The 18 series non-contact absolute position transducer adopts the non-contact magnetostricitve measuring technology for precise, direct and absolute measurement. The absence of electrical contact on the cursor eliminates all wear and guarantees almost unlimited mechanical life expectancy. The non-contact (Floating) cursor provides exceptional ease of installation with a variety of available cursor position target.

The high versatile profile housing (IP67, need to match a suitable connector) offers full protection against outside agents for use in harsh environments with high contamination and presence of dust. Mounting is accomplished using clamps that allow precise mechanical adjustment. The 18 series is the most reliable and durable non-contact absolute position transducer among all.

Specifications

Order Code	1 8 0
Output	0-10Vdc, 10-0Vdc dual-output. minimum load 5kΩ
Measurement Type	Linear displacement
Resolution	Infinite, restricted by output ripple
Input Voltage	+24Vdc (20.4 - 28.8Vdc)
Input Protection	Polarity protection up to -30Vdc, Over voltage protection up to 36Vdc
Current Consumption	50-140mA (stroke range dependent)
Dielectric Strength	500Vdc (DC ground to machine ground)
Repeatability	< ±0.005% of full scale
Non-Linearity	< ±0.02% of full scale (minimum ±90μm)
Update Time	0.5 ms up to 1200 mm / 1.0 ms up to 2400 mm
	2.0 ms up to 4800 mm / 5.0 ms up to 7600 mm
Operation Temp.	-40 to 75℃, Humility 90% non-condensing
Sealing	IP65 / IP67 (with connector)
Vibration Rating	15g / 10-2000Hz / IEC standard 68-2-6
Shock Rating	100g single hit per IEC standard 68-2-27
EMC	Emission EN 61000-6-3, Immunity EN 61000-6-2
	EN 61000-4-2/3/4/6

Infinite resolution ...

Order Code

1 8 0 X X X X X X X X X X X

Output

0-10Vdc, 10-0Vdc Dual-output

Connector

0 = 4 pin connector (IP65)
1 = Cable outlet (P.A4 to select cable length)
2 = D60 - 6 pin M16 male connector (not include connector)
3 = 4 pin connector (IP67)
4 = 5 pin M12 male connector (not include connector)
5 = S15 - 8 pins M12 male connector (not include connector)
7 = S32 - 8 pin M16 male connector (not include connector)

Mounting (P. A1)

1 = 42.5mm mounting
2 = 42.5mm isolation mounting
3 = 50mm mounting

Magnet Type (P. A1)

1 = Captive
2 = Floating
3 = Die-cast
4 = Large floating

Stroke Length

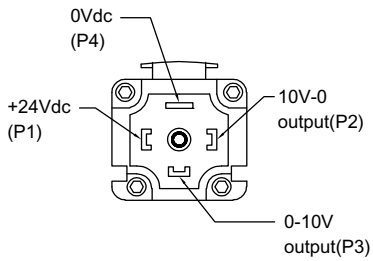
0 1 0 0 ,0 1 3 0 ,0 1 5 0 ,0 1 7 5 ,0 2 0 0 , 0 2 2 5 , 0 2 5 0
0 2 7 5 ,0 3 0 0 ,0 3 6 0 ,0 4 0 0 ,0 4 2 5 , 0 4 5 0 , 0 5 0 0
0 5 2 5 ,0 5 5 0 ,0 6 0 0 ,0 6 5 0 ,0 7 0 0 , 0 7 5 0 , 0 8 0 0
0 8 7 5 ,0 9 0 0 ,0 9 5 0 ,1 0 0 0 ,1 1 0 0 , 1 2 5 0 , 1 3 5 0
1 5 0 0 ,1 6 0 0 ,1 7 5 0 ,2 0 0 0 ,2 2 5 0 , 2 5 0 0 , 2 7 5 0
3 0 0 0 , 3 2 5 0 , 3 5 0 0 , 4 0 0 0 (other length upon request)

Cable Type (if cable outlet is selected)

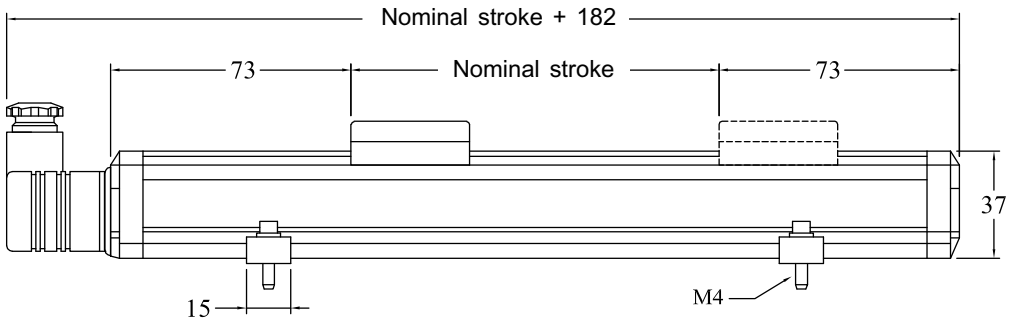
R02 = PVC direct cable, option: R01-R10 (1-10m)
H02 = PUR direct cable, option: H01-H10 (1-10m)
T02 = Teflon direct cable, option: T01-T10 (1-10m)
W02 = Waterproof direct cable, option: W01-W10 (1-10m)

Infinite resolution ...

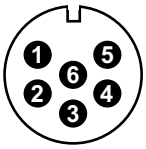
Dimension



4 pins connector
(View toward sensor pins)

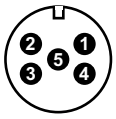


Wiring



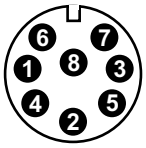
D60

1	0-10V output
2	Pin 1 DC Gnd
3	10-0V output
4	Pin 3 DC Gnd
5	+24 Vdc
6	0 Vdc



5 pins M12

1	+24Vdc
2	0-10V output
3	0 Vdc
4	10-0V output
5	DC Gnd



S32

1	N.C.
2	Signal Gnd
3	10 - 0V
4	N.C.
5	0 - 10V
6	0 Vdc
7	+24 Vdc
8	N.C.

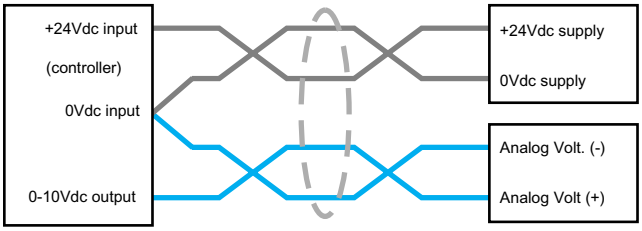
S15

1	Signal Gnd (P3)
2	Signal Gnd (P5)
3	10 - 0V
4	N.C.
5	0 - 10V
6	0 Vdc
7	+24 Vdc
8	N.C.

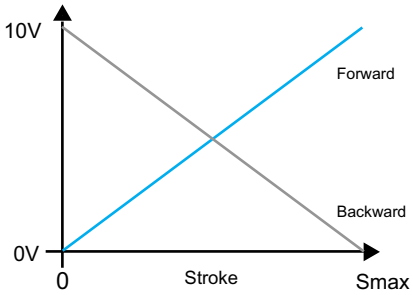
(View toward sensor pins)

Cable Outlet

	Cable	Voltage
1	Black	0-10V Output
2	White	DC Gnd
3	Yellow	10-0V Output
4	Green	N.C.
5	Red	+24 Vdc
6	Blue	0 Vdc



(connection example)



Caution:

Please do not connect controller analog input (-) to machine 0V or ground. Only connect directly to transducer 0V (P4).

Use 4 wires shielded twisted pair cable, dia. 0.2mm.

Do not connect power supply +24Vdc to transducer 0Vdc, and at the same time connect power supply 0Vdc to transducer output. This will cause transducer permanent failure.

(Warning: warranty does not include such source of failure)

The 18 series non-contact absolute position transducer adopts the non-contact magnetostricitve measuring technology for precise, direct and absolute measurement. Analog current interfaces are significantly less sensitive for signal traveling a long distance and passing through severe electrical interference.

The 18 series analog current output are available in 0-20mA, 20-0mA, 4-20mA, and 20-4mA. The output signal is directly proportional to the magnet position along the measuring stroke.

The absence of electrical contact on the magnet eliminates all wear and guarantees almost unlimited mechanical life expectancy.

Specifications

Order Code	181	182	184	185
Output	0-20mA	20-0mA	4-20mA	20-4mA
Measurement Type	Linear displacement			
Resolution	Infinite, restricted by output ripple			
Input Voltage	+24Vdc (20.4 - 28.8Vdc)			
Input Protection	Polarity protection up to -30Vdc, Over voltage protection up to 36Vdc			
Current Consumption	50-140mA (stroke range dependent)			
Dielectric Strength	500Vdc (DC ground to machine ground)			
Repeatability	< ±0.005% of full scale			
Non-Linearity	< ±0.02% of full scale (minimum ±90µm)			
Update Time	0.5 ms up to 1200 mm / 1.0 ms up to 2400 mm			
	2.0 ms up to 4800 mm / 5.0 ms up to 7600 mm			
Operation Temp.	-40 to 75°C, Humility 90% non-condensing			
Sealing	IP65 / IP67 (with connector)			
Vibration Rating	15g / 10-2000Hz / IEC standard 68-2-6			
Shock Rating	100g single hit per IEC standard 68-2-27			
EMC	Emission EN 61000-6-3, Immunity EN 61000-6-2			
	EN 61000-4-2/3/4/6			

...Non-contact technology

Order Code

1 8 X X X X X X X X X X X X

Output

1 = 0 - 2 0 m A
2 = 2 0 - 0 m A
4 = 4 - 2 0 m A
5 = 2 0 - 4 m A

Connector

0 = 4 pin connector (IP65)
1 = Cable outlet (P.A4 to select cable length)
2 = D60 - 6 pin M16 male connector (not include connector)
3 = 4 pin connector (IP67)
4 = 5 pin M12 male connector (not include connector)
5 = S15 - 8 pins M12 male connector (not include connector)
7 = S32 - 8 pin M16 male connector (not include connector)

Mounting (P. A1)

1 = 42.5mm mounting
2 = 42.5mm isolation mounting
3 = 50mm mounting

Magnet Type (P. A1)

1 = Captive
2 = Floating
3 = Die-cast
4 = Large floating

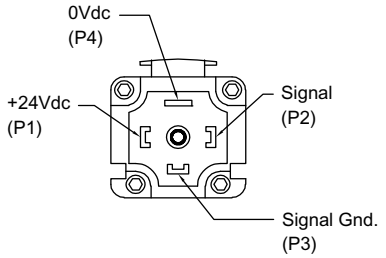
Stroke Length

0 1 0 0 , 0 1 3 0 , 0 1 5 0 , 0 1 7 5 , 0 2 0 0 , 0 2 2 5 , 0 2 5 0
0 2 7 5 , 0 3 0 0 , 0 3 6 0 , 0 4 0 0 , 0 4 2 5 , 0 4 5 0 , 0 5 0 0
0 5 2 5 , 0 5 5 0 , 0 6 0 0 , 0 6 5 0 , 0 7 0 0 , 0 7 5 0 , 0 8 0 0
0 8 7 5 , 0 9 0 0 , 0 9 5 0 , 1 0 0 0 , 1 1 0 0 , 1 2 5 0 , 1 3 5 0
1 5 0 0 , 1 6 0 0 , 1 7 5 0 , 2 0 0 0 , 2 2 5 0 , 2 5 0 0 , 2 7 5 0
3 0 0 0 , 3 2 5 0 , 3 5 0 0 , 4 0 0 0 (other length upon request)

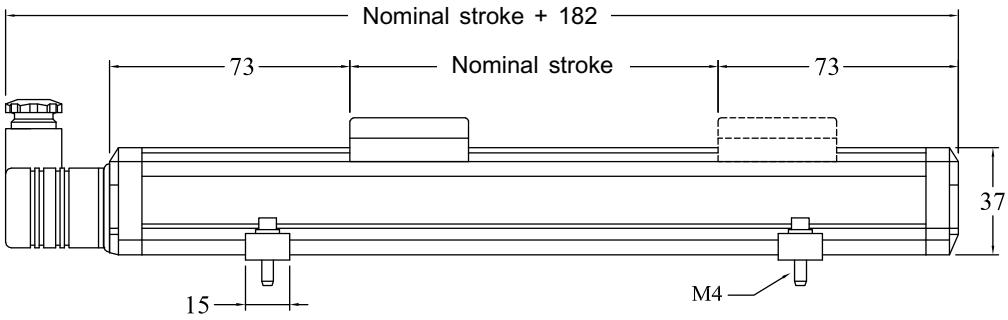
Cable Type (if cable outlet is selected)

R02 = PVC direct cable, option: R01-R10 (1-10m)
H02 = PUR direct cable, option: H01-H10 (1-10m)
T02 = Teflon direct cable, option: T01-T10 (1-10m)
W02 = Waterproof direct cable, option: W01-W10 (1-10m)

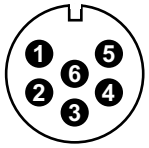
Dimension



4 pins connector
(View toward sensor pins)

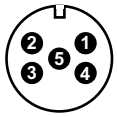


Wiring



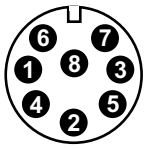
D60

1	Signal output
2	Signal Gnd
3	N.C.
4	N.C.
5	+24 Vdc
6	0 Vdc



5 pins M12

1	+24Vdc
2	Signal output
3	0 Vdc
4	N.C.
5	Signal Gnd



S32

1	0 - 20mA	20 - 0mA	4 - 20mA	20 - 4mA
2	Signal Gnd			
3	N.C.			
4	N.C.			
5	N.C.			
6	0 Vdc			
7	+24 Vdc			
8	N.C.			

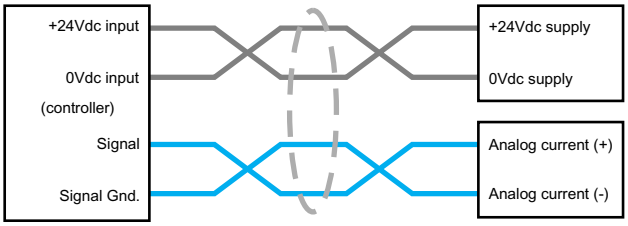
(View toward sensor pins)

S15

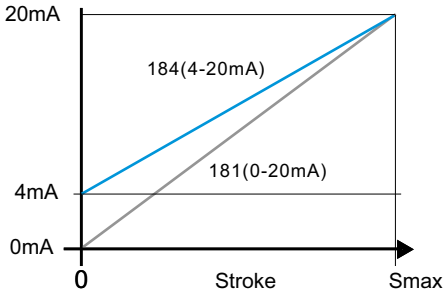
1	N.C.			
2	Signal Gnd			
3	N.C.			
4	N.C.			
5	0 - 20mA	20 - 0mA	4 - 20mA	20 - 4mA
6	0 Vdc			
7	+24 Vdc			
8	N.C.			

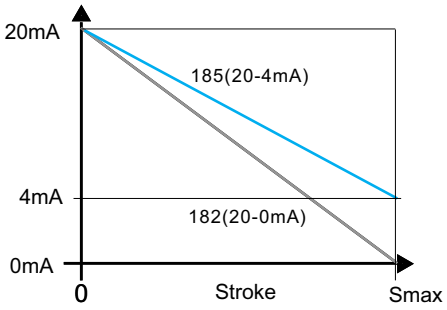
Cable Outlet

	Cable	Current
1	Black	Signal Output
2	White	Signal Gnd
3	Yellow	N.C.
4	Green	N.C.
5	Red	+24 Vdc
6	Blue	0 Vdc



(connection example)





Caution:

Please do not connect controller analog input (-) to machine 0V or ground. Only connect directly to transducer 0V (P4).

Use 4 wires shielded twisted pair cable, dia. 0.2mm.

Do not connect power supply +24Vdc to transducer 0Vdc, and at the same time connect power supply 0Vdc to transducer output. This will cause transducer permanent failure.

(Warning: warranty does not include such source of failure)

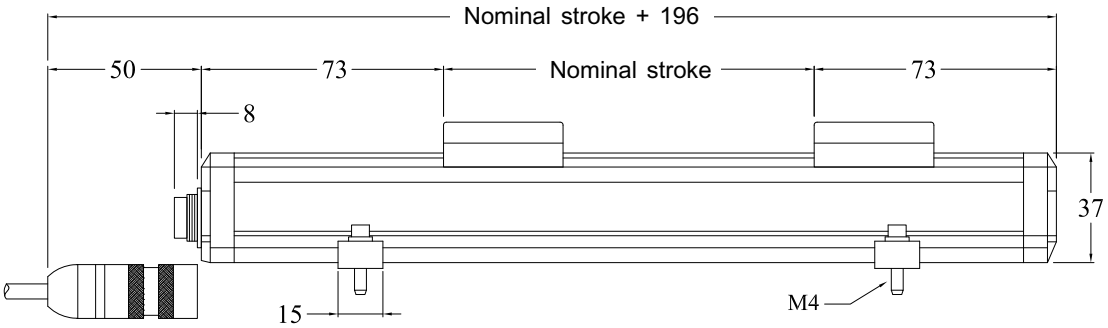
The 18 series start / stop interface is a simple and economical digital interface. The benefit of these interfaces has strong immunity to noise interference. The time between an assessment and the reply signal is directly proportional to the magnet position along the measuring stroke. The start / stop digital are transmitted using RS485/422 differential line drivers.

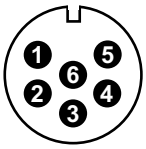
The 18 series non-contact absolute position transducer adopts the non-contact magnetostricitve measuring technology for precise, direct and absolute measurement. The absence of electrical contact on the magnet eliminates all wear and guarantees almost unlimited mechanical life expectancy.

Specifications

Order Code	1 8 3
Output	Start / Stop Digital Output
Measurement Type	Linear displacement
Resolution	0.1 / 0.01 / 0.005mm
Input Voltage	+24Vdc (20.4 - 28.8Vdc)
Input Protection	Polarity protection up to -30Vdc, Over voltage protection up to 36Vdc
Current Consumption	50-140mA (stroke range dependent)
Dielectric Strength	500Vdc (DC ground to machine ground)
Repeatability	< ±0.005% of full scale
Non-Linearity	< ±0.02% of full scale (minimum ±90µm)
Update Time	0.5 ms up to 1200 mm / 1.0 ms up to 2400 mm
	2.0 ms up to 4800 mm / 5.0 ms up to 7600 mm
Operation Temp.	-40 to 75°C, Humility 90% non-condensing
Sealing	IP67 (with connector)
Vibration Rating	15g / 10-2000Hz / IEC standard 68-2-6
Shock Rating	100g single hit per IEC standard 68-2-27
EMC	Emission EN 61000-6-3, Immunity EN 61000-6-2
	EN 61000-4-2/3/4/6

Economical digital solution ...





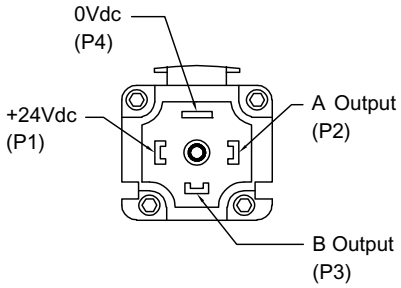
	1832
1	Stop (-)
2	Stop (+)
3	Start (+)
4	Start (-)
5	+24 Vdc
6	0Vdc

D60

	1836	1835
1	Start (+)	Start (+)
2	Start (-)	Stop (+)
3	Stop (+)	Start (-)
4	Stop (-)	N.C.
5	N.C.	Stop (-)
6	N.C.	0Vdc
7	+24 Vdc	+24 Vdc
8	0Vdc	N.C.

8 pins M12

(View toward sensor pins)



4 pins connector (1830)

Order Code

1 8 3 X X X X X X X

Output

3 = Start / Stop Digital output

Connector

0 = 4 pin connector (IP65, in use with module)
2 = D60 - 6 pin M16 male connector (not include connector)
5 = S15 - 8 pin M12 connector (not include connector)
6 = D84 - 8 pin M12 connector (not include connector)

Mounting (P. A1)

1 = 42.5mm mounting
2 = 42.5mm isolation mounting
3 = 50mm mounting

Magnet Type (P. A1)

1 = Captive
2 = Floating
3 = Die-cast
4 = Large floating

Stroke Length

0100,0130,0150,0175,0200,0225,0275
0300,0360,0400,0425,0450,0500,0525
0550,0600,0650,0700,0750,0800,0875
0900,0950,1000,1100,1250,1350,1500
1600,1750,2000,2250,2500,2750,3000
(other length upon request)