SDVG20 DC Separate Core Displacement Sensor

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 hermetically sealed sensors, stainless steel 304 housing.They are designed for environments containing moisture, dirt,etc.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 500mm, high resolution and repeatability.
- Contactless, Long lifespan

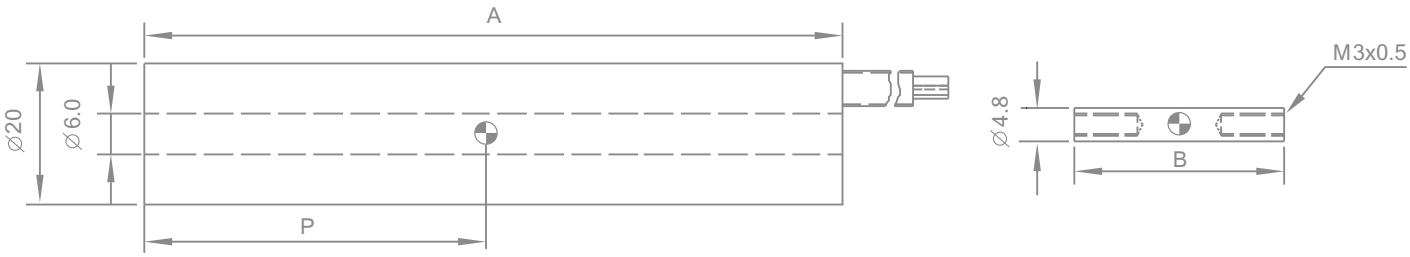
Applicaions

- Position feedback of machine tools
- Hydraulic cylinder position sensing
- Valve position sensing
- Bridge deflection&Concrete crack monitoring
- The subway tunnel crack monitoring

Parameter

	SDVG20 Separate Core Displacement Sensor
Power	9 ~28V DC
Operating Current	Current of voltage output≤12mA
	Output: 4~20mA；2-wire current output of 4~20mA
Displ. Range	2.5, 5, 10, 15, 25, 50, 100, 250, 500mm
Output Signal	0 ~ 5V (9 ~28V DC Input)
	0 ~10V (15 ~28V DC Input)
	4 ~20mA (2-wire, 15 ~28V DC Input)
	Digital RS485(9 ~12V DC Input Voltage)
Linearity Error	Analog Output ±0.25%, ±0.5% Optional ; Digital Output:0.25%,0.1% etc. Optional
Repeatability Error	≤0.01% of FS
Resolution	≤0.1μm(Max.), 16 bit for Digital Output
Dynamical Property	Standard 50Hz （Option）
Opertating Temp.	-77℉~185℉ (-25℃ ~ +85℃)
Thermal Coefficient	Null position ≤0.01%/℃
	Sensitivity ≤0.025%/℃

Dimension

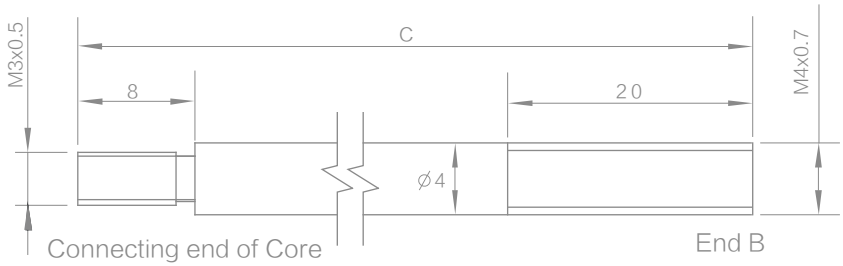


Parameter	SDVG20 Separate Core								
Displ. Range (mm)	2.5	5	10	15	25	50	100	250	500
Length A (mm)	80	90	110	130	170	210	290	498	800
Length B (mm)	20	30	40	50	70	80	120	150	180
Length C (mm)	21	26	36	46	66	86	126	230	381

Caution

1.The output increses when the connceting rod moves axially.
2. Core center nomial position at null.

Dimension of Core



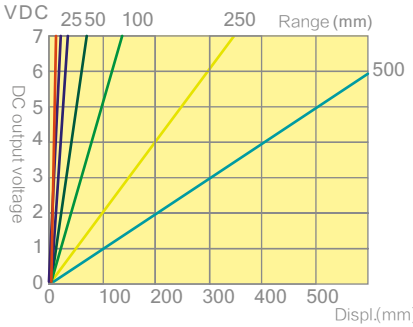
Parameter	SDVG20 Connecting Rod								
Displ. Range	2.5	5	10	15	25	50	100	250	500
Length C (mm)	58	58	68	78	98	128	168	346	618

Caution

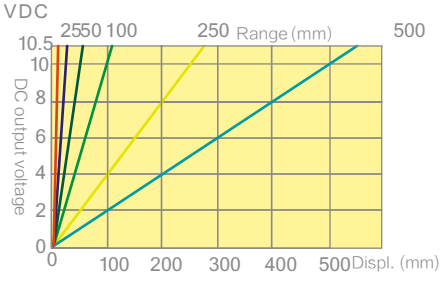
Note: For a separate core LVDT, the core and an object being measured should be connected by a rod. Material of the connecting rod must be non-magnetic such as SS304 and SS316. Options available for threads of the rod on two sides.

Output

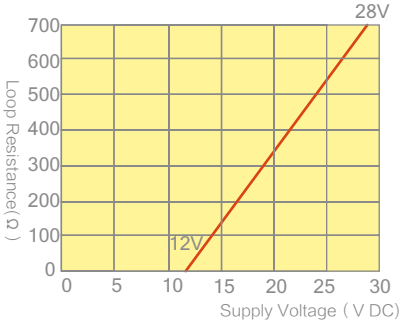
SDVG20 of different ranges(output 0-5V)
Voltage vs Displacement
DC Input 9~28V (12V DC recommended)



SDVG20 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 Resistance500Ω

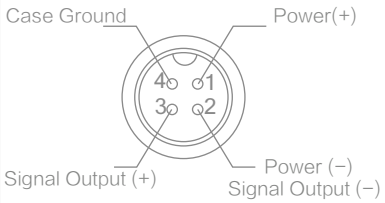


Connections

The voltage output of linear power supply needs to be used within range.
Please connect the pins accordion to the illustrations below, Available for cable type and plug type

Colors of the Cables
Red Power (+)
Black Power (−) Signal Output (−)
Blue Signal Output (+)

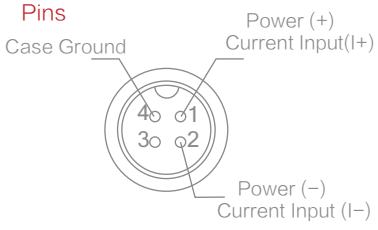
Pins



Analog Voltage Output

Colors of the Cables
Red Power (+) Current Input (I+)
Black Power (−) Current Output (I−)

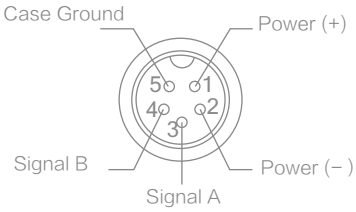
Pins



Analog Current Output

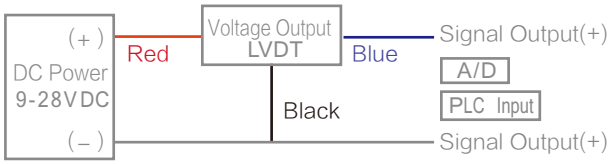
Colors of the Cables
Red Power (+)
Black Power (−)
Blue Signal A
White Signal B

Pins

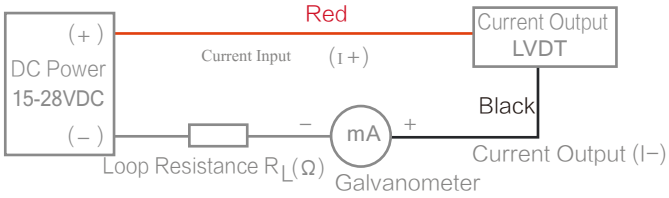


Digital Output Of RS485

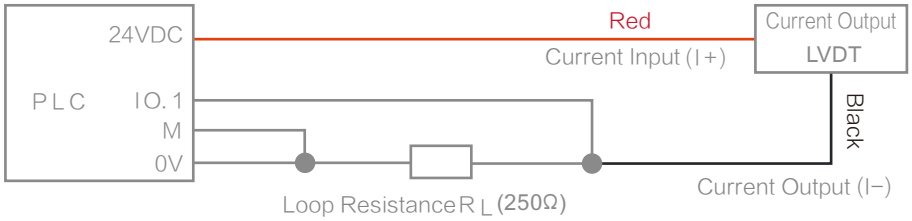
◆ Circuit Of 2−wire Voltage Output Type



◆ Circuit Of 2−wire Current Output Type



◆ Circuit Of PLC Type

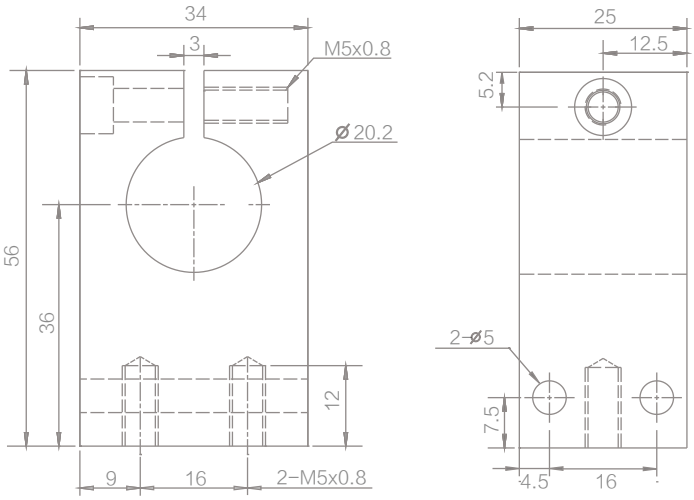


Installation

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

SDVG20	□	-	□	□	□	□	-	□	□	-	□	□	□	Information in detail
Transmitter and Coil	X													Nil: Integrated A: Dual-tube B: Separate core C:Housingless.... Z:Contact us for other structures
Range(in mm)			X	X	X									All ranges 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
Cable Exit													D	With connectors
													P	Axial cables(Standard 1m)
													M	With digital readout

Table1. Output Information

	□	□	
Analog Output	Output Type	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 0：2400 1：4800 2：9600 3：19200 4：38400 5: 76800 6: 115200	ASCII A：2400 B：4800 C：9600 D：19200 E：38400 F: 76800 G: 115200

Table 2. Thread size

□	□			
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

SDVG 20- 50 A- V2- C F P

- P: Axial cable 1m
- F: O.D 20mm
- C: Cylindrical
- V2: Voltage Output: 0~5V
- A: Non-linearity: 0.25% F.S
- 50: Displacement range 50mm
- 20: Diameter of Sense body 20mm
- SDVG: Separate Core