Coils	X												Nil: Integrated A: Dual-tube B: Separate core C:Housingless... Z:Contact us for other structures
Range(number means ranges)		X	X	X									Ranges are in mm
Non-Linearity	A												0.25%
	B												0.50%
	C												1%
	D												3%
	E												5%
	S												0.1%(only for digital output)
Output Information							X	X					See Table.1
Thread Size									X	X			See Table.2
Outgoing Cables													D With connectors
													P Axial cable

Table 1. Output Information

	<input type="checkbox"/>	<input type="checkbox"/>	
Analog Output	Output Type	Output Range	
	A: Current Output	1、 4mA~20mA	
	V: Voltage Output	1、 0V~10V 4、 -5V~5V 2、 0V~5V 6、 -10V~10V A、 AC output	
Digital Output	Output Type	Data & Baud Rate	
	M: Modbus (Standard baud rate:9600)	RTU mode	ASCII
		0: 2400	A: 2400
		1: 4800	B: 4800
		2: 9600	C: 9600
		3: 19200	D: 19200
		4: 38400	E: 38400
5: 76800		F: 76800	
6: 115200	G: 115200		

Table 2. Thread size

<input type="checkbox"/>	<input type="checkbox"/>			
C: Cylindrical	Code	Thread(mm)	Code	Thread(mm)
M: Metric	1		B	12
T: Fine thread	2		C	14
	3		D	16
	4		E	18
	5		F	20
	6		G	22
	7		H	24
	8	8	I	28
	9		J	
	A	10	Z	Options

Example:

SDVB 20-1 0 A-V2- C F P

