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FACTORY AUTOMATION SENSORS

Selection Guide

Connect with RS Pro by Allied

ALLIED ELECTRONICS & AUTOMATION

RS PRO

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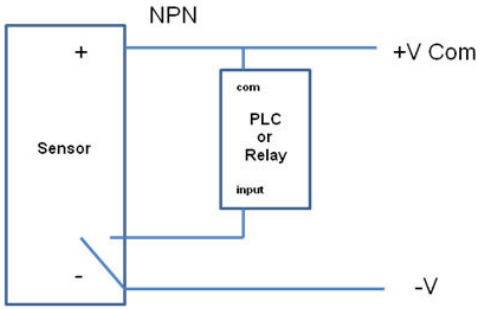
INDUCTIVE SENSOR: NPN OR PNP?

If your application requires an inductive sensor, you will need to decide what output type you require, NPN or PNP?

NPN Output:

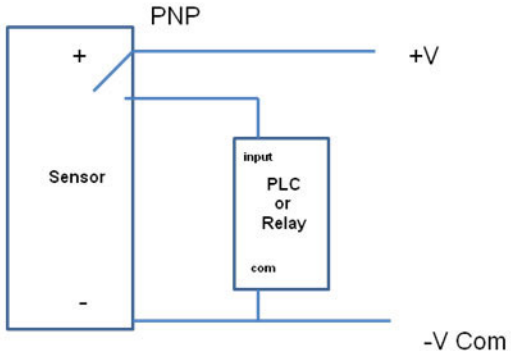
NPN are sinking sensors, these allow current to flow into the sensor and to –V.



With an NPN sensor the switching occurs on the –V rail. The +V rail forms the common between the device and the sensor. A permanent +V supply will be connected to the device that is to be activated, for instance a PLC or relay. When the sensor turns on, it switches the –V rail and completes the circuit. Current travels through the sensor transistor into the device, thus turning it on or changing its state.

PNP Output:

PNP are sourcing sensors and allow current to flow out from the sensor, from +V.



With a PNP sensor the switching occurs on the +V rail. The -V rail forms the common between the device and the sensor. A permanent -V supply will be connected to the device that is to be activated, for instance a PLC or relay. When the sensor turns on, it switches the +V rail and completes the circuit. Current travels through the sensor transistor into the device, thus turning it on or changing its state.

INDUCTIVE SENSOR: NPN OR PNP?

Remember

- If the DC voltage has a +V common, an NPN output sensor is needed. If the DC voltage has a –V common, a PNP output sensor is needed.
- NPN or PNP output does not have correlation to whether the sensor is NO (normally open) or NC (normally closed) as both NPN and PNP can be either NO or NC.

CHOOSING THE RIGHT CONNECTOR

Sensor Connector (M8/M12)

Used universally within many industrial control systems, M8 and M12 sensor connectors are an ideal choice for handling the rugged demands found within industrial applications such as food and beverage, research and development and machine and building.

Utilised in conjunction with sensor and switch cables, M8 and M12 sensor connectors are designed to work seamlessly with control systems and are available in right-angle and straight body orientations, as well as 3-, 4-, 5-, 6-, 8- and 12-pin variants.

Photoelectric sensors detect and measure physical objects or quantities by emitting a field or beam of electromagnetic radiation. An object is detected by measuring alterations in the return signal.

Through-beam sensors rely on two separate housings, one for the transmitter and one for the receiver. Retroreflective photoelectric sensors have both the transmitter and receiver contained within the same housing but require a reflector opposite to the sensor. Diffuse sensors are easier to install as only one device has to be mounted. This is because the transmitter and receiver are contained within one housing.

WHERE

Where would it be used?

- Industrial Factories
- Distribution Warehouses
- Food and Beverage
- Automation
- Building Maintenance

WHY

Why would you use this product?

The basic function is to detect the presence or absence of objects or measure the distance to the object. There are 3 main types of photoelectric sensors which provide reliable detection - these are through-beam, retroreflective and diffuse.

WHO

Who would use it?

- Electrical Engineer
- Maintenance Engineer
- Test Engineer
- Research & Development

Background Suppression

Image for illustrative purposes only

DETECTION TYPE	DETECTION RANGE (MM)	TERMINAL TYPE	OUTPUT TYPE	IP RATING	MPN	ALLIED PART NO
Background Suppression	100	2m Cable	NPN NO/NC	IP67	202-4467	72250927
Background Suppression	100	M12	NPN NO/NC	IP67	202-4469	72250928
Background Suppression	100	2m Cable	PNP NO/NC	IP67	202-4470	72250929
Background Suppression	100	M12	PNP NO/NC	IP67	202-4471	72250930
Background Suppression	350	2m Cable	NPN NO/NC	IP67	202-4448	72250909
Background Suppression	350	M8	NPN NO/NC	IP67	202-4449	72250910
Background Suppression	350	2m Cable	PNP NO/NC	IP67	202-4450	72250911
Background Suppression	350	M8	PNP NO/NC	IP67	202-4451	72250912
Background Suppression	2000	2m Cable	PNP+NPN	IP67	202-5446	72250941
Background Suppression	2000	M12	PNP+NPN	IP67	202-5447	72250942

Diffuse Reflection

Images for illustrative purposes only

DETECTION TYPE	DETECTION RANGE (MM)	TERMINAL TYPE	OUTPUT TYPE	IP RATING	THREAD SIZE	MPN	ALLIED PART NO
Diffuse Reflection	100	2m Cable	NPN	IP67	-	202-4428	72250891
Diffuse Reflection	100	2m Cable	PNP	IP67	-	202-4431	72250893
Diffuse Reflection	100	M8	NPN	IP67	-	202-4429	72250892
Diffuse Reflection	100	M8	PNP	IP67	-	202-4432	72250894
Diffuse Reflection	300	2m Cable	NPN NO/NC	IP67	-	202-4433	72250895
Diffuse Reflection	300	2m Cable	NPN NO/NC	IP67	M18×1	202-4453	72250913
Diffuse Reflection	300	2m Cable	PNP NO/NC	IP67	-	202-4435	72250897
Diffuse Reflection	300	2m Cable	PNP NO/NC	IP67	M18×1	202-4455	72250915

Diffuse Reflection Continued

Images for illustrative purposes only

DETECTION TYPE	DETECTION RANGE (MM)	TERMINAL TYPE	OUTPUT TYPE	IP RATING	THREAD SIZE	MPN	ALLIED PART NO
Diffuse Reflection	300	2m Cable	Relay NO/NC	IP67	-	202-4476	72250934
Diffuse Reflection	300	M12	NPN NO/NC	IP67	M18×1	202-4454	72250914
Diffuse Reflection	300	M12	PNP NO/NC	IP67	M18×1	202-4456	72250916
Diffuse Reflection	300	M8	NPN NO/NC	IP67	-	202-4434	72250896
Diffuse Reflection	300	M8	PNP NO/NC	IP67	-	202-4436	72250898
Diffuse Reflection	800	Terminal	Relay	IP67	-	202-5452	72250946
Diffuse Reflection	1000	2m Cable	NPN	IP67	-	202-4424	72250187
Diffuse Reflection	1000	2m Cable	PNP	IP67	-	202-4426	72250189
Diffuse Reflection	1000	M8	NPN	IP67	-	202-4425	72250188
Diffuse Reflection	1000	M8	PNP	IP67	-	202-4427	72250890
Diffuse Reflection	2000	2m Cable	PNP+NPN	IP67	-	202-4472	72250931
Diffuse Reflection	2000	2m Cable	Relay NO/NC	IP67	-	202-4475	72250933
Diffuse Reflection	2000	M12	PNP+NPN	IP67	-	202-4473	72250932
Diffuse Reflection	2000	Terminal	NO+NC, NPN	IP67	-	202-5448	72250943
Diffuse Reflection	2000	Terminal	NO+NC, PNP	IP67	-	202-5450	72250944
Diffuse Reflection	2000	Terminal	Relay	IP67	-	202-5451	72250945

Polarized Retroreflective

Image for illustrative purposes only

DETECTION TYPE	DETECTION RANGE (MM)	TERMINAL TYPE	OUTPUT TYPE	IP RATING	MPN	ALLIED PART NO
Polarized Retroreflective	3000	2m Cable	NPN NO/NC	IP67	201-8160	72250183
Polarized Retroreflective	3000	2m Cable	PNP NO/NC	IP67	201-8162	72250185
Polarized Retroreflective	3000	2m Cable	NPN NO/NC	IP67	202-4457	72250917
Polarized Retroreflective	3000	2m Cable	PNP NO/NC	IP67	202-4459	72250919
Polarized Retroreflective	3000	M8	NPN NO/NC	IP67	201-8161	72250184
Polarized Retroreflective	3000	M8	PNP NO/NC	IP67	201-8163	72250186
Polarized Retroreflective	3000	M12	NPN NO/NC	IP67	202-4458	72250918
Polarized Retroreflective	3000	M12	PNP NO/NC	IP67	202-4460	72250920
Polarized Retroreflective	4000	2m Cable	NPN NO/NC	IP67	202-4438	72250900
Polarized Retroreflective	4000	2m Cable	PNP NO/NC	IP67	202-4439	72250901
Polarized Retroreflective	4000	M8	NPN NO/NC	IP67	202-4437	72250899
Polarized Retroreflective	4000	M8	PNP NO/NC	IP67	202-4440	72250902
Polarized Retroreflective	5000	2m Cable	PNP+NPN	IP67	202-4477	72250935
Polarized Retroreflective	5000	2m Cable	Relay NO/NC	IP67	202-4479	72250937
Polarized Retroreflective	5000	M12	PNP+NPN	IP67	202-4478	72250936
Polarized Retroreflective	5000	M12	Relay NO/NC	IP67	202-4481	72250938
Polarized Retroreflective	12000	Terminal	NPN NO/NC	IP67	202-5457	72250950
Polarized Retroreflective	12000	Terminal	PNP NO/NC	IP67	202-5458	72250951
Polarized Retroreflective	12000	Terminal	Relay NO/NC	IP67	202-5459	72250952

Retroreflective

Image for illustrative purposes only

DETECTION TYPE	DETECTION RANGE (MM)	TERMINAL TYPE	OUTPUT TYPE	IP RATING	MPN	ALLIED PART NO
Retroreflective	5000	Terminal	NC, NPN	IP67	202-5453	72250947
Retroreflective	5000	Terminal	NC, PNP	IP67	202-5454	72250948
Retroreflective	5000	Terminal	Relay	IP67	202-5456	72250949

Through Beam

Image for illustrative purposes only

DETECTION TYPE	DETECTION RANGE (MM)	TERMINAL TYPE	OUTPUT TYPE	IP RATING	MPN	ALLIED PART NO
Through Beam (Emitter)	10000	2m Cable	-	IP67	202-4445	72250907
Through Beam (Emitter)	10000	M8	-	IP67	202-4447	72250908
Through Beam (Emitter)	20000	2m Cable	-	IP67	202-4461	72250921
Through Beam (Emitter)	20000	M12	-	IP67	202-4462	72250922
Through Beam (Emitter)	30000	Terminal	Relay	IP67	202-5460	72250953
Through Beam (Emitter)	60000	2m Cable	-	IP67	202-4482	72250939
Through Beam (Receiver)	10000	2m Cable	NPN NO/NC	IP67	202-4441	72250903
Through Beam (Receiver)	10000	2m Cable	PNP NO/NC	IP67	202-4443	72250905
Through Beam (Receiver)	10000	M8	NPN NO/NC	IP67	202-4442	72250904
Through Beam (Receiver)	10000	M8	PNP NO/NC	IP67	202-4444	72250906
Through Beam (Receiver)	20000	2m Cable	NPN NO/NC	IP67	202-4463	72250923
Through Beam (Receiver)	20000	2m Cable	PNP NO/NC	IP67	202-4465	72250925
Through Beam (Receiver)	20000	M12	NPN NO/NC	IP67	202-4464	72250924
Through Beam (Receiver)	20000	M12	PNP NO/NC	IP67	202-4466	72250926
Through Beam (Receiver)	30000	Terminal	Relay	IP67	202-5462	72250954
Through Beam (Receiver)	60000	2m Cable	Relay NO/NC	IP67	202-4483	72250940

Background Suppression M18×1

Image for illustrative purposes only

DETECTION TYPE	HOUSING MATERIAL	DETECTION RANGE (MM)	TERMINAL TYPE	OUTPUT TYPE	IP RATING	MPN	ALLIED PART NO
Background Suppression	Brass Nickel Plated	1000	2m Cable	PNP NO/NC	IP67	204-4013	72241981
Background Suppression	Brass Nickel Plated	1000	2m Cable	NPN NO/NC	IP67	204-4014	72241982
Background Suppression	Brass Nickel Plated	1000	M12	PNP NO/NC	IP67	204-4015	72250983
Background Suppression	Brass Nickel Plated	1000	M12	NPN NO/NC	IP67	204-4016	72250984

Diffuse Reflection

Image for illustrative purposes only

DETECTION TYPE	HOUSING MATERIAL	DETECTION RANGE (MM)	TERMINAL TYPE	OUTPUT TYPE	IP RATING	THREAD SIZE	MPN	ALLIED PART NO
Diffuse Reflection	Brass Nickel Plated	150	2m Cable	NPN NO	IP67	M12×1	204-3961	72241950
Diffuse Reflection	Brass Nickel Plated	150	2m Cable	PNP NO	IP67	M12×1	204-3962	72241951
Diffuse Reflection	Brass Nickel Plated	150	M12	NPN NO	IP67	M12×1	204-3963	72241952
Diffuse Reflection	Brass Nickel Plated	150	M12	PNP NO	IP67	M12×1	204-3965	72250966
Diffuse Reflection	Brass Nickel Plated	400	2m Cable	NPN NO/NC	IP67	M18×1	204-3968	72250967
Diffuse Reflection	Brass Nickel Plated	400	M12	NPN NO/NC	IP67	M18×1	204-3970	72241955
Diffuse Reflection	Brass Nickel Plated	400	2m Cable	PNP NO/NC	IP67	M18×1	204-3969	72250968
Diffuse Reflection	Brass Nickel Plated	400	M12	PNP NO/NC	IP67	M18×1	204-3971	72250969
Diffuse Reflection	Brass Nickel Plated	1000	2m Cable	NPN NO/NC	IP67	M30×1.5	204-3976	72241957
Diffuse Reflection	Brass Nickel Plated	1000	2m Cable	PNP NO/NC	IP67	M30×1.5	204-3977	72241958
Diffuse Reflection	PBT	150	2m Cable	NPN NO	IP67	M12×1	204-3966	72241953
Diffuse Reflection	PBT	150	2m Cable	PNP NO	IP67	M12×1	204-3967	72241954
Diffuse Reflection	PBT	400	2m Cable	NPN NO/NC	IP67	M18×1	204-3972	72250970
Diffuse Reflection	PBT	400	2m Cable	PNP NO/NC	IP67	M18×1	204-3973	72250971

Diffuse Reflection Continued

Image for illustrative purposes only

DETECTION TYPE	HOUSING MATERIAL	DETECTION RANGE (MM)	TERMINAL TYPE	OUTPUT TYPE	IP RATING	THREAD SIZE	MPN	ALLIED PART NO
Diffuse Reflection	PBT	400	M12	NPN NO/NC	IP67	M18×1	204-3974	72241956
Diffuse Reflection	PBT	400	M12	PNP NO/NC	IP67	M18×1	204-3975	72250972
Diffuse Reflection	PBT	1000	2m Cable	NPN NO/NC	IP67	M30×1.5	204-3978	72241959
Diffuse Reflection	PBT	1000	2m Cable	PNP NO/NC	IP67	M30×1.5	204-3979	72241960

Polarized Retroreflective M18×1

Image for illustrative purposes only

DETECTION TYPE	DETECTION RANGE (MM)	TERMINAL TYPE	OUTPUT TYPE	IP RATING	MPN	ALLIED PART NO
Polarized Retroreflective	3000	2m Cable	NPN NO/NC	IP67	204-4017	72250985
Polarized Retroreflective	3000	2m Cable	PNP NO/NC	IP67	204-4019	72250986
Polarized Retroreflective	3000	M12	NPN NO/NC	IP67	204-4020	72250987
Polarized Retroreflective	3000	M12	PNP NO/NC	IP67	204-4021	72250988

Retroreflective M18×1

Image for illustrative purposes only

DETECTION TYPE	HOUSING MATERIAL	DETECTION RANGE (MM)	TERMINAL TYPE	OUTPUT TYPE	IP RATING	MPN	ALLIED PART NO
Retroreflective	Brass Nickel Plated	3000	2m Cable	NPN NO/NC	IP67	204-3980	72250973
Retroreflective	Brass Nickel Plated	3000	2m Cable	PNP NO/NC	IP67	204-3981	72250974
Retroreflective	Brass Nickel Plated	3000	M12	PNP NO/NC	IP67	204-3982	72250975
Retroreflective	Brass Nickel Plated	3000	M12	PNP NO	IP67	204-3983	72241961
Retroreflective	PBT	3000	2m Cable	NPN NO/NC	IP67	204-3984	72250976
Retroreflective	PBT	3000	2m Cable	PNP NO/NC	IP67	204-3985	72241962

Retroreflective M18×1 Continued

Image for illustrative purposes only

DETECTION TYPE	HOUSING MATERIAL	DETECTION RANGE (MM)	TERMINAL TYPE	OUTPUT TYPE	IP RATING	MPN	ALLIED PART NO
Retroreflective	PBT	3000	M12	PNP NO/NC	IP67	204-3987	72241963
Retroreflective	PBT	3000	M12	PNP NO	IP67	204-3988	72241964
Retroreflective	PBT	3000	M12	NPN NO/NC	IP67	204-3989	72241965

Through Beam

Image for illustrative purposes only

DETECTION TYPE	HOUSING MATERIAL	DETECTION RANGE (MM)	TERMINAL TYPE	OUTPUT TYPE	IP RATING	THREAD SIZE	MPN	ALLIED PART NO
Through Beam (Emitter)	Brass Nickel Plated	5000	2m Cable	-	IP67	M12×1	204-3990	72241966
Through Beam (Emitter)	Brass Nickel Plated	10000	2m Cable	-	IP67	M18×1	204-3994	72241969
Through Beam (Emitter)	Brass Nickel Plated	20000	2m Cable	-	IP67	M18×1	204-3997	72250977
Through Beam (Emitter)	Brass Nickel Plated	20000	2m Cable	-	IP67	M30×1.5	204-4007	72241975
Through Beam (Emitter)	PBT	10000	2m Cable	-	IP67	M18×1	204-4000	72250979
Through Beam (Emitter)	PBT	20000	2m Cable	-	IP67	M18×1	204-4004	72250981
Through Beam (Emitter)	PBT	20000	2m Cable	-	IP67	M30×1.5	204-4010	72241978
Through Beam (Receiver)	Brass Nickel Plated	5000	2m Cable	NPN NO	IP67	M12×1	204-3991	72241967
Through Beam (Receiver)	Brass Nickel Plated	5000	2m Cable	PNP NO	IP67	M12×1	204-3993	72241968
Through Beam (Receiver)	Brass Nickel Plated	10000	2m Cable	NPN NO/NC	IP67	M18×1	204-3995	72241970
Through Beam (Receiver)	Brass Nickel Plated	10000	2m Cable	PNP NO/NC	IP67	M18×1	204-3996	72241971
Through Beam (Receiver)	Brass Nickel Plated	20000	2m Cable	NPN NO/NC	IP67	M18×1	204-3998	72250978
Through Beam (Receiver)	Brass Nickel Plated	20000	2m Cable	PNP NO/NC	IP67	M18×1	204-3999	72241972

Through Beam Continued

Image for illustrative purposes only

DETECTION TYPE	HOUSING MATERIAL	DETECTION RANGE (MM)	TERMINAL TYPE	OUTPUT TYPE	IP RATING	THREAD SIZE	MPN	ALLIED PART NO
Through Beam (Receiver)	Brass Nickel Plated	20000	2m Cable	NPN NO/NC	IP67	M30×1.5	204-4008	72241976
Through Beam (Receiver)	Brass Nickel Plated	20000	2m Cable	PNP NO/NC	IP67	M30×1.5	204-4009	72241977
Through Beam (Receiver)	PBT	10000	2m Cable	NPN NO/NC	IP67	M18×1	204-4001	72241973
Through Beam (Receiver)	PBT	10000	2m Cable	PNP NO/NC	IP67	M18×1	204-4003	72250980
Through Beam (Receiver)	PBT	20000	2m Cable	NPN NO/NC	IP67	M18×1	204-4005	72250982
Through Beam (Receiver)	PBT	20000	2m Cable	PNP NO/NC	IP67	M18×1	204-4006	72241974
Through Beam (Receiver)	PBT	20000	2m Cable	NPN NO/NC	IP67	M30×1.5	204-4011	72241979
Through Beam (Receiver)	PBT	20000	2m Cable	PNP NO/NC	IP67	M30×1.5	204-4012	72241980

INDUCTIVE PROXIMITY SENSORS

An inductive sensor provides non-contact detection of metallic objects, with some sensors being able to target both ferrous and non-ferrous metals, while others specialize in sensing only one type. Inductive proximity sensors are suitable for use in virtually any industry with some types also able to be used in hazardous environments.

Inductive sensors can also be affected by interaction with other sensors and ambient environmental influences. Careful installation will be required to ensure the sensor is effective and is not adversely affected by any surrounding sensors or metallic objects.

WHERE

Where would it be used?

Inductive proximity sensors are suitable for use in virtually any industry. Common applications include the food and beverage industry, robotics, machine tools, packaging and materials handling, livestock breeding etc. Any close range detection of ferrous (iron) material.

WHY

Why would you use this product?

Zero moving parts increases the sensors resistance to the effects caused by contaminant build up. With a proper set up procedure, the life expectancy of this sensor can be extended greatly.

WHO

Who would use it?

- Test Engineer
- Research & Development
- Design Engineer
- Electrical Engineer
- Maintenance Engineer
- Mechanic

Inductive Sensor

Image for illustrative purposes only

DETECTION RANGE (MM)	OUTPUT TYPE	HOUSING MATERIAL	TERMINAL TYPE	THREAD SIZE	MOUNTING TYPE	MPN	ALLIED PART NO
0.6	PNP NO	Stainless Steel	2m Cable	M4×0.5	Flush Mounted	206-6124	72251008
0.8	PNP NO	Stainless Steel	2m Cable	M5×0.5	Flush Mounted	206-6127	72251010
0.8	PNP NO	Stainless Steel	M8	M5×0.5	Flush Mounted	206-6126	72251009
1.5	PNP NO	Stainless Steel	2m Cable	M5×0.5	Flush Mounted	206-6129	72251012
1.5	PNP NO	Stainless Steel	M8	M5×0.5	Flush Mounted	206-6128	72251011
2	PNP NO	Brass Nickel Plated	2m Cable	M8×1	Flush Mounted	206-6152	72251015
2	PNP NO	Brass Nickel Plated	2m Cable	M8×1	Flush Mounted	206-6154	72251016
2	PNP NO	Brass Nickel Plated	M8	M8×1	Flush Mounted	206-6150	72251013
2	PNP NO	Brass Nickel Plated	M8	M8×1	Flush Mounted	206-6151	72251014
2	PNP NO	Plastic Vistal®	2m Cable	-	Flush Mounted	206-6170	72271131
2	PNP NO	Plastic Vistal®	M8	-	Flush Mounted	206-6168	72271130
2	PNP NO	Stainless Steel	2m Cable	M8×1	Flush Mounted	206-6134	72269455
2	PNP NO	Stainless Steel	2m Cable	M8×1	Flush Mounted	206-6135	72269456
2	PNP NO	Stainless Steel	M12	M8×1	Flush Mounted	206-6130	72269452
2	PNP NO	Stainless Steel	M8	M8×1	Flush Mounted	206-6132	72269453
2	PNP NO	Stainless Steel	M8	M8×1	Flush Mounted	206-6133	72269454
3	PNP NO	Plastic Vistal®	2m Cable	-	Flush Mounted	206-6172	72271133
3	PNP NO	Plastic Vistal®	M8	-	Flush Mounted	206-6171	72271132
4	PNP NO	Brass Nickel Plated	2m Cable	M12×1	Flush Mounted	206-6157	72251019
4	PNP NO	Brass Nickel Plated	M12	M12×1	Flush Mounted	206-6155	72251017
4	PNP NO	Brass Nickel Plated	M12	M12×1	Flush Mounted	206-6156	72251018
4	PNP NO	Plastic Vistal®	2m Cable	-	Flush Mounted	206-6174	72271135

Inductive Sensor Continued

Image for illustrative purposes only

DETECTION RANGE (MM)	OUTPUT TYPE	HOUSING MATERIAL	TERMINAL TYPE	THREAD SIZE	MOUNTING TYPE	MPN	ALLIED PART NO
4	PNP NO	Plastic Vistal®	M8	-	Flush Mounted	206-6173	72271134
4	PNP NO	Stainless Steel	2m Cable	M8×1	Non-Flush Mounted	206-6136	72269457
4	PNP NO	Stainless Steel	2m Cable	M12×1	Flush Mounted	206-6139	72271120
4	PNP NO	Stainless Steel	2m Cable	M12×1	Flush Mounted	206-6140	72271121
4	PNP NO	Stainless Steel	M12	M12×1	Flush Mounted	206-6137	72269458
4	PNP NO	Stainless Steel	M12	M12×1	Flush Mounted	206-6138	72269459
8	NPN NO	Brass Nickel Plated	2m Cable	M12×1	Non-Flush Mounted	206-6158	72251020
8	PNP NO	Brass Nickel Plated	2m Cable	M12×1	Non-Flush Mounted	206-6160	72251022
8	PNP NO	Brass Nickel Plated	2m Cable	M18×1	Flush Mounted	206-6163	72251025
8	PNP NO	Brass Nickel Plated	M12	M18×1	Flush Mounted	206-6162	72251024
8	PNP NO	Brass Nickel Plated	M12	M12×1	Non-Flush Mounted	206-6159	72251021
8	PNP NO	Brass Nickel Plated	M12	M18×1	Flush Mounted	206-6161	72251023
8	PNP NO	Stainless Steel	2m Cable	M18×1	Quasi-Flush	206-6143	72271124
8	PNP NO	Stainless Steel	2m Cable	M18×1	Quasi-Flush	206-6144	72271125
8	PNP NO	Stainless Steel	M12	M18×1	Quasi-Flush	206-6141	72271122
8	PNP NO	Stainless Steel	M12	M18×1	Quasi-Flush	206-6142	72271123
10	PNP NC	Brass Nickel Plated	2m Cable	M30×1.5	Flush Mounted	206-6165	72251027
15	PNP NO	Stainless Steel	2m Cable	M30×1.5	Flush Mounted	206-6148	72271128
15	PNP NO	Stainless Steel	2m Cable	M30×1.5	Flush Mounted	206-6149	72271129
15	PNP NO	Stainless Steel	M12	M30×1.5	Flush Mounted	206-6145	72271126
15	PNP NO	Stainless Steel	M12	M30×1.5	Flush Mounted	206-6146	72271127
20	PNP NO	Brass Nickel Plated	M12	M18×1	Flush Mounted	206-6164	72251026

Inductive Sensor Continued

Image for illustrative purposes only

DETECTION RANGE (MM)	OUTPUT TYPE	HOUSING MATERIAL	TERMINAL TYPE	THREAD SIZE	MOUNTING TYPE	MPN	ALLIED PART NO
20	PNP NO	Plastic PA 66	M12	-	Flush Mounted	206-6178	72271138
20	PNP NO	Plastic PA 66	Terminal	-	Non-Flush Mounted	206-6179	72271139
20	PNP NO/NC	Plastic PA 66	M12	-	Flush Mounted	206-6176	72271136
20	PNP NO/NC	Plastic PA 66	Terminal	-	Flush Mounted	206-6177	72271137
38	PNP NO	Brass Nickel Plated	2m Cable	M30×1.5	Non-Flush Mounted	206-6167	72251029
38	PNP NO	Brass Nickel Plated	M12	M30×1.5	Flush Mounted	206-6166	72251028
40	PNP NO	Plastic PA 66	M12	-	Non-Flush Mounted	206-6182	72271142
40	PNP NO	Plastic PA 66	Terminal	-	Non-Flush Mounted	206-6183	72271143
40	PNP NO/NC	Plastic PA 66	M12	-	Non-Flush Mounted	206-6180	72271140
40	PNP NO/NC	Plastic PA 66	Terminal	-	Non-Flush Mounted	206-6181	72271141

CAPACITIVE PROXIMITY SENSORS

Capacitive proximity sensors feature a pair of parallel plates, similar to a standard capacitor. They work when an object produces changes in capacitance, triggering the sensor. Capacitive sensors are designed for use with non-ferrous materials and are ideal for close-range applications such as level detection and monitoring.

Capacitive sensors can be affected by their environment and possible interaction with other sensors. This could include anything from the ambient temperature to other objects in the vicinity. As a result of this, precautions should be taken when installing these sensors to avoid interference from other objects or sensors.

WHERE

Where would it be used?

Applications including flow control for detection of liquids, grains and powders. Common applications include the food and beverage industry, robotics, machine tools, packaging and materials handling.

WHY

Why would you use this product?

Capacitive proximity sensors can detect both metal and non-metal materials, especially suitable for detecting materials such as plastics, tank liquid level detection, hopper powders and particles. Ideal for sight glass monitoring.

WHO

Who would use it?

- Test Engineer
- Research & Development
- Design Engineer
- Electrical Engineer
- Maintenance Engineer
- Mechanics
- Laboratories

Flush Mount

Image for illustrative purposes only

THREAD SIZE	DETECTION RANGE (MM)	TERMINAL TYPE	OUTPUT TYPE	IP RATING	MOUNTING TYPE	MPN	ALLIED PART NO
M12×1	2	2m Cable	NPN-NO	IP67	Flush Mount	184-5578	71877133
M12×1	2	2m Cable	NPN-NO	IP67	Flush Mount	184-5582	71877137
M12×1	2	2m Cable	PNP-NO	IP67	Flush Mount	184-5584	71877139
M12×1	2	M12	NPN-NO	IP67	Flush Mount	184-5579	71877134
M12×1	2	M12	NPN-NO	IP67	Flush Mount	184-5583	71877138
M12×1	2	M12	PNP-NO	IP67	Flush Mount	184-5585	71877140
-	5	2m Cable	NPN-NO	IP67	Flush Mount	184-5569	71877125
-	5	2m Cable	PNP-NO	IP67	Flush Mount	184-5570	71877126
M18×1	5	2m Cable	NPN-NO/NC	IP67	Flush Mount	184-5593	71877147
M18×1	5	2m Cable	NPN-NO/NC	IP67	Flush Mount	184-5604	71877156
M18×1	5	2m Cable	PNP-NO/NC	IP67	Flush Mount	184-5596	71877149
M18×1	5	2m Cable	PNP-NO/NC	IP67	Flush Mount	184-5606	71877158
M18×1	5	2m Cable	NO	IP67	Flush Mount	184-5591	71877145
M18×1	5	M12	NPN-NO/NC	IP67	Flush Mount	184-5594	71877148
M18×1	5	M12	NPN-NO/NC	IP67	Flush Mount	184-5605	71877157
M18×1	5	M12	PNP-NO/NC	IP67	Flush Mount	184-5607	71877159
M18×1	5	M12	NO	IP67	Flush Mount	184-5592	71877146
M18×1	5	M12	NO	IP67	Flush Mount	184-5603	71877155
M30×1.5	10	2m Cable	NPN-NO/NC	IP67	Flush Mount	184-5615	71877167
M30×1.5	10	2m Cable	PNP-NO/NC	IP67	Flush Mount	184-5617	71877169
M30×1.5	10	2m Cable	PNP-NO/NC	IP67	Flush Mount	184-5632	71877181
M30×1.5	10	2m Cable	NO	IP67	Flush Mount	184-5613	71877165

Flush Mount Continued

Image for illustrative purposes only

THREAD SIZE	DETECTION RANGE (MM)	TERMINAL TYPE	OUTPUT TYPE	IP RATING	MOUNTING TYPE	MPN	ALLIED PART NO
M30×1.5	10	2m Cable	NO	IP67	Flush Mount	184-5627	71877177
M30×1.5	10	2m Cable	NO	IP67	Flush Mount	184-5634	71877183
M30×1.5	10	M12	NPN-NO/NC	IP67	Flush Mount	184-5616	71877168
M30×1.5	10	M12	NPN-NO/NC	IP67	Flush Mount	184-5631	71877180
M30×1.5	10	M12	PNP-NO	IP67	Flush Mount	184-5633	71877182
M30×1.5	10	M12	PNP-NO/NC	IP67	Flush Mount	184-5619	71877170
M30×1.5	10	M12	NO	IP67	Flush Mount	184-5614	71877166
M30×1.5	10	M12	NO	IP67	Flush Mount	184-5628	71877178
M30×1.5	10	M12	NO	IP67	Flush Mount	184-5635	71877184
M30×1.5	15	2m Cable	NPN-NO/NC	IP67	Flush Mount	184-5629	71877179

Non-flush Mount

Image for illustrative purposes only

THREAD SIZE	DETECTION RANGE (MM)	TERMINAL TYPE	OUTPUT TYPE	IP RATING	MOUNTING TYPE	MPN	ALLIED PART NO
-	8	M12	NPN-NO	IP67	Non-flush Mount	184-5571	71877127
-	10	2m Cable	NPN-NO	IP67	Non-flush Mount	184-5577	71877132
M12×1	4	2m Cable	NPN-NO	IP67	Non-flush Mount	184-5580	71877135
M12×1	4	2m Cable	NPN-NO	IP67	Non-flush Mount	184-5586	71877141
M12×1	4	2m Cable	PNP-NO	IP67	Non-flush Mount	184-5588	71877143
M12×1	4	M12	NPN-NO	IP67	Non-flush Mount	184-5581	71877136
M12×1	4	M12	NPN-NO	IP67	Non-flush Mount	184-5587	71877142
M12×1	4	M12	PNP-NO	IP67	Non-flush Mount	184-5590	71877144
M18×1	8	2m Cable	NO	IP67	Non-flush Mount	184-5597	71877150
M18×1	8	2m Cable	NPN-NO/NC	IP67	Non-flush Mount	184-5599	71877152
M18×1	8	2m Cable	NPN-NO/NC	IP67	Non-flush Mount	184-5609	71877161
M18×1	8	2m Cable	PNP-NO/NC	IP67	Non-flush Mount	184-5611	71877163
M18×1	8	M12	NO	IP67	Non-flush Mount	184-5598	71877151
M18×1	8	M12	NO	IP67	Non-flush Mount	184-5608	71877160
M18×1	8	M12	NPN-NO/NC	IP67	Non-flush Mount	184-5600	71877153
M18×1	8	M12	NPN-NO/NC	IP67	Non-flush Mount	184-5610	71877162
M18×1	8	M12	PNP-NO/NC	IP67	Non-flush Mount	184-5601	71877154
M18×1	8	M12	PNP-NO/NC	IP67	Non-flush Mount	184-5612	71877164
M30×1.5	15	2m Cable	NO	IP67	Non-flush Mount	184-5620	71877171
M30×1.5	15	2m Cable	NO	IP67	Non-flush Mount	184-5636	71877185
M30×1.5	15	2m Cable	NPN-NO/NC	IP67	Non-flush Mount	184-5622	71877173
M30×1.5	15	2m Cable	NPN-NO/NC	IP67	Non-flush Mount	184-5638	71877187

Non-flush Mount Continued

Image for illustrative purposes only

THREAD SIZE	DETECTION RANGE (MM)	TERMINAL TYPE	OUTPUT TYPE	IP RATING	MOUNTING TYPE	MPN	ALLIED PART NO
M30×1.5	15	2m Cable	PNP-NO/NC	IP67	Non-flush Mount	184-5625	71877175
M30×1.5	15	2m Cable	PNP-NO/NC	IP67	Non-flush Mount	184-5640	71877189
M30×1.5	15	M12	NO	IP67	Non-flush Mount	184-5621	71877172
M30×1.5	15	M12	NO	IP67	Non-flush Mount	184-5637	71877186
M30×1.5	15	M12	NO	IP67	Non-flush Mount	184-5642	71877191
M30×1.5	15	M12	NPN-NO/NC	IP67	Non-flush Mount	184-5623	71877174
M30×1.5	15	M12	NPN-NO/NC	IP67	Non-flush Mount	184-5639	71877188
M30×1.5	15	M12	PNP-NO/NC	IP67	Non-flush Mount	184-5626	71877176
M30×1.5	15	M12	PNP-NO/NC	IP67	Non-flush Mount	184-5641	71877190

Non-flush Pipeline Mount

Image for illustrative purposes only

PIPE	OD / WALL THICKNESS	TERMINAL TYPE	OUTPUT TYPE	IP RATING	MOUNTING TYPE	MPN	ALLIED PART NO
Non Metal	12-26mm / <1.0mm	2m Cable	NPN-NO	IP67	Non-flush Mount	184-5575	71877130
Non Metal	12-26mm / <1.0mm	2m Cable	PNP-NO	IP67	Non-flush Mount	184-5576	71877131
Non Metal	8-11mm / ≤1mm	2m Cable	NPN-NO	IP67	Non-flush Mount	184-5572	71877128
Non Metal	8-11mm / ≤1mm	2m Cable	PNP-NO	IP67	Non-flush Mount	184-5574	71877129

FIBER OPTIC SENSORS

Fiber optic sensors are a type of photoelectric senor that has an optical fiber connected to a light source to allow for detection in tight spaces or where a small profile is beneficial. The optical fiber is a transparent fiber made of glass (silica) or plastic with a diameter slightly thicker than a human hair. This fiber transmits light between the two ends to produce an electrical signal.

WHERE

Where would it be used?

Fiber optic sensors are used in a number of different applications such as semiconductor, electronic equipment, packaging and other industries.

WHY

Why would you use this product?

Fiber optic sensors allow for detection in tight spaces or where a small profile is beneficial. The optical fiber is a transparent fiber made of glass (silica) or plastic with a diameter slightly thicker than a human hair, making it a perfect solution for areas where the direct mounting of sensors is not possible.

WHO

Who would use it?

- Test Engineer
- Research & Development
- Design Engineer
- Electrical Engineer
- Maintenance Engineer

Fiber Optic Sensors

Image for illustrative purposes only

FIBER OPTIC TYPE	OUTPUT TYPE	SUPPLY VOLTAGE	IP RATING	POWER CONSUMPTION	DETECTION RANGE	MPN	ALLIED PART NO
Plastic	NPN	24V DC	IP54	1.44W	with 896-7298 = 110 -290mm	204-0681	72250955
Plastic	PNP	24V DC	IP54	1.44W	with 896-7285 = 300 - 800mm	204-0682	72250956

Suitable Probes

FIBER OPTIC SENSORS

110mm

FIBER OPTIC SENSORS

500mm

Note: Fiber optic probes are not exchangeable across brands!

LOAD CELLS

Load cells, often called load cell transducers, are crucial components in most industrial weighing systems. They are available in many different configurations and standards, depending on the intended application and environment.

Among the various different types of load cells available, models and styles can be differentiated in two key ways:

1. By the specific method they use to detect weight (compression load cells, tension load cells and other measurement types).
2. By the type of output signal generated (hydraulic load cells, piezoelectric load cells and various other configurations).

WHERE

Where would it be used?

Electronic load cells are now broadly accepted as the modern standard in most of today's heavy industries, manufacturing plants, large-scale production floors and stringent quality control environments.

WHY

Why would you use this product?

Load cells are crucial components in most industrial weighing systems. The most basic definition of a load cell is that they measure weight - or, more accurately, directional force - usually via a combination of spring elements and strain gauges, converted into an electrical output.

WHO

Who would use it?

- Test Engineer
- Research & Development
- Design Engineer
- Electrical Engineer
- Maintenance Engineer
- Mechanics

Load Cell Sensors

Image for illustrative purposes only

FORCE MEASURED	MEASUREMENT RANGE MIN/MAX (KG)	OUTPUT TYPE	IP RATING	MAX VOLTAGE	MPN	ALLIED PART NO
Compression	0.3 - 3	PNP	IP67	15V	204-2767	72250960
Compression	5 - 20	PNP	IP66	10V	204-2772	72250964
Compression	5 - 500	PNP	IP68	15V	204-2765	72250958
Compression	10 - 100	PNP	IP67	15V	204-2770	72250962
Compression	50 - 1000	PNP	IP66	15V	204-2768	72250961
Compression	50 - 1000	PNP	IP68	10V	204-2764	72250957
Compression	60 - 1200	PNP	IP67	15V	204-2771	72250963
Compression	500 - 3000	PNP	IP68	15V	204-2766	72250959
Compression & Tension	1 - 500	PNP	IP66	10V	204-2773	72250965

Incremental Rotary Encoders

Image for illustrative purposes only

SHAFT Ø	MOUNTING TYPE	PULSES PER REVOLUTION	OUTPUT SIGNAL TYPE	SUPPLY VOLTAGE	DIMMENSIONS (W X H X D)	IP RATING	MPN	ALLIED PART NO
6	Hollow Shaft Flange	500	HTL	10 - 30V DC	40×42×75mm	IP65	206-1285	72266966
6	Round Flange	360	TTL	4.75 - 5.5V DC	40×64×50mm	IP65	206-1280	72266961
6	Synchro Flange	360	HTL Inverted	5 - 30V DC	58×55×58mm	IP65	206-1282	72266963
6	Synchro Flange	512	HTL	5 - 30V DC	30×30×42mm	IP40	206-1281	72266962
6	Synchro Flange	1024	HTL	5 - 30V DC	30×30×42mm	IP40	206-1279	72266960
8	Clamping Flange	360	HTL	10 - 30V DC	50×50×82mm	IP65	206-1296	72266976
8	Clamping Flange	1000	HTL	10 - 30V DC	50×50×82mm	IP65	206-1286	72266967
10	Clamping Flange	50	HTL Inverted	5 - 30V DC	58×89.2×72mm	IP65	206-1293	72266973
10	Clamping Flange	200	HTL Inverted	5 - 30V DC	58×89.2×72mm	IP65	206-1290	72266970
10	Clamping Flange	500	HTL Inverted	5 - 30V DC	58×89.2×72mm	IP65	206-1297	72266977
10	Clamping Flange	500	HTL Inverted	5 - 30V DC	58×89.2×72mm	IP65	206-1294	72266974
10	Clamping Flange	1000	HTL Inverted	5 - 30V DC	58×89.2×72mm	IP65	206-1288	72266968
10	Clamping Flange	1024	HTL Inverted	5 - 30V DC	58×89.2×72mm	IP65	206-1289	72266969
10	Clamping Flange	2500	HTL Inverted	5 - 30V DC	58×89.2×72mm	IP65	206-1291	72266971
10	Clamping Flange	3600	HTL Inverted	10 - 30V DC	58×89.2×72mm	IP65	206-1292	72266972
10	Clamping Flange	5000	HTL Inverted	10 - 30V DC	58×89.2×72mm	IP65	206-1295	72266975
12	Hollow Shaft Flange	1024	HTL Inverted	5 - 30V DC	58×84.5×46.5mm	IP65	206-1283	72266964
12	Hollow Shaft Flange	5000	HTL Inverted	10 - 30V DC	58×84.5×46.5mm	IP65	206-1284	72266965

Barcode Reader

Image for illustrative purposes only

TYPE	MPN	ALLIED PART NO
Barcode Reader	206-7501	72271155

WHERE

Where would it be used?

Can be widely used in many kinds of application environments, whether it is a two-dimensional or one-dimensional bar code. Some typical locations include express logistics, retail, electronic ecommerce, office automation, and retail.

WHY

Why would you use this product?

A barcode scanner is a two-dimensional image scanner with excellent quality. It adopts the third-generation image scanning technology to make scanning more sensitive and accurate. It can be used in many kinds of application environments.

Whether a one or two-dimensional code, this barcode reader can scan in all directions, and will work interchangeably with labels and screens without losing accuracy.

WHO

Who would use it?

- Distribution Centers
- Logistic Handlers
- Grocery Stores

Sensor Tester

Image for illustrative purposes only

ACCESSORY TYPE	APPLICATION	POWER SOURCE	STATUS INDICATION TYPE	MPN	ALLIED PART NO
Sensor Tester	Proximity Switch, Photoelectric Sensors	2 × 9V batteries	LED and Audio	839-9875	70657829

Panel Mount Sensor Cables

Image for illustrative purposes only

TYPE	GENDER	CONNECTION SIZE	NO OF CONTACTS	TERMINATION METHOD	MOUNTING TYPE	MPN	ALLIED PART NO
Circular Connector	Female	M12	4	Screw	Cable Mount	205-5976	72250991
Circular Connector	Female	M12	5	Screw	Cable Mount	205-5974	72250989
Circular Connector	Male	M12	4	Screw	Cable Mount	205-5991	72251005

Open End Sensor Cables

Image for illustrative purposes only

	CONNECTION A			CONNECTION B				
TYPE	BODY ORIENTATION	GENDER	CONNECTION SIZE	GENDER	CONNECTION SIZE	CABLE LENGTH	MPN	ALLIED PART NO
Connector	Angled	Female	M12	-	Open End	15m	205-5980	72250995
Connector	Angled	Female	M12	-	Open End	20m	205-5993	72251007
Connector	Straight	Female	M12	-	Open End	10m	205-5992	72251006
Connector	Straight	Male	M8	-	Open End	10m	205-5987	72251002

RS PRO BY ALLIED PRODUCT CATEGORIES

Tools & Hardware

- Chemicals & Adhesives
- Connector & Crimp Tooling
- Engineering Materials
- Hardware & Fasteners
- Hydraulics
- Tool Accessories
- Tools

Wire & Cable

- Cable
- Cable Assemblies
- Cable Management
- Labeling
- Wire

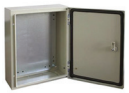
Connectors

- Audio, Video
- Automation
- Board Level Connectors (PCB)
- Circular
- Coaxial/RF
- Data/Ethernet/Telecom
- D-Sub
- IC Sockets, Plugs & Adapters
- Terminal Blocks & Strips
- Terminals, Lugs & Ferrules
- Test

Industrial Controls

- Contactors
- Controllers
- Counters
- Disconnect Switches
- Panel Meters
- Power Transmission
- Signal Conditioning & Converters
- Solenoids
- Timers

Enclosures, Racks & Cabinets



- Cabinet & Rack Parts/ Accessories
- Cabinets & Racks
- Electronic Enclosure Accessories
- Electronic Enclosures
- Pushbutton Enclosures
- Subrack/Card Cage
- Travel and Brief Cases

Circuit Breakers, Fuses & Protection

- Circuit Breaker Accessories
- Circuit Breakers
- Equipment Circuit Breakers
- Filters
- Fuse Accessories
- Fuse Kits
- Fuses
- GFI Protection
- Surge Protection

Electronic Components

- Capacitors
- Computer, Cards & Accessories
- Crystals, Oscillators & Resonators
- Discrete Semiconductors
- EMI/RFI Shielding/ Suppression
- Fiber Optic Products
- Inductors
- LEDs
- Passive Accessories & Kits
- Potentiometers
- Power Entry Modules
- Resistors
- RF Products
- Thermistors
- Varistors (MOV)

ESD & Prototyping

- 3D Printer Filament & Accessories
- ESD Products
- Facilities Cleaning & Maintenance
- Facility Security
- PCB
- Personal Protection Equipment (PPE)
- Production Aids
- Public Address & Audio Products
- Soldering
- Storage Products
- Tape Dispensers
- Tapes
- Workshop Equipment & Storage

Fans & Thermal Management

- Blowers
- Electric Heaters
- Fan Guards
- Fans
- Heatsinks
- HVAC
- Thermal Pads
- Ventilation Grills

Lighting & Indication

- Audibles/Buzzers
- Beacons
- Lamp Sockets
- Lamps/Light Bulbs
- Lenses
- Light Towers
- Lighting Ballasts
- Lighting Products
- Panel Mount Indicators

Motors & Motor Controls

- Gearmotors
- Motor Protection Switch
- Motor Starters
- Motors

Power Products

- AC-DC Power Supplies
- Batteries, Chargers & Accessories
- Converter (DC-DC Power Supplies)
- Transformers

Relays

- Accessories
- Monitoring
- Power
- Reed
- Relay Modules
- Signal
- Solid State
- Time Delay

Sensors

- Accessories
- Encoders
- Flow
- Liquid Level
- Load Cells
- Magnetic Pickups
- Photoelectric
- Pressure
- Proximity
- Strain Gauges
- Temperature
- Thermocouple & Probe Accessories
- Thermostats
- Vibration

Switches

- Accessories
- Basic Snap Action
- Foot
- Joystick
- Keylock
- Level
- Limit
- Magnetic and Reed
- Pushbutton
- Rocker
- Rotary
- Slide
- Toggle
- Touch

Test & Measurement

- Analyzers
- Benchtop Power Supplies
- Calibrators
- Datalogging & Acquisition
- Inspection Scopes
- Meters & Multimeters
- Oscilloscopes
- Probes & Accessories
- Signal Generators
- Testers
- Thermal Imagers
- Thermometers

OUR RANGE, YOUR CHOICE

WHO IS RS PRO BY ALLIED?

RS Pro is the private label brand of RS Components and Allied Electronics & Automation that gives you every part you need across all industries at the quality and price you expect. It's that simple.

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WHY RS PRO BY ALLIED?

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