SURFACE VEHICLE STANDARD

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Electrical Terminals - Pin and Receptacle Type

RATIONALE

This technical report is being stabilized because it covers technology, products, or processes which are mature and not likely to change in the foreseeable future.

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1. SCOPE

This SAE Standard covers general requirements and terminal interface dimensions of various sizes of pin and receptacle type terminals.

1.1 General Requirements

The pin and receptacle type terminals listed in this SAE Standard may be used for terminating wire ends, or for terminating circuits on devices other than wire. Performance requirements for low tension wire terminals are specified in SAE J163.

Terminals shall be free from burrs, corrosion, or any foreign matter, and shall be of a temper that will permit attachment to wires or circuits on devices without fracturing or cracking.

Terminals may be applied to wire by crimping, welding, swaging, soldering, or any combination thereof at the conductor grip. Insulation grips shall be used on all terminals assembled to 2 mm^2 (14 ga) and smaller insulated wire except where usage provides other means of relieving strain.

The type, thickness and finish of the metal used in fabricating these terminals may vary according to the end product use. The dimensions shown in Tables 1 and 2/Figures 1 and 2 are included to assure proper fits between manufacturing sources.

Terminal sizes other than those listed are permissible, providing they meet the general requirements of this standard and the performance requirements of SAE J163.

Pin terminals fabricated from rod or bar stock must provide suitable stepped internal diameters to fit the wire conductors and insulation consistent with the method by which they are attached.

Insertion and removal forces are also variables that can be adjusted to fit the end use. It is recommended, however, that single connections with indentures should not exceed 67 N (15 lb) and multiple connections without indentures should not exceed 31 N (7 lb) per connection.

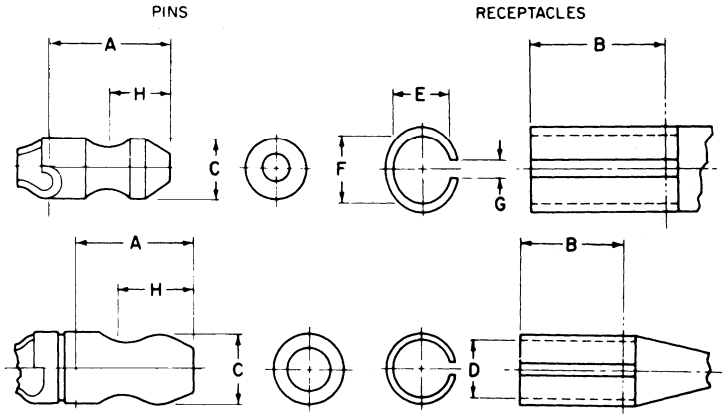

FIGURE 1—TYPE I PIN TERMINALS

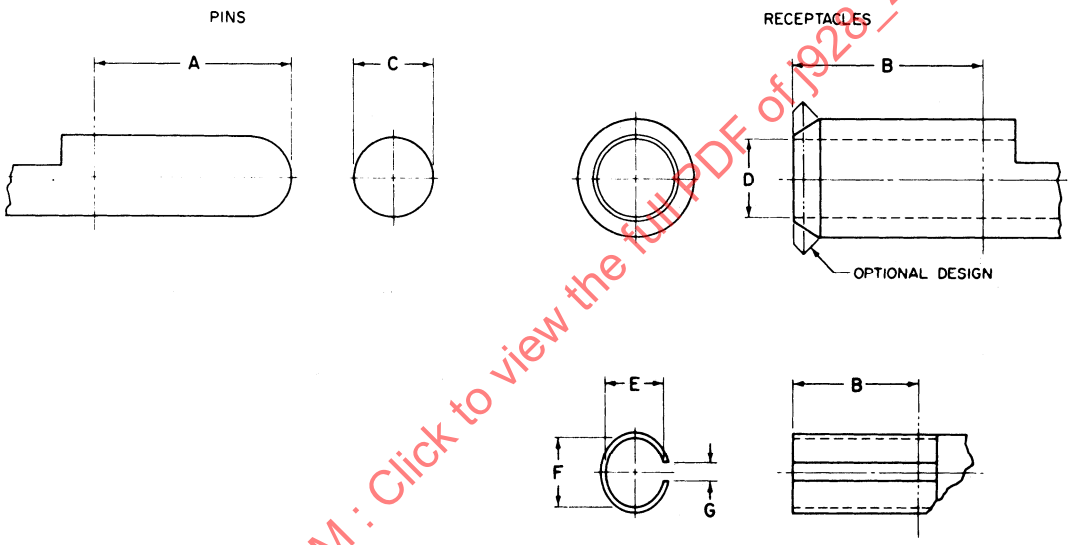

FIGURE 2—TYPE II PIN TERMINALS

TABLE 1 - TYPE I PIN TERMINALS

Nominal Dia mm	Nominal Dia in	SAE Wire Size Range	A Min[1] mm	A Min[1] in	B Min[1] mm	B Min[1] in	C mm	C in	D Nominal mm	D Nominal in	E Nominal mm	E Nominal in	F Nominal mm	F Nominal in	G Nominal mm	G Nominal in	H mm	H in
3.96	0.156	0.35–3.0 mm^2 (22–12)	8.7	0.34	8.7	0.34	4.04–3.94	0.159–0.155	3.81	0.150	3.73	0.147	4.60	0.181	0.86	0.034	5.56	0.219
4.57	0.180	0.35–5.0 mm^2 (22–10)	10.2	0.40	10.2	0.40	4.62–4.52	0.182–0.178	4.42	0.174	—	—	—	—	—	—	4.83	0.190

1. Minimum insertion length.
NOTE: Detent Female - When a female detent is required, the detent of the receptacle must match the H dimension of the pin.

TABLE 2 - TYPE II PIN TERMINALS

Nominal dia mm	Nominal Dia in	SAE Wire Size Range	A Min[1] mm	A Min[1] in	B Min[1] mm	B Min[1] in	C mm	C in	D Nominal mm	D Nominal in	E Nominal mm	E Nominal in	F Nominal mm	F Nominal in	G Nominal mm	G Nominal in
2.18	0.086	0.35–2.0 mm^2 (22–14)	4.4	0.17	4.4	0.17	2.18–2.11	0.086–0.083	2.03	0.080	—	—	—	—	—	—
2.36	0.093	0.35–2.0 mm^2 (22–14)	5.4	0.21	5.4	0.21	2.36–2.31	0.093–0.091	2.18	0.086	2.18	0.086	3.40	0.134	0.56	0.022
3.96	0.156	0.35–3.0 mm^2 (22–12)	5.1	0.20	5.1	0.20	4.04–3.91	0.159–0.154	3.86	0.152	—	—	—	—	—	—

1. Minimum insertion length.