Calculating Sensing Aperture Size

It is very important to know if a wire will fit through a current sensing aperture before the project is in full swing. Below is a list of wire sizes, US standard and metric, and the outside diameter of one wire along with the outside diameter of a bundle of several of the same wires.

Wire Size		Current Rating Amps (75°C)	Outside Diameter (inches)		Wire Bundle Dimensions (inches)					
AWG	MM^2		THHN	THW	OD 3 Wires	OD 4 Wires	OD 6 Wires	OD 8 Wires	OD 9 Wires	OD 12 Wires
12	4	25	0.13		0.28	0.31	0.43	0.48	0.60	0.67
10	6	35	0.16		0.34	0.39	0.53	0.60	0.74	0.83
8	10	50	0.22		0.47	0.53	0.73	0.82	1.02	1.14
6	16	65	0.25	0.30	0.65	0.72	0.99	1.12	1.39	1.55
4	25	85	0.32	0.35	0.75	0.84	1.16	1.31	1.62	1.81
3	30	100	0.35	0.38	0.82	0.92	1.26	1.42	1.76	1.97
2	35	115	0.38	0.41	0.88	0.99	1.36	1.53	1.90	2.12
1	50	130	0.45	0.49	1.05	1.18	1.62	1.83	2.27	2.54
0	60	150	0.49	0.53	1.14	1.28	1.75	1.98	2.45	2.75
00	70	175	0.53	0.58	1.25	1.40	1.92	2.16	2.68	3.01
000	95	200	0.58	0.63	1.35	1.52	2.09	2.35	2.91	3.26
0000	100	230	0.64	0.69	1.48	1.66	2.28	2.57	3.19	3.58
250MCM	125	255	0.71	0.77	1.66	1.86	2.55	2.87	3.56	3.99
300MCM	150	285	0.77	0.82	1.76	1.98	2.71	3.06	3.79	4.25
350MCM	185	310	0.82	0.87	1.87	2.10	2.88	3.25	4.02	4.51
500MCM	240	380	0.95	1.00	2.15	2.41	3.31	3.73	4.62	5.18

Notes:

OD is in inches, based on Southwire's published charts.

OD for multiple conductors is based on the largest 600 volt insulation type, all conductors the same size.

These are the absolute minimums, so confirmation that the conductors will fit is very important!

If the wire size you are planning to use is not shown, use the following equations:

3 wires: OD of one wire, multiplied by 2.15

4 wires: OD of one wire, multiplied by 2.41

6 wires: OD of one wire, multiplied by 3.31

8 wires: OD of one wire, multiplied by 3.73