

Hall Effect Sensors

AI-Tek has taken its years of experience of designing and manufacturing Hall Effect sensors for engine timing applications and has developed a line of durable products for industrial use.

With multiple standard variations we offer the widest range of standard catalog sensors to meet your various design needs. The design is flexible to easily meet all of your application requirements.

The Hall Effect sensor can sense each change in target movement, regardless of speed, from near zero to 15 kHz frequency range, generating a steady pulse train of frequency proportional to target speed. Typically, each time a gear tooth (or any ferrous discontinuity) passes in front of the sensor the output changes state. This type of sensor is known as a "P" type because it uses N-P-N transistor logic (as opposed to "N" type, which uses P-N-P transistor logic).

Key features to note are:

- Reverse voltage protection, to prevent damage if miswired
- Extended temperature range
- Wide range of supply voltage
- Two output options of Supply Tracking or TTL Compatible
- Rugged design meeting IEC 77 Standards (European Railroad Applications)

AI-Tek has (3) Series of Hall Effect Sensors: RH Series, DH Series and BH Series. Below is a quick reference chart of the features of each of the series.

PERFORMANCE	RH SERIES 1 Output Channel	DH SERIES 1 Output Channel	BH SERIES 2 Output Channels + Direction
Zero speed to 15kHz operation	X	X	X
Standard gear tooth sensing	X	X	X
Fine, 32 DP Capability		X	X
Single tooth / valley target		X	X
No installation alignment	X		
Extended airgap (0.100"+ for 12DP and coarser targets)		X	X
General noise immunity	X	X	X
EMI Hardened		X	X
High tolerance to target run-out		X	X
Self-calibrating		X	X
Direction Sensing			X
Lowest cost	X		

For applications that exceed 50 Ft (150 meters) go to page 42 for the DSDA, (Digital Signal Distance Amplifier).

It is the customer's responsibility to determine whether the product is proper for customer's use and application.

RH & DH Series

Active Sensor Selection Guide

Thread Size	Part Number	Supply Tracking or TTL	Termination	Thread Length (in)	Sensor Length (in)	Agency Approval	Page
3/4-20	RH1612-013	TTL	Cable	1.5	3.375		27
3/4-20	RH1622-013	ST	Cable	1.5	3.375		27
3/4-20	RH1612-014	TTL	Cable	2.75	4.625		27
3/4-20	RH1622-014	ST	Cable	2.75	4.625		27
3/4-20	DH1612-105	TTL	Connector	1.5	3.375	4.102	35
3/4-20	DH1622-105	ST	Connector	1.5	3.375	4.102	35
3/4-20	RH1612-005	TTL	Connector	1.5	3.375	4.012	28
3/4-20	RH1622-005	ST	Connector	1.5	3.375	4.012	28
3/4-20	DH1612-106	TTL	Connector	2.75	4.625	5.262	35
3/4-20	DH1622-106	ST	Connector	2.75	4.625	5.262	35
3/4-20	RH1612-006	TTL	Connector	2.75	4.625	5.262	28
3/4-20	RH1622-006	ST	Connector	2.75	4.625	5.262	28
3/4-20	RH1612-007	TTL	Connector	4	6.512		28
3/4-20	RH1622-007	ST	Connector	4	6.512		28
3/4-20	RH1612-009	TTL	Wires	1.5	3.375	1.5	28
3/4-20	RH1622-009	ST	Wires	1.5	3.375	1.5	28
3/4-20	RH1612-010	TTL	Wires	2.75	4.625	2.75	28
3/4-20	RH1622-010	ST	Wires	2.75	4.625	2.75	28
3/4-20	RH1612-025	TTL	Cable	1.375	4.75	X	29
3/4-20	RH1612-026	TTL	Cable	1.5	3.375	X	29
3/4-20	RH1622-026	ST	Cable	1.5	3.375	X	29
3/4-20	RH1612-027	TTL	Cable	2.75	4.625	X	29
3/4-20	RH1622-027	ST	Cable	2.75	4.625	X	29

RH & DH Series

Active Sensor Selection Guide

Thread Size	Part Number	Supply Tracking or TTL	Termination	Thread Length (in)	Sensor Length (in)	Agency Approval	Page
5/8-18	DH1512-113	TTL	Cable	1.5	3.375		34
5/8-18	DH1522-113	ST	Cable	1.5	3.375		34
5/8-18	RH1512-013	TTL	Cable	1.5	3.375		27
5/8-18	RH1522-013	ST	Cable	1.5	3.375		27
5/8-18	DH1512-114	TTL	Cable	2.75	4.625		34
5/8-18	DH1522-114	ST	Cable	2.75	4.625		34
5/8-18	RH1512-014	TTL	Cable	2.75	4.625		27
5/8-18	RH1522-014	ST	Cable	2.75	4.625		27
5/8-18	DH1512-105	TTL	Connector	1.5	4.012		35
5/8-18	DH1522-105	ST	Connector	1.5	4.012		35
5/8-18	RH1512-005	TTL	Connector	1.5	4.012		28
5/8-18	RH1522-005	ST	Connector	1.5	4.012		28
5/8-18	DH1512-106	TTL	Connector	2.75	5.262		35
5/8-18	DH1522-106	ST	Connector	2.75	5.262		35
5/8-18	RH1512-006	TTL	Connector	2.75	5.262		28
5/8-18	RH1522-006	ST	Connector	2.75	5.262		28
5/8-18	DH1512-107	TTL	Connector	4	6.512		35
5/8-18	DH1522-107	ST	Connector	4	6.512		35
5/8-18	RH1512-007	TTL	Connector	4	6.512		28
5/8-18	RH1522-007	ST	Connector	4	6.512		28
5/8-18	DH1512-109	TTL	Cable	1.5	1.5		35
5/8-18	DH1522-109	ST	Cable	1.5	1.5		35
5/8-18	RH1512-009	TTL	Cable	1.5	1.5		28
5/8-18	RH1522-009	ST	Cable	1.5	1.5		28
5/8-18	DH1512-110	TTL	Cable	2.75	2.75		35
5/8-18	DH1522-110	ST	Cable	2.75	2.75		35
5/8-18	RH1512-010	TTL	Cable	2.75	2.75		28
5/8-18	RH1522-010	ST	Cable	2.75	2.75		28
5/8-18	RH1512-026	TTL	Cable	1.5	3.375	X	29
5/8-18	RH1522-026	ST	Cable	1.5	3.375	X	29
5/8-18	RH1512-027	TTL	Cable	2.75	4.625	X	29
5/8-18	RH1522-027	ST	Cable	2.75	4.625	X	29
5/8-18	DH1512-210	TTL	Cable	2.75	2.75		36
5/8-18	DH1522-210	ST*	Cable	2.75	2.75		36
3/8-32	RH1320-001	ST	Wires	1.63	1.63		31
3/8-32	RH1320-003	ST	Cable	1.63	1.63		31
3/8-24	RH1320-009	ST	Wires	1.63	1.63		31
3/8-24	RH1320-010	ST	Cable	1.63	1.63		31
3/8-24	RH1320-012	ST	Cable	3	3		31
3/8 Dia	RH1320-005	ST	Wires	—	—		31
3/8 Dia	RH1320-006	ST	Cable	—	—		31

*NOTE: RTD Temperature Sensing Feature

BH SERIES

Active Sensor (Bi-Dir.) Selection Guide

Thread Size	Part Number	Supply Tracking or TTL	Termination	Thread Length (in)	Sensor Length (in)	Page
3/4-20	BH1612-001	TTL	Connector	1.5	3.375	40
3/4-20	BH1622-001	ST	Connector	1.5	3.375	40
3/4-20	BH1612-002	TTL	Connector	2.75	4.625	40
3/4-20	BH1622-002	ST	Connector	2.75	4.625	40
3/4-20	BH1612-013	TTL	Cable	1.5	3.375	40
3/4-20	BH1622-013	ST	Cable	1.5	3.375	40
3/4-20	BH1612-014	TTL	Cable	2.75	4.625	40
3/4-20	BH1622-014	ST	Cable	2.75	4.625	40
3/4-20	BH1612-005	TTL	Connector	1.5	3.375	41
3/4-20	BH1622-005	ST	Connector	1.5	3.375	41
3/4-20	BH1612-006	TTL	Connector	2.75	4.625	41
3/4-20	BH1622-006	ST	Connector	2.75	4.625	41
3/4-20	BH1612-009	TTL	Cable	4	4	41
3/4-20	BH1622-009	ST	Cable	4	4	41
3/4-20	BH1612-010	TTL	Cable	6	6	41
3/4-20	BH1622-010	ST	Cable	6	6	41
5/8-18	BH1512-001	TTL	Connector	1.5	3.375	40
5/8-18	BH1522-001	ST	Connector	1.5	3.375	40
5/8-18	BH1512-002	TTL	Connector	2.75	4.625	40
5/8-18	BH1522-002	ST	Connector	2.75	4.625	40
5/8-18	BH1512-013	TTL	Cable	1.5	3.375	40
5/8-18	BH1522-013	ST	Cable	1.5	3.375	40
5/8-18	BH1512-014	TTL	Cable	2.75	4.625	40
5/8-18	BH1522-014	ST	Cable	2.75	4.625	40
5/8-18	BH1512-005	TTL	Connector	1.5	3.375	41
5/8-18	BH1522-005	ST	Connector	1.5	3.375	41
5/8-18	BH1512-006	TTL	Connector	2.75	4.625	41
5/8-18	BH1522-006	ST	Connector	2.75	4.625	41
5/8-18	BH1512-009	TTL	Cable	4	4	41
5/8-18	BH1522-009	ST	Cable	4	4	41
5/8-18	BH1512-010	TTL	Cable	6	6	41
5/8-18	BH1522-010	ST	Cable	6	6	41