

Feature	TL072CP	LF353	Notes / Explanation
Input Type	JFET	JFET	High input impedance (~10 ¹² Ω), draws almost no current from source
Input Bias Current	65 pA	30 pA	LF353 draws slightly less current → better for ultra-sensitive sources
Input Offset Voltage (typical)	3 mV	5 mV	TL072CP slightly better for DC accuracy
Voltage Noise Density	18 nV/√Hz	36 nV/√Hz	TL072CP is quieter → better for low-level signals
Slew Rate	13 V/μs	13 V/μs	Both can handle fast-changing signals well
Gain-Bandwidth Product	3 MHz	3 MHz	Maximum frequency for amplification; same for both
Supply Voltage Range	±3V to ±18V	±3V to ±36V	LF353 can tolerate higher voltages
Quiescent Current	1.4 mA	2.8 mA	TL072CP uses less power → better for battery circuits
Output Range	Not rail-to-rail	Not rail-to-rail	Both can't reach full supply rails
Best Use	Low-noise, precise analog circuits, sensors, audio	High-voltage circuits, low-input-current applications	TL072CP = precision, LF353 = tolerance

Feature	SS495A	SS441R	SS443A
Output	Analog	Digital (Open Collector)	Digital (Open Collector)
Sensitivity	High, proportional	Threshold-based	Threshold-based
Supply Voltage	4.5V – 10.5V	3.8V – 30V	3.8V – 30V
Temperature	-40°C to +150°C	-40°C to +150°C	-40°C to +150°C
Use Case	Measure field strength	Detect presence of magnet	Detect presence of magnet

Sensor	Sensitivity	Operating Range	Notes
SS495A	3.125 mV/G	±670 G	Linear output; ideal for precise magnetic field measurements.
SS441R	1.3 mV/G	35–135 G	Digital output; best for detecting the presence of a magnetic field.
SS443A	1.3 mV/G	35–135 G	Digital output; similar to SS441R with slightly different characteristics.

Sensor	Type	Output	Gauss Range	Sensitivity (mV/G)	Arduino Observations / Notes
SS495A	Analog	Voltage proportional to field	±670 G	3.125 mV/G	Small voltage changes observed, smooth analog signal. Needs op-amp (TL072CP) for amplification
SS441R	Digital (unipolar)	ON/OFF (open collector)	35–135 G	~1.3 mV/G	Triggered by relatively weak magnets. Output switches fully HIGH or LOW. Good for simple detection like
SS443A	Digital (unipolar)	ON/OFF (open collector)	35–135 G	~1.3 mV/G	Very similar to SS441R. Slightly different sensitivity threshold. Works reliably in Arduino digital

1) SS495A (Analog):

Gives continuous voltage readings proportional to magnetic field.
Ideal for graphs, speed calculations, or measuring magnetic field strength.

2) SS441R / SS443A (Digital):

Give discrete ON/OFF outputs.
Good for simple detection events, like proximity or rotation counting.

3)Arduino Setup

Analog Sensors (SS495A):

Use analogRead() to get voltage proportional to Gauss.

Digital Sensors (SS441R / SS443A):

Use digitalRead() to detect HIGH/LOW depending on magnet proximity.

4)Gauss Range Notes

SS495A:

Can handle strong magnets without saturating.
Output is proportional across a wide range (±670 G).

SS441R / SS443A:

Triggered by moderate magnetic fields (35–135 G).
Very strong magnets don't increase output, since it's a digital ON/OFF signal.