

Safety Limit Switch D4N

CSM_D4N_DS_E_5.1

Upgraded Safety Limit Switches Based on the Popular D4D, Providing a Full Lineup Conforming to International Standards

- Lineup includes three contact models with 2NC/1NO and 3NC contact forms in addition to the previous contact forms 1NC/1NO, and 2NC. Models with MBB contacts are also available.
- M12-connector models are available, saving on labor and simplifying replacement.
- Standardized gold-clad contacts provide high contact reliability. Can be used with both standard loads and microloads.
- Conforms to EN115, EN81-1, and EN81-2 (slow-action models only).
- Lineup includes both slow-action and snap-action models with Zb contacts.
- Certified standards: UL, EN (TÜV), and CCC

Note: Contact your sales representative for details on models with safety standard certification.



⚠ Be sure to read the "Safety Precautions" on page 18 and the "Precautions for All Safety Limit Switches".

Model Number Structure

Model Number Legend

D4N-□□□
1 2 3

1. Conduit size

- 1: Pg13.5 (1-conduit)
- 2: G1/2 (1-conduit)
- 3: 1/2-14NPT (1-conduit)
- 4: M20 (1-conduit)
- 5: Pg13.5 (2-conduit)
- 6: G1/2 (2-conduit)
- 7: 1/2-14NPT (2-conduit)
- 8: M20 (2-conduit)
- 9: M12 connector (1-conduit)

2. Built-in Switch

- 1: 1NC/1NO (snap-action)
- 2: 2NC (snap-action)
- A: 1NC/1NO (slow-action)
- B: 2NC (slow-action)
- C: 2NC/1NO (slow-action)
- D: 3NC (slow-action)
- E: 1NC/1NO (MBB contact) (slow-action)
- F: 2NC/1NO (MBB contact) (slow-action)

3. Head and Actuator

- 20: Roller lever (resin lever, resin roller)
- 22: Roller lever (metal lever, resin roller)
- 25: Roller lever (metal lever, metal roller)
- 26: Roller lever (metal lever, bearing roller)
- 2G: Adjustable roller lever, form lock (metal lever, resin roller)
- 2H: Adjustable roller lever, form lock (metal lever, rubber roller)
- 31: Top Plunger
- 32: Top Roller Plunger
- 62: One-way roller arm lever (horizontal)
- 72: One-way roller arm lever (vertical)
- 80: Cat whisker
- 87: Plastic rod
- RE: Fork lever lock (right operation)
- LE: Fork lever lock (left operation)

Ordering Information

List of Models

Consult with your OMRON representative when ordering any models that are not listed in this table.

Switches with Two Contacts (with Direct Opening Mechanism)

Actuator	Conduit size	Built-in switch mechanism							
		1NC/1NO (Snap-action)		2NC (Snap-action)		1NC/1NO (Slow-action)		2NC (Slow-action)	
		Model	Direct opening	Model	Direct opening	Model	Direct opening	Model	Direct opening
Roller lever (resin lever, resin roller)	1-conduit	Pg13.5	D4N-1120	D4N-1220	D4N-1A20	D4N-2220	D4N-2A20	D4N-3220	D4N-3A20
		G1/2	D4N-2120			D4N-4220		D4N-5220	
		1/2-14NPT	D4N-3120			D4N-6220		D4N-7220	
		M20	D4N-4120			D4N-8220		D4N-9220	
		M12 connector	D4N-9120			D4N-9220		D4N-9820	
	2-conduit	Pg13.5	D4N-5120	D4N-5220	D4N-5A20	D4N-6120	D4N-6A20	D4N-8120	D4N-8A20
		G1/2	D4N-6120			D4N-8220		D4N-9120	
		1/2-14NPT	D4N-3120			D4N-9220		D4N-9120	
		M20	D4N-4122			D4N-9222		D4N-9122	
		M12 connector	D4N-9122			D4N-9222		D4N-9122	
Roller lever (metal lever, resin roller)	1-conduit	Pg13.5	D4N-1122	D4N-1222	D4N-1A22	D4N-2222	D4N-2A22	D4N-3222	D4N-3A22
		G1/2	D4N-2122			D4N-4222		D4N-5220	
		1/2-14NPT	D4N-3122			D4N-6222		D4N-7220	
		M20	D4N-4122			D4N-8222		D4N-9220	
		M12 connector	D4N-9122			D4N-9222		D4N-9122	
	2-conduit	Pg13.5	D4N-5122	D4N-5222	D4N-5A22	D4N-6122	D4N-6A22	D4N-8122	D4N-8A22
		G1/2	D4N-6122			D4N-8222		D4N-9122	
		1/2-14NPT	D4N-3122			D4N-9222		D4N-9122	
		M20	D4N-4122			D4N-9222		D4N-9122	
		M12 connector	D4N-9122			D4N-9222		D4N-9122	
Roller lever (metal lever, metal roller)	1-conduit	Pg13.5	D4N-1125	D4N-1225	D4N-1A25	D4N-2225	D4N-2A25	D4N-3225	D4N-3A25
		G1/2	D4N-2125			D4N-4225		D4N-5225	
		1/2-14NPT	D4N-3125			D4N-6225		D4N-7225	
		M20	D4N-4125			D4N-8225		D4N-9225	
		M12 connector	D4N-9125			D4N-9225		D4N-9125	
	2-conduit	Pg13.5	D4N-5122	D4N-5222	D4N-5A22	D4N-6122	D4N-6A22	D4N-8122	D4N-8A22
		G1/2	D4N-6122			D4N-8222		D4N-9122	
		1/2-14NPT	D4N-3122			D4N-9222		D4N-9122	
		M20	D4N-4122			D4N-9222		D4N-9122	
		M12 connector	D4N-9122			D4N-9222		D4N-9122	
Roller lever (metal lever, bearing roller)	1-conduit	Pg13.5	D4N-1126	D4N-1226	D4N-1A26	D4N-2226	D4N-2A26	D4N-3226	D4N-3A26
		G1/2	D4N-2126			D4N-4226		D4N-5226	
		1/2-14NPT	D4N-3126			D4N-6226		D4N-7226	
		M20	D4N-4126			D4N-8226		D4N-9226	
		M12 connector	D4N-9126			D4N-9226		D4N-9126	
	2-conduit	Pg13.5	D4N-5131	D4N-5231	D4N-5A31	D4N-6131	D4N-6A31	D4N-8131	D4N-8A31
		G1/2	D4N-6131			D4N-8131		D4N-9131	
		1/2-14NPT	D4N-3131			D4N-9131		D4N-9131	
		M20	D4N-4131			D4N-9131		D4N-9131	
		M12 connector	D4N-9131			D4N-9131		D4N-9131	
Plunger	1-conduit	Pg13.5	D4N-1131	D4N-1231	D4N-1A31	D4N-2231	D4N-2A31	D4N-3231	D4N-3A31
		G1/2	D4N-2131			D4N-4231		D4N-5231	
		1/2-14NPT	D4N-3131			D4N-6231		D4N-7231	
		M20	D4N-4131			D4N-8231		D4N-9231	
		M12 connector	D4N-9131			D4N-9231		D4N-9131	
	2-conduit	Pg13.5	D4N-5131	D4N-5231	D4N-5A31	D4N-6131	D4N-6A31	D4N-8131	D4N-8A31
		G1/2	D4N-6131			D4N-8131		D4N-9131	
		1/2-14NPT	D4N-3131			D4N-9131		D4N-9131	
		M20	D4N-4131			D4N-9131		D4N-9131	
		M12 connector	D4N-9131			D4N-9131		D4N-9131	
Roller plunger	1-conduit	Pg13.5	D4N-1132	D4N-1232	D4N-1A32	D4N-2232	D4N-2A32	D4N-3232	D4N-3A32
		G1/2	D4N-2132			D4N-4232		D4N-5232	
		1/2-14NPT	D4N-3132			D4N-6232		D4N-7232	
		M20	D4N-4132			D4N-8232		D4N-9232	
		M12 connector	D4N-9132			D4N-9232		D4N-9132	
	2-conduit	Pg13.5	D4N-5132	D4N-5232	D4N-5A32	D4N-6132	D4N-6A32	D4N-8132	D4N-8A32
		G1/2	D4N-6132			D4N-8132		D4N-9132	
		1/2-14NPT	D4N-3132			D4N-9132		D4N-9132	
		M20	D4N-4132			D4N-9132		D4N-9132	
		M12 connector	D4N-9132			D4N-9132		D4N-9132	
One-way roller arm lever (horizontal)	1-conduit	Pg13.5	D4N-1162	D4N-1262	D4N-1A62	D4N-2262	D4N-2A62	D4N-3262	D4N-3A62
		G1/2	D4N-2162			D4N-4262		D4N-5262	
		1/2-14NPT	D4N-3162			D4N-6262		D4N-7262	
		M20	D4N-4162			D4N-8262		D4N-9262	
		M12 connector	D4N-9162			D4N-9262		D4N-9162	
	2-conduit	Pg13.5	D4N-5162	D4N-5262	D4N-5A62	D4N-6162	D4N-6A62	D4N-8162	D4N-8A62
		G1/2	D4N-6162			D4N-8162		D4N-9162	
		1/2-14NPT	D4N-3162			D4N-9162		D4N-9162	
		M20	D4N-4162			D4N-9162		D4N-9162	
		M12 connector	D4N-9162			D4N-9162		D4N-9162	
One-way roller arm lever (vertical)	1-conduit	Pg13.5	D4N-1172	D4N-1272	D4N-1A72	D4N-2272	D4N-2A72	D4N-3272	D4N-3A72
		G1/2	D4N-2172			D4N-4272		D4N-5272	
		1/2-14NPT	D4N-3172			D4N-6272		D4N-7272	
		M20	D4N-4172			D4N-8272		D4N-9272	
		M12 connector	D4N-9172			D4N-9272		D4N-9172	
	2-conduit	Pg13.5	D4N-5172	D4N-5272	D4N-5A72	D4N-6172	D4N-6A72	D4N-8172	D4N-8A72
		G1/2	D4N-6172			D4N-8172		D4N-9172	
		1/2-14NPT	D4N-3172			D4N-9172		D4N-9172	
		M20	D4N-4172			D4N-9172		D4N-9172	
		M12 connector	D4N-9172			D4N-9172		D4N-9172	
Adjustable roller lever, form lock (metal lever, resin roller)	1-conduit	Pg13.5	D4N-112G	D4N-122G	D4N-1A2G	D4N-222G	D4N-2A2G	D4N-322G	D4N-3A2G
		G1/2	D4N-212G			D4N-422G		D4N-522G	
		1/2-14NPT	D4N-312G			D4N-622G		D4N-722G	
		M20	D4N-412G			D4N-822G		D4N-922G	
		M12 connector	D4N-912G			D4N-922G		D4N-912G	
	2-conduit	G1/2	D4N-612G	D4N-622G	D4N-6A2G	D4N-812G	D4N-8A2G	D4N-912G	D4N-8B2G
		M20	D4N-812G			D4N-912G		D4N-912G	
		G1/2	D4N-612G			D4N-812G		D4N-912G	
		1/2-14NPT	D4N-312H	D4N-322H	D4N-3A2H	D4N-412H	D4N-4A2H	D4N-512H	D4N-5A2H
		M20	D4N-412H			D4N-612H		D4N-712H	
Adjustable roller lever, form lock (metal lever, rubber roller)	1-conduit								

Switches with Three Contacts and MBB Contacts (with Direct Opening Mechanism)

Actuator	Conduit size	Built-in switch mechanism							
		2NC/1NO (Slow-action)		3NC (Slow-action)		1NC/1NO MBB (Slow-action)		2NC/1NO MBB (Slow-action)	
		Model	Direct opening	Model	Direct opening	Model	Direct opening	Model	Direct opening
Roller lever (resin lever, resin roller)	1-conduit	Pg13.5	D4N-1C20	D4N-1D20 D4N-2D20 D4N-3D20 D4N-4D20 ---	D4N-1E20 D4N-2E20 D4N-3E20 D4N-4E20 D4N-9E20	D4N-1F20 D4N-2F20 D4N-3F20 D4N-4F20 ---	D4N-1F20 D4N-2F20 D4N-3F20 D4N-4F20 ---	D4N-1F20 D4N-2F20 D4N-3F20 D4N-4F20 ---	
		G1/2	D4N-2C20						
		1/2-14NPT	D4N-3C20						
		M20	D4N-4C20						
		M12 connector	---						
	2-conduit	Pg13.5	D4N-5C20	D4N-5D20 D4N-6D20 D4N-8D20	D4N-5E20 D4N-6E20 D4N-8E20	D4N-5F20 D4N-6F20 D4N-8F20	D4N-5F20 D4N-6F20 D4N-8F20	D4N-5F20 D4N-6F20 D4N-8F20	D4N-5F20 D4N-6F20 D4N-8F20
		G1/2	D4N-6C20						
		M20	D4N-8C20						
		Pg13.5	D4N-1C22	D4N-1D22 D4N-2D22 D4N-3D22 D4N-4D22 ---	D4N-1E22 D4N-2E22 D4N-3E22 D4N-4E22 D4N-9E22	D4N-1F22 D4N-2F22 D4N-3F22 D4N-4F22 ---	D4N-1F22 D4N-2F22 D4N-3F22 D4N-4F22 ---	D4N-1F22 D4N-2F22 D4N-3F22 D4N-4F22 ---	D4N-1F22 D4N-2F22 D4N-3F22 D4N-4F22 ---
		G1/2	D4N-2C22						
Roller lever (metal lever, resin roller)	1-conduit	1/2-14NPT	D4N-3C22						
		M20	D4N-4C22						
		M12 connector	---						
		Pg13.5	D4N-5C22	D4N-5D22 D4N-6D22 D4N-8D22	D4N-5E22 D4N-6E22 D4N-8E22	D4N-5F22 D4N-6F22 D4N-8F22	D4N-5F22 D4N-6F22 D4N-8F22	D4N-5F22 D4N-6F22 D4N-8F22	D4N-5F22 D4N-6F22 D4N-8F22
		G1/2	D4N-6C22						
	2-conduit	M20	D4N-8C22						
		Pg13.5	D4N-1C25	D4N-1D25 D4N-2D25 D4N-3D25 D4N-4D25 ---	D4N-1E25 D4N-2E25 D4N-3E25 D4N-4E25 D4N-9E25	D4N-1F25 D4N-2F25 D4N-3F25 D4N-4F25 ---	D4N-1F25 D4N-2F25 D4N-3F25 D4N-4F25 ---	D4N-1F25 D4N-2F25 D4N-3F25 D4N-4F25 ---	D4N-1F25 D4N-2F25 D4N-3F25 D4N-4F25 ---
		G1/2	D4N-2C25						
		1/2-14NPT	D4N-3C25						
		M20	D4N-4C25						
Roller lever (metal lever, bearing roller)	1-conduit	M12 connector	---						
		Pg13.5	D4N-1C26	D4N-1D26 D4N-2D26 D4N-3D26 D4N-4D26 ---	D4N-1E26 D4N-2E26 D4N-3E26 D4N-4E26 D4N-9E26	D4N-1F26 D4N-2F26 D4N-3F26 D4N-4F26 ---	D4N-1F26 D4N-2F26 D4N-3F26 D4N-4F26 ---	D4N-1F26 D4N-2F26 D4N-3F26 D4N-4F26 ---	D4N-1F26 D4N-2F26 D4N-3F26 D4N-4F26 ---
		G1/2	D4N-2C26						
		1/2-14NPT	D4N-3C26						
		M20	D4N-4C26						
	2-conduit	M12 connector	---						
		Pg13.5	D4N-5C31	D4N-5D31 D4N-6D31 D4N-8D31	D4N-5E31 D4N-6E31 D4N-8E31	D4N-5F31 D4N-6F31 D4N-8F31	D4N-5F31 D4N-6F31 D4N-8F31	D4N-5F31 D4N-6F31 D4N-8F31	D4N-5F31 D4N-6F31 D4N-8F31
		G1/2	D4N-6C31						
		M20	D4N-8C31						
		Pg13.5	D4N-1C31						
Plunger	1-conduit	G1/2	D4N-2C31	D4N-1D31 D4N-2D31 D4N-3D31 D4N-4D31 ---	D4N-1E31 D4N-2E31 D4N-3E31 D4N-4E31 D4N-9E31	D4N-1F31 D4N-2F31 D4N-3F31 D4N-4F31 ---	D4N-1F31 D4N-2F31 D4N-3F31 D4N-4F31 ---	D4N-1F31 D4N-2F31 D4N-3F31 D4N-4F31 ---	D4N-1F31 D4N-2F31 D4N-3F31 D4N-4F31 ---
		1/2-14NPT	D4N-3C31						
		M20	D4N-4C31						
		M12 connector	---						
		Pg13.5	D4N-5C31						
	2-conduit	G1/2	D4N-6C31	D4N-5D31 D4N-6D31 D4N-8D31	D4N-5E31 D4N-6E31 D4N-8E31	D4N-5F31 D4N-6F31 D4N-8F31	D4N-5F31 D4N-6F31 D4N-8F31	D4N-5F31 D4N-6F31 D4N-8F31	D4N-5F31 D4N-6F31 D4N-8F31
		M20	D4N-8C31						
		Pg13.5	D4N-1C32	D4N-1D32 D4N-2D32 D4N-3D32 D4N-4D32 ---	D4N-1E32 D4N-2E32 D4N-3E32 D4N-4E32 D4N-9E32	D4N-1F32 D4N-2F32 D4N-3F32 D4N-4F32 ---	D4N-1F32 D4N-2F32 D4N-3F32 D4N-4F32 ---	D4N-1F32 D4N-2F32 D4N-3F32 D4N-4F32 ---	D4N-1F32 D4N-2F32 D4N-3F32 D4N-4F32 ---
		G1/2	D4N-2C32						
		1/2-14NPT	D4N-3C32						
Roller plunger	1-conduit	M20	D4N-4C32	D4N-1D32 D4N-2D32 D4N-3D32 D4N-4D32 ---	D4N-1E32 D4N-2E32 D4N-3E32 D4N-4E32 D4N-9E32	D4N-1F32 D4N-2F32 D4N-3F32 D4N-4F32 ---	D4N-1F32 D4N-2F32 D4N-3F32 D4N-4F32 ---	D4N-1F32 D4N-2F32 D4N-3F32 D4N-4F32 ---	D4N-1F32 D4N-2F32 D4N-3F32 D4N-4F32 ---
		M12 connector	---						
		Pg13.5	D4N-5C32	D4N-5D32 D4N-6D32 D4N-8D32	D4N-5E32 D4N-6E32 D4N-8E32	D4N-5F32 D4N-6F32 D4N-8F32	D4N-5F32 D4N-6F32 D4N-8F32	D4N-5F32 D4N-6F32 D4N-8F32	D4N-5F32 D4N-6F32 D4N-8F32
		G1/2	D4N-6C32						
		M20	D4N-8C32						
	2-conduit	Pg13.5	D4N-1C62	D4N-1D62 D4N-2D62 D4N-3D62 D4N-4D62 ---	D4N-1E62 D4N-2E62 D4N-3E62 D4N-4E62 D4N-9E62	D4N-1F62 D4N-2F62 D4N-3F62 D4N-4F62 ---	D4N-1F62 D4N-2F62 D4N-3F62 D4N-4F62 ---	D4N-1F62 D4N-2F62 D4N-3F62 D4N-4F62 ---	D4N-1F62 D4N-2F62 D4N-3F62 D4N-4F62 ---
		G1/2	D4N-2C62						
		1/2-14NPT	D4N-3C62						
		M20	D4N-4C62						
		M12 connector	---						
One-way roller arm lever (horizontal)	1-conduit	Pg13.5	D4N-5C62	D4N-5D62 D4N-6D62 D4N-8D62	D4N-5E62 D4N-6E62 D4N-8E62	D4N-5F62 D4N-6F62 D4N-8F62	D4N-5F62 D4N-6F62 D4N-8F62	D4N-5F62 D4N-6F62 D4N-8F62	D4N-5F62 D4N-6F62 D4N-8F62
		G1/2	D4N-6C62						
		1/2-14NPT	D4N-8C62						
		M20	D4N-8C62						
		Pg13.5	D4N-1C72	D4N-1D72 D4N-2D72 D4N-3D72 D4N-4D72 ---	D4N-1E72 D4N-2E72 D4N-3E72 D4N-4E72 D4N-9E72	D4N-1F72 D4N-2F72 D4N-3F72 D4N-4F72 ---	D4N-1F72 D4N-2F72 D4N-3F72 D4N-4F72 ---	D4N-1F72 D4N-2F72 D4N-3F72 D4N-4F72 ---	D4N-1F72 D4N-2F72 D4N-3F72 D4N-4F72 ---
		G1/2	D4N-2C72						
		1/2-14NPT	D4N-3C72						
		M20	D4N-4C72						
		M12 connector	---						
	2-conduit	G1/2	D4N-6C2G	D4N-6D2G D4N-8D2G	D4N-6E2G D4N-8E2G	D4N-6F2G D4N-8F2G	D4N-6F2G D4N-8F2G	D4N-6F2G D4N-8F2G	D4N-6F2G D4N-8F2G
		M20	D4N-8C2G						
		Pg13.5	D4N-1C2H	D4N-1D2H D4N-2D2H D4N-3D2H D4N-4D2H ---	D4N-1E2H D4N-2E2H D4N-3E2H D4N-4E2H D4N-9E2H	D4N-1F2H D4N-2F2H D4N-3F2H D4N-4F2H ---	D4N-1F2H D4N-2F2H D4N-3F2H D4N-4F2H ---	D4N-1F2H D4N-2F2H D4N-3F2H D4N-4F2H ---	D4N-1F2H D4N-2F2H D4N-3F2H D4N-4F2H ---
		G1/2	D4N-2C2H						
		1/2-14NPT	D4N-3C2H						
Adjustable roller lever, form lock (metal lever, resin roller)	1-conduit	M20	D4N-4C2H	D4N-4D2G D4N-6D2G D4N-8D2G	D4N-4E2G D4N-6E2G D4N-8E2G	D4N-4F2G D4N-6F2G D4N-8F2G	D4N-4F2G D4N-6F2G D4N-8F2G	D4N-4F2G D4N-6F2G D4N-8F2G	

General-purpose Switches with Two Contacts

Actuator	Conduit size	Built-in switch mechanism							
		1NC/1NO (Snap-action)		2NC (Snap-action)		1NC/1NO (Slow-action)		2NC (Slow-action)	
		Model	Direct opening	Model	Direct opening	Model	Direct opening	Model	Direct opening
 Fork lever lock (right operation)	 1-conduit	G1/2			D4N-2ARE		D4N-2BRE		D4N-3BRE
		1/2-14NPT			D4N-3ARE		D4N-4ARE		D4N-4BRE
		M20			D4N-4ARE		D4N-6BRE		D4N-8BRE
		G1/2			D4N-6ARE		D4N-8BRE		---
	 2-conduit	M20			D4N-8ARE		---		---
		G1/2			D4N-2ALE		D4N-2BLE		D4N-3BLE
		1/2-14NPT			D4N-3ALE		D4N-4BLE		---
		M20			D4N-4ALE		D4N-6BLE		---
 Fork lever lock (left operation)	 1-conduit	G1/2			D4N-2ALE		D4N-2BLE		D4N-3BLE
		1/2-14NPT			D4N-3ALE		D4N-4BLE		---
		M20			D4N-4ALE		D4N-6BLE		---
		G1/2			D4N-6ALE		D4N-8BLE		---
	 2-conduit	M20			D4N-8ALE		---		---
		G1/2			D4N-2280		D4N-2B80		D4N-3B80
		1/2-14NPT			D4N-3280		D4N-4B80		---
		M20			D4N-4280		---		---
 Cat whisker	 1-conduit	G1/2			D4N-6180		D4N-6280		D4N-6B80
		1/2-14NPT			D4N-8180		D4N-8280		D4N-8B80
		M20			D4N-2180		D4N-2280		---
		G1/2			D4N-3180		D4N-3280		---
	 2-conduit	M20			D4N-4180		D4N-4280		---
		G1/2			D4N-6180		D4N-6280		---
		M20			D4N-8180		D4N-8280		---
		G1/2			D4N-2187		D4N-2287		---
 Plastic rod	 1-conduit	1/2-14NPT			D4N-3187		D4N-3287		D4N-3B87
		M20			D4N-4187		D4N-4287		D4N-4B87
		G1/2			D4N-6187		D4N-6287		D4N-6B87
		M20			D4N-8187		D4N-8287		D4N-8B87
	 2-conduit	G1/2			D4N-2187		D4N-2287		---
		1/2-14NPT			D4N-3187		D4N-3287		---
		M20			D4N-4187		D4N-4287		---
		G1/2			D4N-6187		D4N-6287		---

Note: 1. It is recommended that M20 be used for Switches to be exported to Europe and 1/2-14NPT be used for Switches to be exported to North American countries.

2. Mechanically speaking, these models are general-purpose switches with no direct opening mechanism.

General-purpose Switches with Three Contacts and MBB Contacts

Actuator	Conduit size	Built-in switch mechanism							
		2NC/1NO (Slow-action)		3NC (Slow-action)		1NC/1NO MBB (Slow-action)		2NC/1NO MBB (Slow-action)	
		Model	Direct opening	Model	Direct opening	Model	Direct opening	Model	Direct opening
 Fork lever lock (right operation)	 1-conduit	G1/2			D4N-2CRE		D4N-2DRE		D4N-2ERE
		1/2-14NPT			D4N-3CRE		D4N-3DRE		D4N-3ERE
		M20			D4N-4CRE		D4N-4DRE		D4N-4ERE
		G1/2			D4N-6CRE		D4N-6DRE		D4N-6ERE
	 2-conduit	M20			D4N-8CRE		D4N-8DRE		D4N-8ERE
		G1/2			D4N-2CLE		D4N-2DLE		D4N-2FLE
		1/2-14NPT			D4N-3CLE		D4N-3DLE		D4N-3FLE
		M20			D4N-4CLE		D4N-4DLE		D4N-4FLE
 Fork lever lock (left operation)	 1-conduit	G1/2			D4N-6CLE		D4N-6DLE		D4N-6FLE
		1/2-14NPT			D4N-8CLE		D4N-8DLE		D4N-8FLE
		M20			D4N-2CLE		D4N-2DLE		---
		G1/2			D4N-3CLE		D4N-3DLE		---
	 2-conduit	M20			D4N-4CLE		D4N-4DLE		---
		G1/2			D4N-6CLE		D4N-6DLE		---
		M20			D4N-8CLE		D4N-8DLE		---
		G1/2			D4N-2D87		D4N-2D87		---
 Cat whisker	 1-conduit	M20			D4N-3D87		D4N-3D87		---
		G1/2			D4N-4D87		D4N-4D87		---
		M20			D4N-6D87		D4N-6D87		---
		G1/2			D4N-8D87		D4N-8D87		---
	 2-conduit	M20			D4N-2D87		D4N-2D87		---
		G1/2			D4N-3D87		D4N-3D87		---
		M20			D4N-4D87		D4N-4D87		---
		G1/2			D4N-6D87		D4N-6D87		---
		M20			D4N-8D87		D4N-8D87		---

Note: 1. It is recommended that M20 be used for Switches to be exported to Europe and 1/2-14NPT be used for Switches to be exported to North American countries.

2. Mechanically speaking, these models are general-purpose switches with no direct opening mechanism.

Specifications

Standards and EC Directives

Conforms to the following EC Directives:

- Machinery Directive
- Low Voltage Directive
- EN50047
- EN60204-1
- EN1088
- GS-ET-15

Certified Standards

Certification body	Standard	File No.
TÜV SÜD	EN60947-5-1 (certified direct opening)	*1
UL *2	UL508, CSA C22.2 No.14	E76675
CQC (CCC) *3	GB14048.5	2004010305105973

*1. Consult your OMRON representative for details.

*2. Certification for CSA C22.2 No. 14 is authorized by the UL mark.

*3. Ask your OMRON representative for information on certified models.

Certified Standard Ratings

TÜV (EN60947-5-1), CCC (GB14048.5)

Item	Utilization category	AC-15	DC-13
Rated operating current (I _e)	3 A	0.27 A	
Rated operating voltage (U _e)	240 V	250 V	

Note: Use a 10 A fuse type gI or gG that conforms to IEC60269 as a short-circuit protection device. This fuse is not built into the Switch.

UL/CSA (UL508, CSA C22.2 No. 14)

A300

Rated voltage	Carry current	Current (A)		Volt-amperes (VA)	
		Make	Break	Make	Break
120 VAC	10 A	60	6	7,200	720
		30	3		

Q300

Rated voltage	Carry current	Current (A)		Volt-amperes (VA)	
		Make	Break	Make	Break
125 VDC	2.5 A	0.55	0.55	69	69
		0.27	0.27		

Characteristics

Degree of protection *1		IP67 (EN60947-5-1)
Durability *2	Mechanical	15,000,000 operations min. *5
	Electrical	500,000 operations min. (3 A resistive load at 250 VAC) *3 300,000 operations min. (10 A resistive load at 250 VAC)
Operating speed		1 to 500 mm/s (D4N-1120)
Operating frequency		30 operations/minute max.
Contact resistance		25 mΩ max.
Minimum applicable load *4		1 mA resistive load at 5 VDC (N-level reference value)
Rated insulation voltage (Ui)		300 V
Rated frequency		50/60 Hz
Protection against electric shock		Class II (double insulation)
Pollution degree (operating environment)		3 (EN60947-5-1)
Impulse withstand voltage (EN60947-5-1)	Between terminals of same polarity	2.5 kV
	Between terminals of different polarity	4 kV
	Between each terminal and non-current carrying metallic parts	6 kV
Insulation resistance		100 MΩ min.
Contact gap		Snap-action: 2 × 0.5 mm min. Slow-action: 2 × 2 mm min.
Vibration resistance	Malfunction	10 to 55 Hz, 0.75 mm single amplitude
Shock resistance	Destruction	1,000 m/s ² min.
	Malfunction	300 m/s ² min.
Conditional short-circuit current		100 A (EN60947-5-1)
Conventional free air thermal current (I_{th})		10 A (EN60947-5-1)
Ambient operating temperature		−30 to 70°C (with no icing)
Ambient operating humidity		95% max.
Weight		Approx. 82 g (D4N-1120) Approx. 99 g (D4N-5120)

Note: 1. The above values are initial values.

2. Once a contact has been used to switch a standard load, it cannot be used for a load of a smaller capacity.

Doing so may result in roughening of the contact surface and contact reliability may be lost.

***1.** The degree of protection is tested using the method specified by the standard (EN60947-5-1). Confirm that sealing properties are sufficient for the operating conditions and environment beforehand. Although the switch box is protected from dust or water penetration, do not use the D4N in places where foreign material such as dust, dirt, oil, water, or chemicals may penetrate through the head. Otherwise, accelerated wear, Switch damage or malfunctioning may occur.

***2.** The durability is for an ambient temperature of 5 to 35°C and an ambient humidity of 40% to 70%. For more details, consult your OMRON representative.

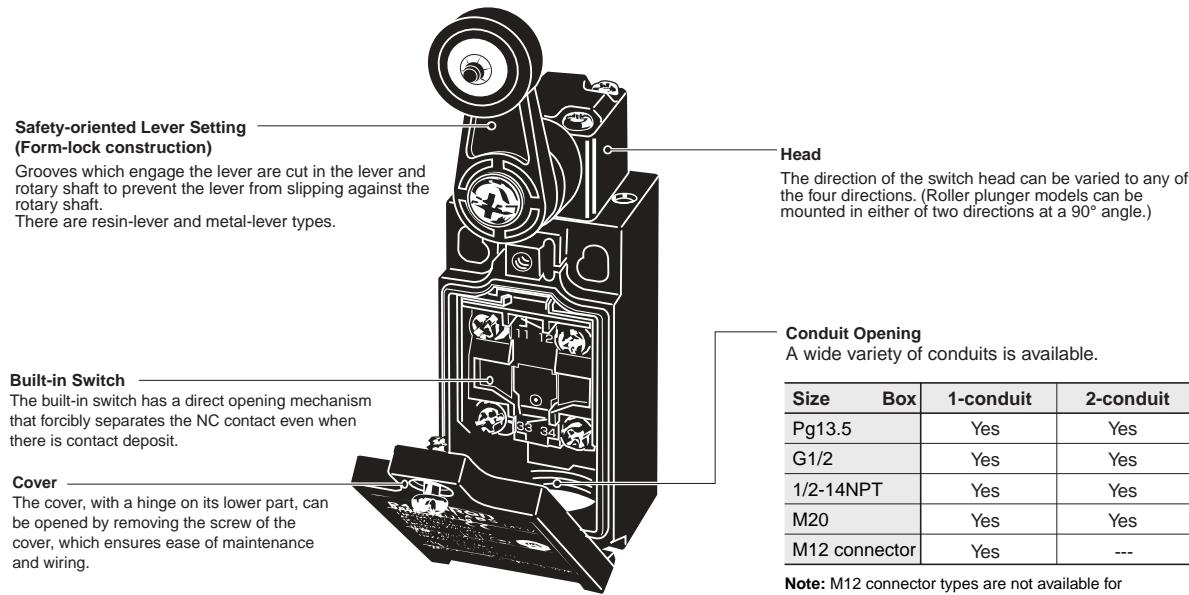
***3.** Do not pass the 3 A, 250 VAC load through more than 2 circuits.

***4.** This value will vary with the switching frequency, environment, and reliability level. Confirm that correct operation is possible with the actual load beforehand.

***5.** The mechanical durability of fork lever lock models is 10,000,000 operations min.

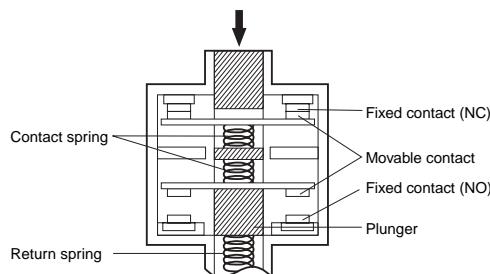
Structure and Nomenclature

Structure



Direct Opening Mechanism

1NC/1NO Contact (Slow-action)

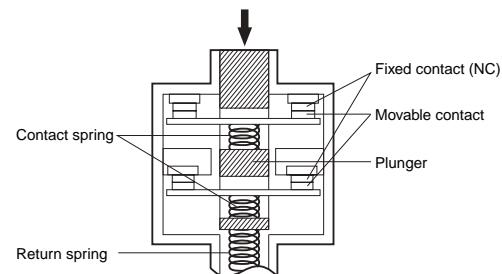


Conforms to EN60947-5-1 Direct Opening Operation 

(Only the NC contact side has a direct opening mechanism.)

When contact welding occurs, the contacts are separated from each other by the plunger being pushed in.

2NC Contact (Slow-action)

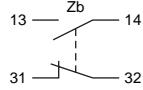
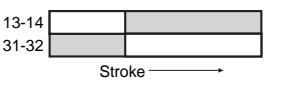
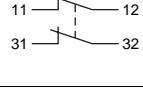
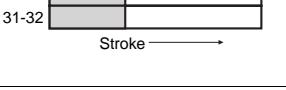
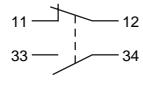
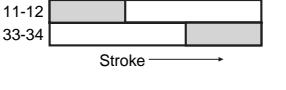
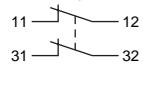
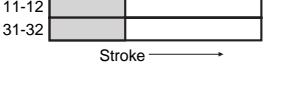
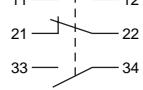
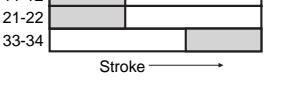
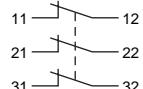
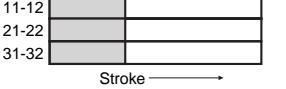
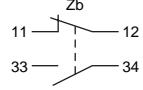
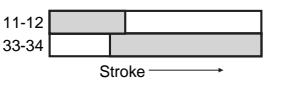
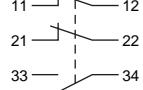
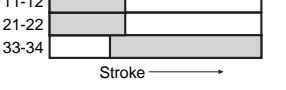


Conforms to EN60947-5-1 Direct Opening Operation

(Both NC contacts have a direct opening mechanism.)

When contact welding occurs, the contacts are separated from each other by the plunger being pushed in.

Contact Form

Model	Contact	Contact form	Operating pattern	Remarks
D4N-□1□	1NC/1NO (Snap-action)			Only NC contacts 31-32 have a certified direct opening mechanism.  The terminals 13-14 and 31-32 can be used as unlike poles.
D4N-□2□	2NC (Snap-action)			Only NC contacts 11-12 and 31-32 have a certified direct opening mechanism.  The terminals 11-12 and 31-32 can be used as unlike poles.
D4N-□A□	1NC/1NO (Slow-action)			Only NC contacts 11-12 have a certified direct opening mechanism.  The terminals 11-12 and 33-34 can be used as unlike poles.
D4N-□B□	2NC (Slow-action)			Only NC contacts 11-12 and 31-32 have a certified direct opening mechanism.  The terminals 11-12 and 31-32 can be used as unlike poles.
D4N-□C□	2NC/1NO (Slow-action)			Only NC contacts 11-12 and 21-22 have a certified direct opening mechanism.  The terminals 11-12, 21-22, and 33-34 can be used as unlike poles.
D4N-□D□	3NC (Slow-action)			Only NC contacts 11-12, 21-22, and 31-32 have a certified direct opening mechanism.  The terminals 11-12, 21-22, and 31-32 can be used as unlike poles.
D4N-□E□	1NC/1NO MBB * (Slow-action)			Only NC contacts 11-12 have a certified direct opening mechanism.  The terminals 11-12 and 33-34 can be used as unlike poles.
D4N-□F□	2NC/1NO MBB * (Slow-action)			Only NC contacts 11-12 and 21-22 have a certified direct opening mechanism.  The terminals 11-12, 21-22 and 33-34 can be used as unlike poles.

Note: Terminals are numbered according to EN50013 and the contact forms are according to IEC947-5-1.

* MBB (Make Before Break) contacts have an overlapping structure, so that before the normally closed contact (NC) opens, the normally open contact (NO) closes.

Dimensions and Operating Characteristics

(Unit: mm)

Switches

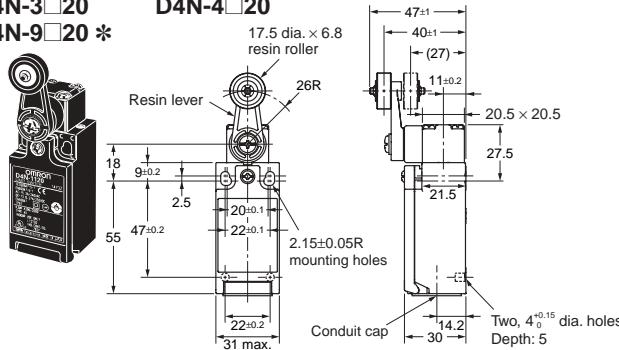
1-conduit Models

Roller Lever (Resin Lever, Resin Roller)

D4N-1□20 D4N-2□20

D4N-3□20 D4N-4□20

D4N-9□20 *

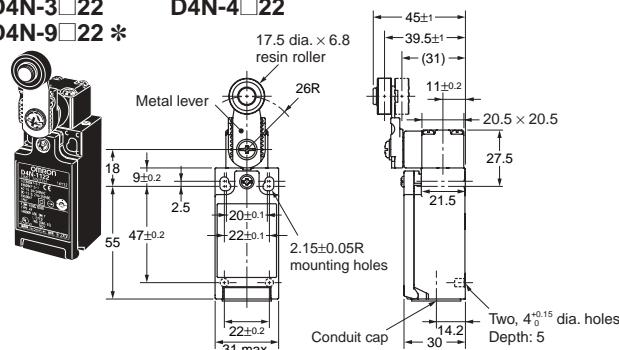


Roller Lever (Metal Lever, Resin Roller)

D4N-1□22 D4N-2□22

D4N-3□22 D4N-4□22

D4N-9□22 *

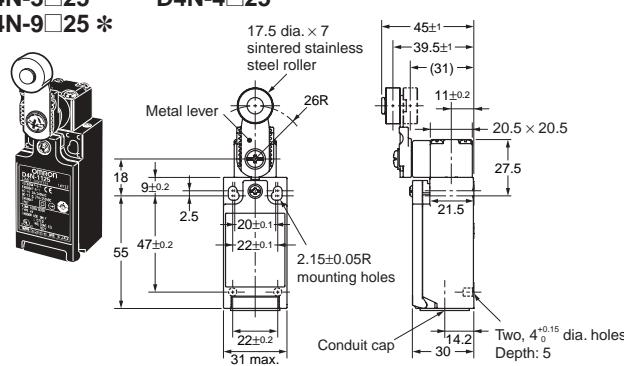


Roller Lever (Metal Lever, Metal Roller)

D4N-1□25 D4N-2□25

D4N-3□25 D4N-4□25

D4N-9□25 *

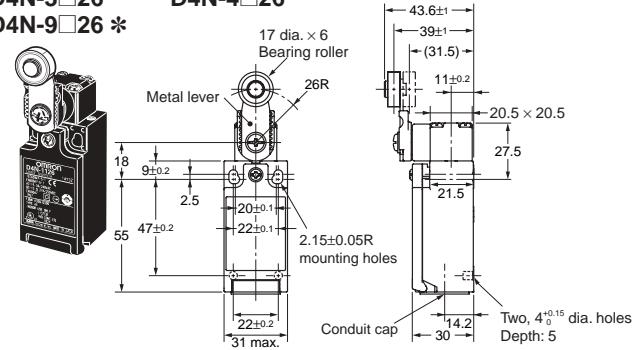


Roller Lever (Metal Lever, Bearing Roller)

D4N-1□26 D4N-2□26

D4N-3□26 D4N-4□26

D4N-9□26 *

**Note:** Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.

* Refer to page 12 for details on M12 connectors.

Snap-action (1NC/1NO) (2NC), Slow-action (2NC) (3NC)

Model	D4N-□120	D4N-□122	D4N-□125	D4N-□126
Operating characteristics	D4N-□220	D4N-□222	D4N-□225	D4N-□226
Operating force	D4N-□B20	D4N-□B22	D4N-□B25	D4N-□B26
Release force	D4N-□D20	D4N-□D22	D4N-□D25	D4N-□D26
Pretravel	OF max.	5.0 N		
Overtravel	RF min.	0.5 N		
Movement differential MD max. *1	PT	18° to 27°		
Operating position	OT min.	40°		
Total travel	OT min.	14°		
Direct opening travel	DOT min. *3	50°		
Direct opening force	DOF min. *3	20 N		

Note: Variation occurs in the simultaneity of contact opening/closing operations of 2NC, 2NC/1NO, and 3NC contacts. Check contact operation.

*1. Only for snap-action models.

*2. Reference value.

*3. For safe use, always make sure that the minimum values or greater are provided.

Slow-action (1NC/1NO) (2NC/1NO)

	Model	D4N-□A20	D4N-□A22	D4N-□A25	D4N-□A26
Operating characteristics	D4N-□C20	D4N-□C22	D4N-□C25	D4N-□C26	
Operating force	D4N-□E20	D4N-□E22	D4N-□E25	D4N-□E26	
Release force	D4N-□F20	D4N-□F22	D4N-□F25	D4N-□F26	
Pretravel	OF max.	5.0 N			
Overtravel	RF min.	0.5 N			
PT (NC)	18° to 27°				
PT (NO) *1	(44°)				
PT (NC) *2	27.5° to 36.5°				
PT (NO) *1, *2	(18°)				
PT (NC) *3					
PT (NO) *1, *2					
PT (NC) *3					
Overtravel	OT min.	40°			
Operating position	OP	---			
Total travel	TT *1	(80°)			
Direct opening travel	DOT min. *3	50°			
Direct opening force	DOF min. *3	20 N			

*1. Reference values.

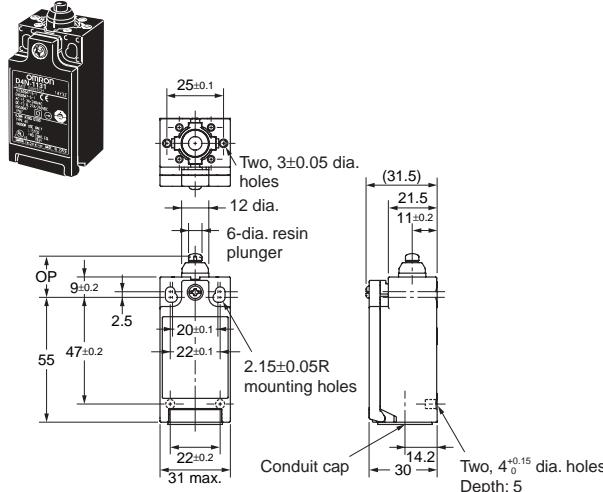
*2. Only for MBB models. (D4N-□E□□ or D4N-□F□□)

*3. For safe use, always make sure that the minimum values or greater are provided.

1-conduit Models

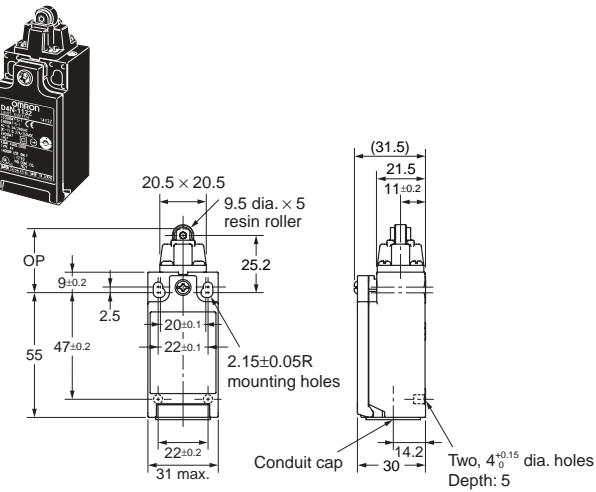
Plunger

D4N-1□31 D4N-2□31
 D4N-3□31 D4N-4□31
 D4N-9□31 *

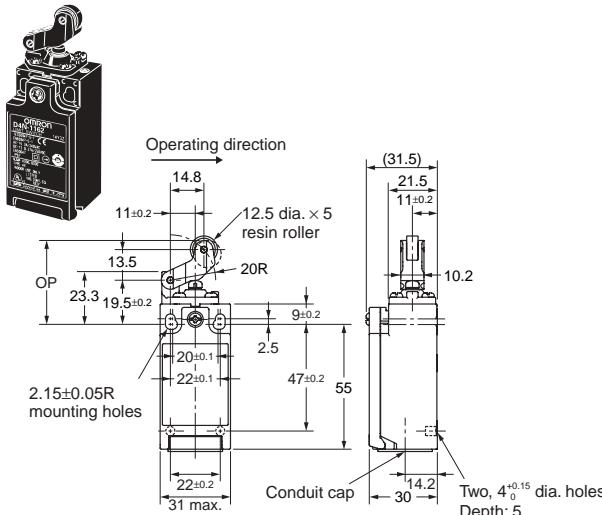


Roller Plunger

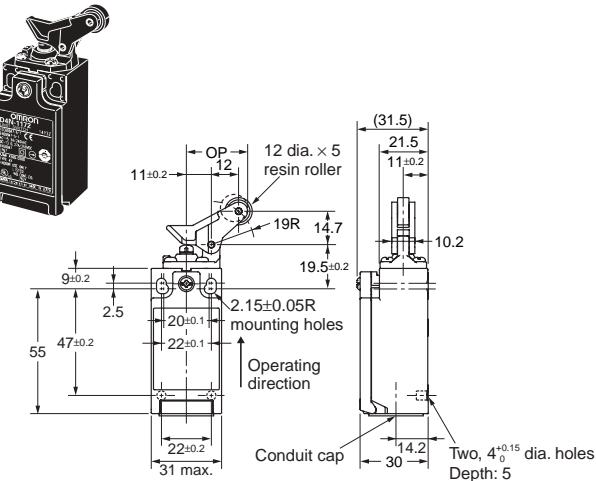
D4N-1□32 D4N-2□32
 D4N-3□32 D4N-4□32
 D4N-9□32 *

One-way Roller Arm Lever
(Horizontal)

D4N-1□62 D4N-2□62
 D4N-3□62 D4N-4□62
 D4N-9□62 *

One-way Roller Arm Lever
(Vertical)

D4N-1□72 D4N-2□72
 D4N-3□72 D4N-4□72
 D4N-9□72 *



Note: Unless otherwise specified, a tolerance of ±0.4 mm applies to all dimensions.

* Refer to page 12 for details on M12 connectors.

Snap-action (1NC/1NO) (2NC), Slow-action (2NC) (3NC)

Model		D4N-□131	D4N-□132	D4N-□162	D4N-□172
Operating characteristics		D4N-□231	D4N-□232	D4N-□262	D4N-□272
Operating force	OF max.	6.5 N	6.5 N	5.0 N	5.0 N
Release force	RF min.	1.5 N	1.5 N	0.8 N	0.8 N
Pretravel	PT max.	2 mm	2 mm	4 mm	4 mm
Overtravel	OT min.	4 mm	4 mm	5 mm	5 mm
Movement differential	MD max. *1	1 mm	1 mm	1.5 mm	1.5 mm
Operating position	OP	18.2 ±0.5 mm	28.6 ±0.8 mm	37 ±0.8 mm	27 ±0.8 mm
Total travel	TT *2	(6 mm)	(6 mm)	(9 mm)	(9 mm)
Direct opening travel	DOT min. *3	3.2 mm	3.2 mm	5.8 mm	4.8 mm
Direct opening force	DOF min. *3	20 N	20 N	20 N	20 N

Note: Variation occurs in the simultaneity of contact opening/closing operations of 2NC, 2NC/1NO, and 3NC contacts. Check contact operation.

*1. Only for snap-action models.

*2. Reference value.

*3. For safe use, always make sure that the minimum values or greater are provided.

Slow-action (1NC/1NO) (2NC/1NO)

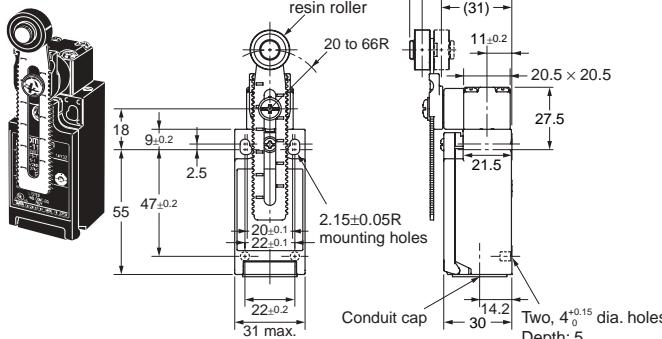
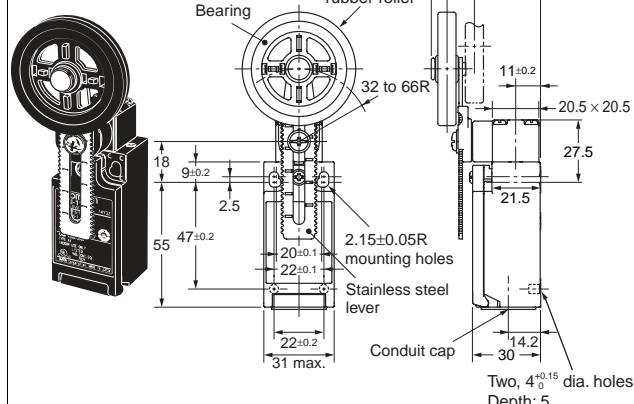
Model		D4N-□A31	D4N-□A32	D4N-□A62	D4N-□A72
Operating characteristics		D4N-□C31	D4N-□C32	D4N-□C62	D4N-□C72
Operating force	OF max.	6.5 N	6.5 N	5.0 N	5.0 N
Release force	RF min.	1.5 N	1.5 N	0.8 N	0.8 N
Pretravel	PT max. (NC)	2 mm	2 mm	4 mm	4 mm
	PT (NO) *1	(2.9 mm)	(2.9 mm)	(5.2 mm)	(4.3 mm)
	PT max. (NC) *2	2.8 mm	2.8 mm	4 mm	4 mm
	PT (NO) *1, *2	(1 mm)	(1 mm)	(1.5 mm)	(1.5 mm)
Overtravel	OT min.	4 mm	4 mm	5 mm	5 mm
Operating position	OP	18.2 ±0.5 mm	28.6 ±0.8 mm	37 ±0.8 mm	27 ±0.8 mm
	OP *2	17.4 ±0.5 mm	28 ±0.8 mm	36 ±0.8 mm	26.1 ±0.8 mm
Total travel	TT *1	(6 mm)	(6 mm)	(9 mm)	(9 mm)
Direct opening travel	DOT min. *3	3.2 mm	3.2 mm	5.8 mm	4.8 mm
Direct opening force	DOF min. *3	20 N	20 N	20 N	20 N

*1. Reference values.

*2. Only for MBB models. (D4N-□E□□ or D4N-□F□□)

*3. For safe use, always make sure that the minimum values or greater are provided.

1-conduit Models

Adjustable Roller Lever, Form Lock
(with Metal Lever, Resin Roller)D4N-1□2G D4N-2□2G
D4N-3□2G D4N-4□2G
D4N-9□2G *Adjustable Roller Lever, Form Lock
(with Metal Lever, Rubber Roller)D4N-1□2H D4N-2□2H
D4N-3□2H D4N-4□2H
D4N-9□2H *

Note: Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.

* Refer to following diagrams for details on M12 connectors.

Snap-action (1NC/1NO) (2NC), Slow-action (2NC) (3NC)

Model		D4N-□12H	D4N-□12G
		D4N-□22H	D4N-□22G
		D4N-□B2H	D4N-□B2G
		D4N-□D2H	D4N-□D2G
			*1
Operating characteristics			
Operating force	OF max.	4.5 N	
Release force	RF min.	0.4 N	
Pretravel	PT	18° to 27°	
Overtravel	OT min.	40°	
Movement differential	MD max. *2	14°	
Operating position	OP	---	
Total travel	TT *3	(80°)	
Direct opening travel	DOT min. *4	50°	
Direct opening force	DOF min. *4	20 N	

Note: Variation occurs in the simultaneity of contact opening/closing operations of 2NC, 2NC/1NO, and 3NC contacts. Check contact operation.

*1. The operating characteristics of these Switches were measured with the roller lever set at 32 mm.

*2. Only for snap-action models.

*3. Reference value.

*4. For safe use, always make sure that the minimum values or greater are provided.

Slow-action (1NC/1NO) (2NC/1NO)

Model		D4N-□A2H	D4N-□A2G
		D4N-□C2H	D4N-□C2G
		D4N-□E2H	D4N-□E2G
		D4N-□F2H	D4N-□F2G
			*1
Operating characteristics			
Operating force	OF max.	4.5 N	
Release force	RF min.	0.4 N	
Pretravel	PT (NC)	18° to 27°	
	PT (NO) *2	(44°)	
	PT (NC) *3	27.5° to 36.5°	
	PT (NO) *2, *3	(18°)	
Overtravel	OT min.	40°	
Operating position	OP	---	
Total travel	TT *2	(80°)	
Direct opening travel	DOT min.	50°	
Direct opening force	DOF min. *4	20 N	

*1. The operating characteristics of these Switches were measured with the roller lever set at 32 mm.

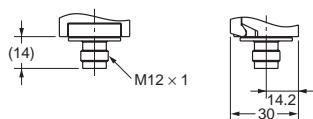
*2. Reference values.

*3. Only for MBB models. (D4N-□E□□ or D4N-□F□□)

*4. For safe use, always make sure that the minimum values or greater are provided.

1-conduit M12 Connector

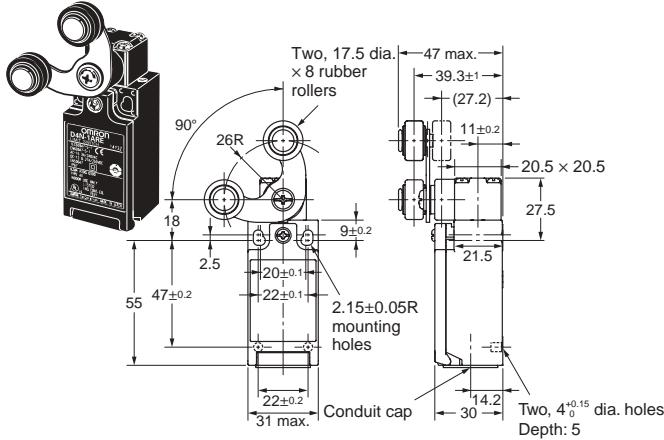
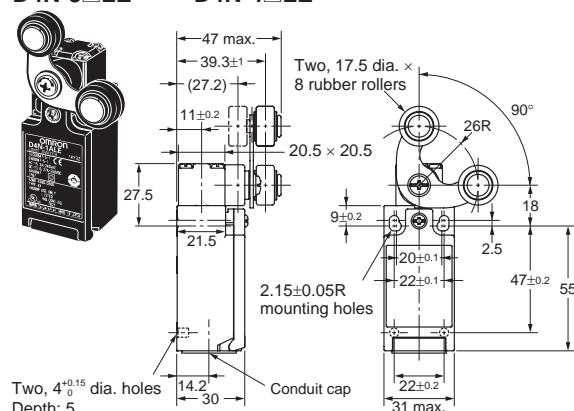
D4N-9□□□



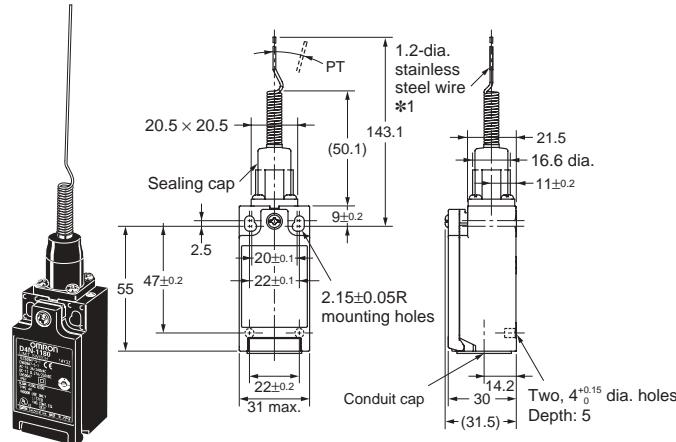
1-conduit Models

Fork Lever Lock

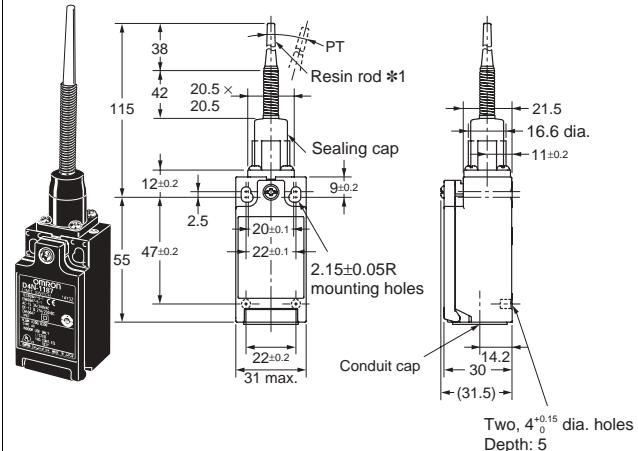
(Right Operation) *2

D4N-1□RE D4N-2□RE
D4N-3□RE D4N-4□REFork Lever Lock
(Left Operation) *2D4N-1□LE D4N-2□LE
D4N-3□LE D4N-4□LE

Cat Whisker *2

D4N-2□80 D4N-3□80
D4N-4□80

Plastic Rod *2

D4N-2□87 D4N-3□87
D4N-4□87**Note:** Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.***1.** The usable range for stainless steel wires and resin rods is 35 mm max. from the end with a total travel of 70 mm max.***2.** In terms of construction, the Switch is a General-purpose Limit Switch rather than a Safety Limit Switch.

Slow-action (1NC/1NO) (2NC/1NO) (2NC) (3NC)

Model Operating characteristics	D4N-□□RE	D4N-□□LE
Force necessary to reverse the direction of the lever: max.	6.4 N	6.4 N
Movement until the lever reverses	55 $\pm 10^\circ$	55 $\pm 10^\circ$
Movement until switch operation (NC)	(6.5°) (MBB: 10°)	(6.5°) (MBB: 10°)
Movement until switch operation (NO)	(18.5°) (MBB: 5°)	(18.5°) (MBB: 5°)

Note: Variation occurs in the simultaneity of contact opening/closing operations of 2NC, 2NC/1NO, and 3NC contacts. Check contact operation.

Snap-action (1NC/1NO) (2NC), Slow-action (2NC) (3NC)

Model Operating characteristics	D4N-□□80	D4N-□□87
Operating force OF max.	1.5 N	1.5 N
Pretravel PT max.	15°	15°

2-conduit Models

Roller Lever (Resin Lever, Resin Roller)

D4N-5□20

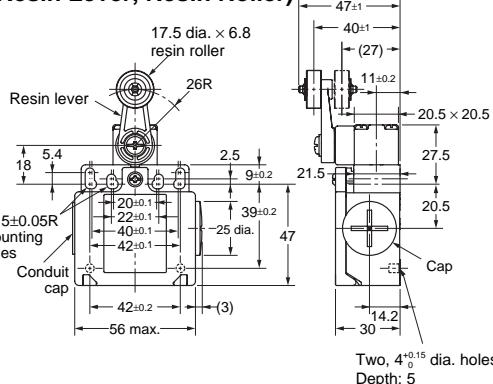
D4N-6□20

D4N-8□20



17.5 dia. x 6.8 resin roller

26R

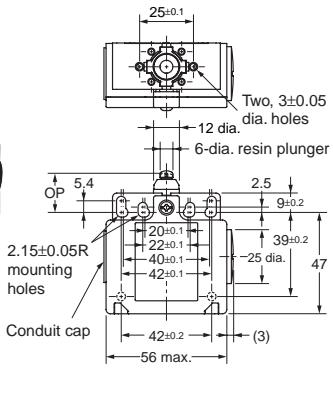


Plunger

D4N-5□31

D4N-6□31

D4N-8□31

Note: Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.

Snap-action (1NC/1NO) (2NC), Slow-action (2NC) (3NC)

Model	D4N-□120	D4N-□122	D4N-□131	D4N-□132
Operating characteristics	D4N-□220	D4N-□222	D4N-□231	D4N-□232
Operating force	OF max.	5 N	5 N	6.5 N
Release force	RF min.	0.5 N	0.5 N	1.5 N
Pretravel	PT	18° to 27°	18° to 27°	2 mm
Overtravel	OT min.	40°	40°	4 mm
Movement differential	MD max.	14°	14°	1 mm
*1				
Operating position OP	---	---	18 ±0.5 mm	28.2 ±0.8 mm
Total travel	TT *2	(80°)	(80°)	(6 mm)
Direct opening travel	DOT min. *3	50°	50°	3.2 mm
Direct opening force	DOF min. *3	20 N	20 N	20 N

Note: Variation occurs in the simultaneity of contact opening/closing operations of 2NC, 2NC/1NO, and 3NC contacts. Check contact operation.

*1. Only for snap-action models.

*2. Reference value.

*3. For safe use, always make sure that the minimum values or greater are provided.

Roller Lever (Metal Lever, Resin Roller)

D4N-5□22

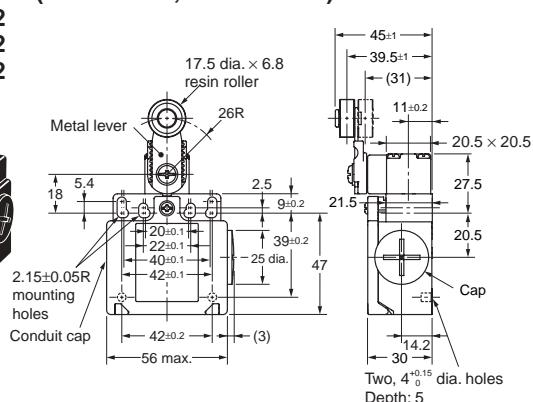
D4N-6□22

D4N-8□22



17.5 dia. x 6.8 resin roller

26R

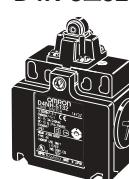


Roller Plunger

D4N-5□32

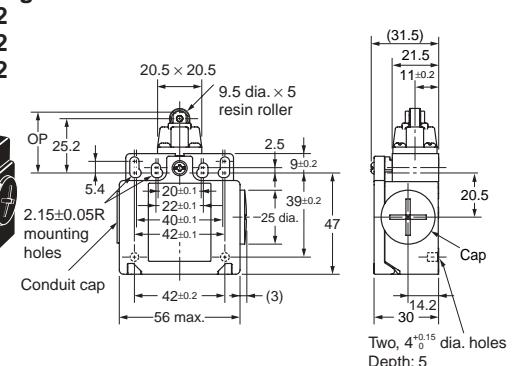
D4N-6□32

D4N-8□32



9.5 dia. x 5 resin roller

26R



Slow-action (1NC/1NO) (2NC/1NO)

Model	D4N-□A20	D4N-□A22	D4N-□A31	D4N-□A32
Operating characteristics	D4N-□C20	D4N-□C22	D4N-□C31	D4N-□C32
Operating force	OF max.	5 N	5 N	6.5 N
Release force	RF min.	0.5 N	0.5 N	1.5 N
Pretravel	PT (NC)	18° to 27°	18° to 27°	2 mm
*1				
PT (NO)				
*2				
PT (NC)				
*2				
PT (NO)				
*1, *2				
Overtravel	OT min.	40°	40°	4 mm
Operating position OP	---	---	18 ±0.5 mm	28.2 ±0.8 mm
OP *2				
Total travel	TT *1	(80°)	(80°)	(6 mm)
Direct opening travel	DOT min. *3	50°	50°	3.2 mm
Direct opening force	DOF min. *3	20 N	20 N	20 N

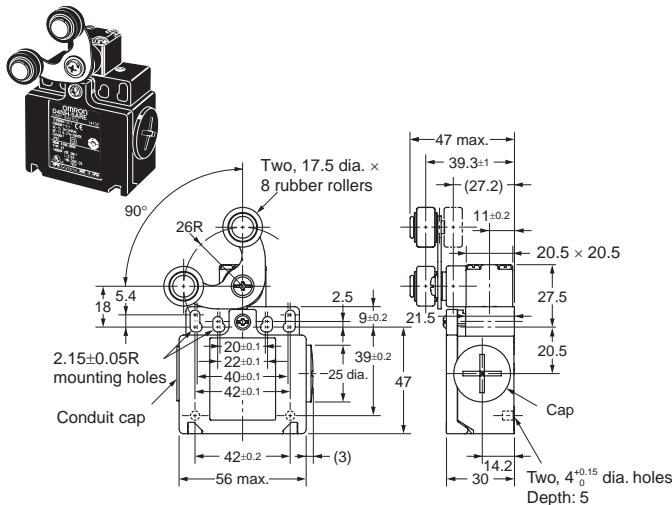
*1. Reference values.

*2. Only for MBB models. (D4N-□E□□ or D4N-□F□□)

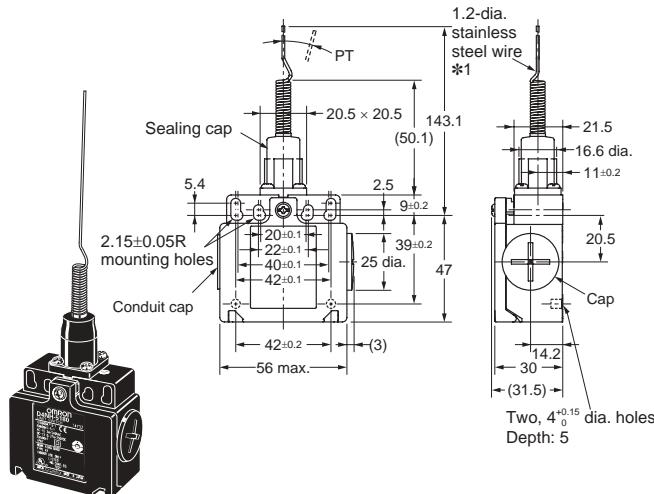
*3. For safe use, always make sure that the minimum values or greater are provided.

2-conduit Models

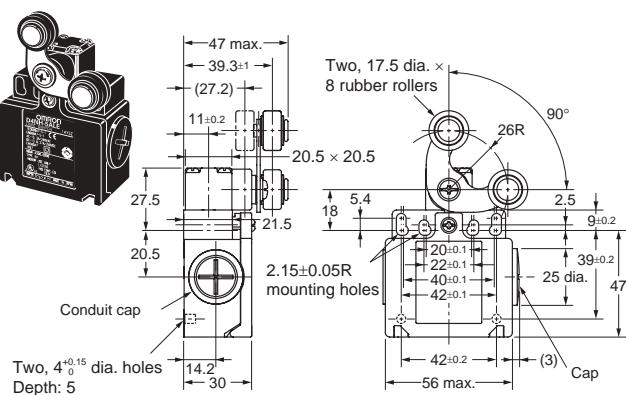
Fork Lever Lock (Right Operation) *2
D4N-5□RE D4N-6□RE
D4N-7□RE D4N-8□RE



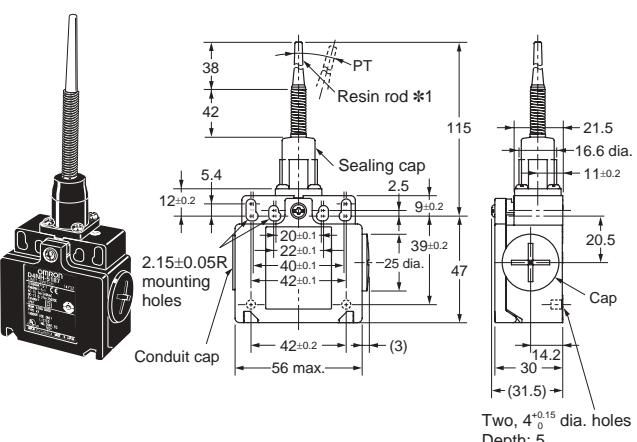
Cat Whisker *2
D4N-5□80 D4N-6□80
D4N-7□80 D4N-8□80



Fork Lever Lock *2 (Left Operation)
D4N-5□LE D4N-6□LE
D4N-7□LE D4N-8□LE



Plastic Rod *2
D4N-5□87 D4N-6□87
D4N-7□87 D4N-8□87



Note: Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.

***1.** The usable range for stainless steel wires and resin rods is 35 mm max. from the end with a total travel of 70 mm max.

***2.** In terms of construction, the Switch is a General-purpose Limit Switch rather than a Safety Limit Switch.

Slow-action (1NC/1NO) (2NC), Slow-action (2NC) (3NC)

Model Operating characteristics	D4N-□□RE	D4N-□□LE
Force necessary to reverse the direction of the lever: max.	6.4 N	6.4 N
Movement until the lever reverses	55 $\pm 10^\circ$ (6.5°)	55 $\pm 10^\circ$ (6.5°) (MBB: 10°)
Movement until switch operation (NC)		
Movement until switch operation (NO)	(18.5°)	(18.5°) (MBB: 5°)

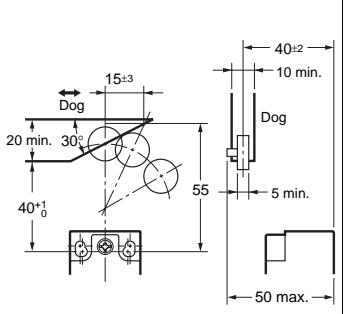
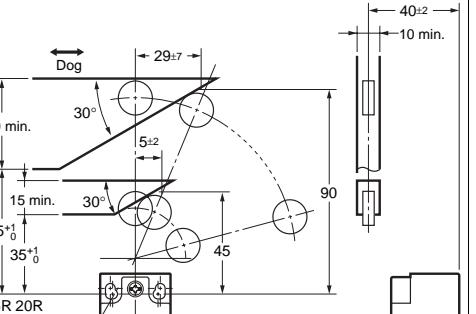
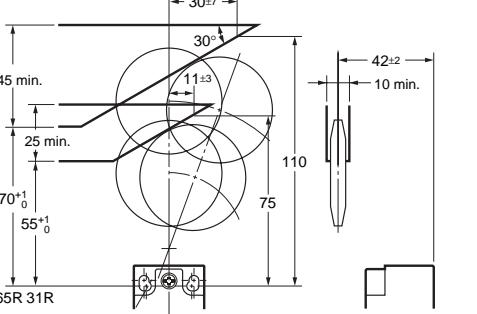
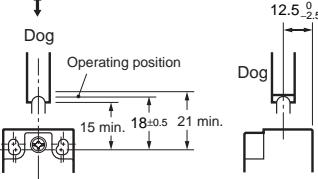
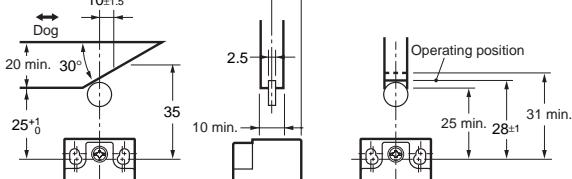
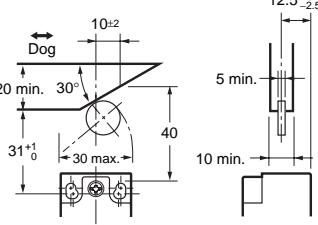
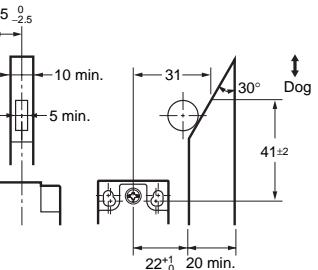
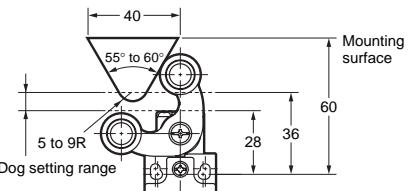
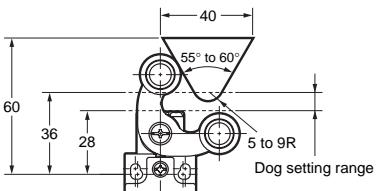
Note: Variation occurs in the simultaneity of contact opening/closing operations of 2NC, 2NC/1NO, and 3NC contacts. Check contact operation.

Snap-action (1NC/1NO), Slow-action (2NC) (3NC)

Model Operating characteristics	D4N-□□80	D4N-□□87
Operating force OF max.	1.5 N	1.5 N
Pretravel PT max.	15°	15°

Levers

Refer to the following for the angles and positions of the watchdogs (source: EN50047.)

Roller Lever (D4N-□□20) 	Adjustable Roller Lever, Form Lock (with Metal Lever, Resin Roller) (D4N-□□2G) (Reference Values) 	Adjustable Roller Lever, Form Lock (with Metal Lever, Rubber Roller) (D4N-□□2H) (Reference Values) 
Sealed Plunger (D4N-□□31) 	Roller Plunger (D4N-□□32) 	
One-way Roller Arm Lever (Horizontal) (D4N-□□62) 	One-way Roller Arm Lever (Vertical) (Reference Values) (D4N-□□72) 	
Fork Lever Lock (Right Operation) (D4N-□□RE) 	Fork Lever Lock (Left Operation) (D4N-□□LE) 	

Note: Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.

Safety Precautions

Refer to the “*Precautions for All Switches*” and “*Precautions for All Safety Limit Switches*”.

CAUTION

Electric shock may occasionally occur.
Do not use metal connectors or metal conduits.



Precautions for Safe Use

- Do not use the Switch submerged in oil or water, or in locations continuously subject to splashes of oil or water. Doing so may result in oil or water entering the Switch interior. (The IP67 degree of protection specification for the Switch refers to water penetration while the Switch is submerged in water for a specified period of time.)
- Always attach the cover after completing wiring and before using the Switch. Also, do not turn ON the Switch with the cover open. Doing so may result in electric shock.
- Do not switch circuits for two or more standard loads (250 VAC, 3 A). Doing so may adversely affect insulation performance.

Precautions for Correct Use

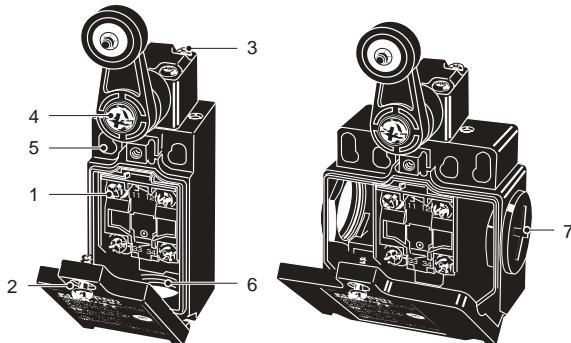
The Switch contacts can be used with either standard loads or microloads. Once the contacts have been used to switch a load, however, they cannot be used to switch smaller loads. The contact surfaces will become rough once they have been used and contact reliability for smaller loads may be reduced.

Mounting Method

Appropriate Tightening Torque

Tighten each of the screws to the specified torque. Loose screws may result in malfunction of the Switch within a short time.

1	Terminal screw	0.6 to 0.8 N·m
2	Cover mounting screw	0.5 to 0.7 N·m
3	Head mounting screw	0.5 to 0.6 N·m
4	Lever mounting screw	1.6 to 1.8 N·m
5	Body mounting screw	0.5 to 0.7 N·m
6	Connector, M12 adaptor	1.8 to 2.2 N·m (except 1/2-14NPT) 1.4 to 1.8 N·m (for 1/2-14NPT)
7	Cap screw	1.3 to 1.7 N·m

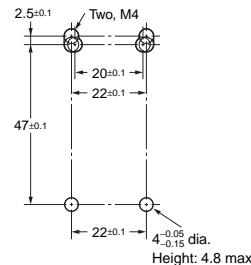


Switch Mounting

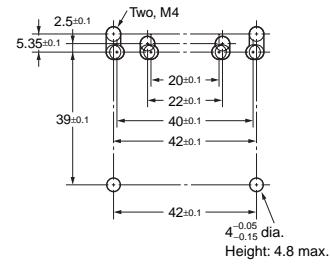
- Mount the Switch using M4 screws and spring washers and tighten the screws to the specified torque.
- For safety, use screws that cannot be easily removed, or use an equivalent measure to ensure that the Switch is secure.
- As shown below, two studs with a maximum height of 4.8 mm and a diameter of $4_{-0.15}^{+0.05}$ mm can be provided, the studs inserted into the holes on the bottom of the Switch, and the Switch secured at four locations to increase the mounting strength.

Switch Mounting Holes

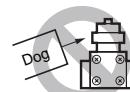
One-conduit Type



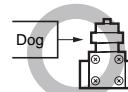
Two-conduit Type



- Make sure that the dog contacts the actuator at a right angle. Applying a load to the switch actuator (roller) on a slant may result in deformation or damage of the actuator or rotary shaft.



Incorrect



Correct

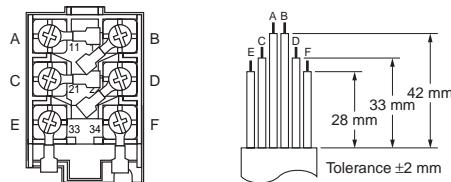
Wiring

Wiring

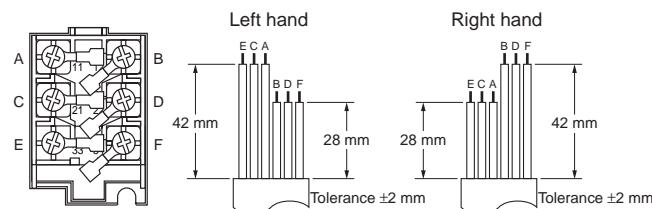
- When connecting to the terminals via insulating tube and M3.5 crimp terminals, arrange the crimp terminals as shown below so that they do not rise up onto the case or the cover.

Applicable lead wire size: AWG20 to AWG18 (0.5 to 0.75 mm²). Use lead wires of an appropriate length, as shown below. Not doing so may result in excess length causing the cover to rise and not fit properly.

One-conduit Type (3 Poles)



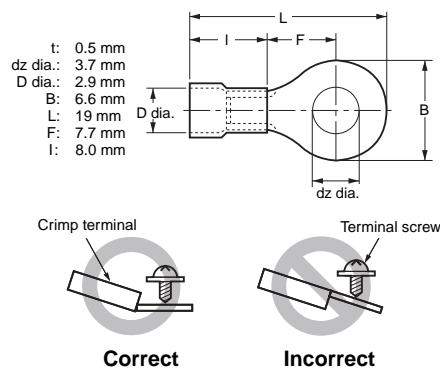
Two-conduit Type (3 Poles)



- Do not push crimp terminals into gaps in the case interior. Doing so may cause damage or deformation of the case.
- Use crimp terminals not more than 0.5 mm in thickness. Otherwise, they will interfere with other components inside the case.

[Reference] The crimp terminals shown below are not more than 0.5 mm thick.

Manufacturer	Type
J.S.T. Mfg. Co.	FN0.5-3.7 (F Type)
	N0.5-3.7 (Straight Type)

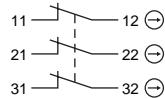


Contact Arrangement

- The contact arrangements are shown below.

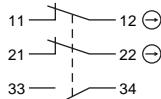
Screw Terminal Type

D4N-□D□□ (3NC)



D4N-□C□□ (2NC/1NO)

D4N-□F□□ (2NC/1NO (MBB))



D4N-□B□□ (2NC)

D4N-□2□□ (2NC (SNAP))

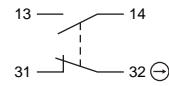


D4N-□A□□ (1NC/1NO)

D4N-□E□□ (1NC/1NO (MBB))



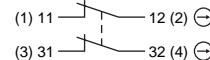
D4N-□1□□ (1NC/1NO (SNAP))



Connector Type

D4N-9B□□ (2NC)

D4N-92□□ (2NC (SNAP))

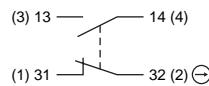


D4N-9A□□ (1NC/1NO)

D4N-9E□□ (1NC/1NO (MBB))



D4N-91□□ (1NC/1NO (SNAP))



Pin No. (Terminal No.)

- Applicable socket: XS2F-D421 series (OMRON).
- Refer to the *Connector Catalog* for details on socket pin numbers and lead wire colors.

Socket Tightening (Connector Type)

- Turn the socket connector screws by hand and tighten until no space remains between the socket and the plug.
- Make sure that the socket connector is tightened securely. Otherwise, the rated degree of protection (IP67) may not be maintained and vibration may loosen the socket connector.

Conduit Opening

- Connect a recommended connector to the opening of the conduit and tighten the connector to the specified torque. The case may be damaged if an excessive tightening torque is applied.
- When using 1/2-14NPT, wind sealing tape around the joint between the connector and conduit opening so that the enclosure will conform to IP67.
- Use a cable with a suitable diameter for the connector.
- Attach and tighten a conduit cap to the unused conduit opening when wiring. Tighten the conduit cap to the specified torque. The conduit cap is provided with the Switch (2-conduit types).

Changing the Lever

The lever mounting screws can be used to set the lever position to any position in a 360° angle at 7.5° increments. Grooves are incised on the lever and rotary shaft that engage to prevent the lever from slipping against the rotary shaft. The screws on adjustable roller lever models can also be loosened to change the length of the lever. Remove the screws from the front of the lever before mounting the lever in reverse (front/back), and set the level so that operation will be completed before exceeding a range of 180° on the horizontal.

Recommended Connectors

Use connectors with screws not exceeding 9 mm, otherwise the screws will protrude into the case interior, interfering with other components in the case.

The connectors listed in the following table have connectors with thread sections not exceeding 9 mm.

Use the recommended connectors to ensure conformance to IP67.

Size	Manufacturer	Model	Applicable cable diameter
G1/2	LAPP	ST-PF1/2 5380-1002	6.0 to 12.0 mm
Pg13.5	LAPP	ST-13.5 5301-5030	6.0 to 12.0 mm
M20	LAPP	ST-M20 × 1.5 5311-1020	7.0 to 13.0 mm
1/2-14NPT	LAPP	ST-NPT1/2 5301-6030	6.0 to 12.0 mm

Use LAPP connectors together with seal packing (JPK-16, GP-13.5, or GPM20), and tighten to the specified tightening torque. Seal packing is sold separately.

- LAPP is a German manufacturer.
- Before using a 2-conduit 1/2-14NPT type, attach the provided changing adaptor to the Switch and then connect the recommended connector.

Others

- When attaching a cover, be sure that the seal rubber is in place and that there is no foreign material present. If the cover is attached with the seal rubber out of place or if foreign material is stuck to the rubber, a proper seal will not be obtained.
- Do not use any screws to connect the cover other than the specified ones. The seal characteristics may be reduced.
- Make sure that foreign particles do not enter the head when removing the screws from the four corners to change the head position in any of the four directions.
- Use the following recommended countermeasures to prevent telegraphing when using adjustable or long levers.
 1. Make the rear edge of the dog smooth with an angle of 15° to 30° or make it in the shape of a quadratic curve.
 2. Design the circuit so that no error signal will be generated.

Production Discontinuation

Following the release of the D4N, production of the D4D-N was discontinued.

Date of Production Discontinuation

Production of the D4D-N Series was discontinued as of the end of March 2006.

Recommended Substitute Product

Sales of the D4N series commenced in January 2004.

Product Substitution

1. Dimensions

The D4D-N and D4N use the same mounting method, and mounting hole. The multi-contact structure and the extra 4 mm in length, however, are different.

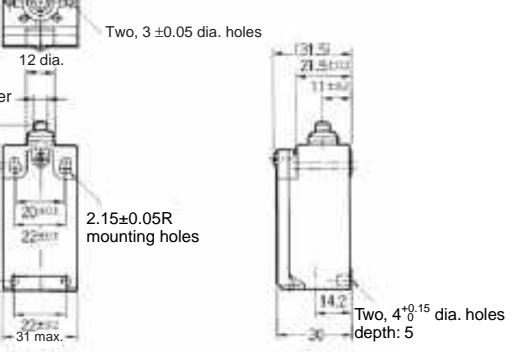
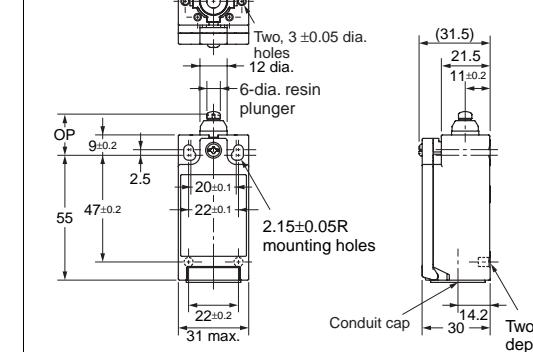
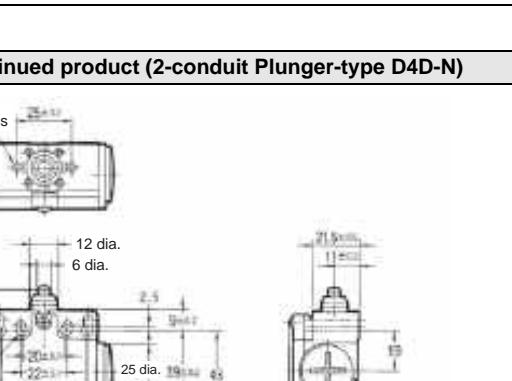
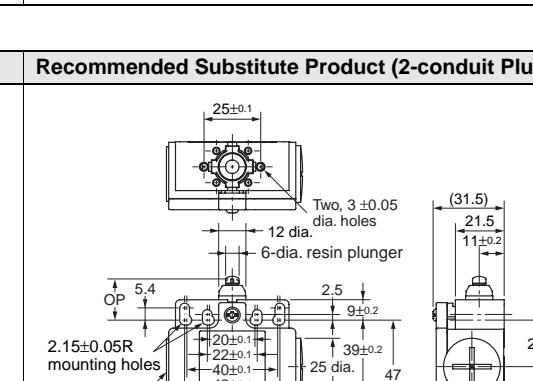
2. Terminal Numbers

For the 2-contact slow-action model, the terminals 21, 22, 23, and 24 on the D4D-N are 31, 32, 33, and 34 on the D4N.

3. Recommended Terminals

If the recommended terminals are not used, the Switch may not be compatible. Make sure that the Switch is compatible with the terminals.

Dimensions (Unit: mm)

Discontinued Product (1-conduit Plunger-type D4D-N)	Recommended Substitute Product (1-conduit Plunger-type D4N)
	
Discontinued product (2-conduit Plunger-type D4D-N)	Recommended Substitute Product (2-conduit Plunger-type D4N)
	

List of Recommended Substitute Products

■ : The actuator on the D4D-N is a non-safety type. The D4N is recommended for safety applications (form lock type). Be sure to mount it correctly.

■ : M screws are recommended to comply with European standards. Therefore, the M20 type is recommended as a substitute when the Pg13.5 conduit-type is not available in a D4N model.

Safety Limit Switches

Discontinued product	Recommended substitute product
D4D-1120N	D4N-1120
D4D-2120N	D4N-2120
D4D-3120N	D4N-3120
D4D-5120N	D4N-5120
D4D-6120N	D4N-6120
D4D-1122N	D4N-1122
D4D-2122N	D4N-2122
D4D-3122N	D4N-3122
D4D-5122N	D4N-5122
D4D-6122N	D4N-6122
D4D-1125N	D4N-1125
D4D-2125N	D4N-2125
D4D-3125N	D4N-3125
D4D-1131N	D4N-1131
D4D-2131N	D4N-2131
D4D-3131N	D4N-3131
D4D-5131N	D4N-5131
D4D-6131N	D4N-6131
D4D-1132N	D4N-1132
D4D-2132N	D4N-2132
D4D-3132N	D4N-3132
D4D-5132N	D4N-5132
D4D-6132N	D4N-6132
D4D-1162N	D4N-1162
D4D-2162N	D4N-2162
D4D-3162N	D4N-3162
D4D-5162N	D4N-5162
D4D-6162N	D4N-6162
D4D-1172N	D4N-1172
D4D-2172N	D4N-2172
D4D-3172N	D4N-3172
D4D-5172N	D4N-5172
D4D-6172N	D4N-6172
D4D-112HN	D4N-112H
D4D-212HN	D4N-212H
D4D-312HN	D4N-312H

Discontinued product	Recommended substitute product
D4D-1520N	D4N-1A20
D4D-2520N	D4N-2A20
D4D-3520N	D4N-3A20
D4D-5520N	D4N-5A20
D4D-6520N	D4N-6A20
D4D-1522N	D4N-1A22
D4D-2522N	D4N-2A22
D4D-3522N	D4N-3A22
D4D-5522N	D4N-5A22
D4D-6522N	D4N-6A22
D4D-1525N	D4N-1A25
D4D-2525N	D4N-2A25
D4D-3525N	D4N-3A25
D4D-1531N	D4N-1A31
D4D-2531N	D4N-2A31
D4D-3531N	D4N-3A31
D4D-5531N	D4N-5A31
D4D-6531N	D4N-6A31
D4D-1532N	D4N-1A32
D4D-2532N	D4N-2A32
D4D-3532N	D4N-3A32
D4D-5532N	D4N-5A32
D4D-6532N	D4N-6A32
D4D-1562N	D4N-1A62
D4D-2562N	D4N-2A62
D4D-3562N	D4N-3A62
D4D-5562N	D4N-5A62
D4D-6562N	D4N-6A62
D4D-1572N	D4N-1A72
D4D-2572N	D4N-2A72
D4D-3572N	D4N-3A72
D4D-5572N	D4N-5A72
D4D-6572N	D4N-6A72
D4D-152HN	D4N-1A2H
D4D-252HN	D4N-2A2H
D4D-352HN	D4N-3A2H

Discontinued product	Recommended substitute product
D4D-1A20N	D4N-1B20
D4D-2A20N	D4N-2B20
D4D-3A20N	D4N-3B20
D4D-5A20N	D4N-5B20
D4D-6A20N	D4N-6B20
D4D-1A22N	D4N-1B22
D4D-2A22N	D4N-2B22
D4D-3A22N	D4N-3B22
D4D-5A22N	D4N-5B22
D4D-6A22N	D4N-6B22
D4D-1A25N	D4N-1B25
D4D-2A25N	D4N-2B25
D4D-3A25N	D4N-3B25
D4D-1A31N	D4N-1B31
D4D-2A31N	D4N-2B31
D4D-3A31N	D4N-3B31
D4D-5A31N	D4N-5B31
D4D-6A31N	D4N-6B31
D4D-1A32N	D4N-1B32
D4D-2A32N	D4N-2B32
D4D-3A32N	D4N-3B32
D4D-5A32N	D4N-5B32
D4D-6A32N	D4N-6B32
D4D-1A62N	D4N-1B62
D4D-2A62N	D4N-2B62
D4D-3A62N	D4N-3B62
D4D-5A62N	D4N-5B62
D4D-6A62N	D4N-6B62
D4D-1A72N	D4N-1B72
D4D-2A72N	D4N-2B72
D4D-3A72N	D4N-3B72
D4D-5A72N	D4N-5B72
D4D-6A72N	D4N-6B72
D4D-1A2HN	D4N-1B2H
D4D-2A2HN	D4N-2B2H
D4D-3A2HN	D4N-3B2H

General-purpose Limit Switches

Discontinued product	Recommended substitute product
D4D-1121N	D4N-112G
D4D-2121N	D4N-212G
D4D-3121N	D4N-312G
D4D-5121N	D4N-512G
D4D-6121N	D4N-612G
D4D-1127N	D4N-112H
D4D-2127N	D4N-212H
D4D-3127N	D4N-312H
D4D-5127N	D4N-512H
D4D-6127N	D4N-612H
D4D-1180N	D4N-4180
D4D-2180N	D4N-2180
D4D-3180N	D4N-3180
D4D-5180N	D4N-8180
D4D-6180N	D4N-6180
D4D-1187N	D4N-4187
D4D-2187N	D4N-2187
D4D-3187N	D4N-3187
D4D-5187N	D4N-8187
D4D-6187N	D4N-6187

Discontinued product	Recommended substitute product
D4D-15REN	D4N-1ARE
D4D-25REN	D4N-2ARE
D4D-35REN	D4N-3ARE
D4D-55REN	D4N-5ARE
D4D-65REN	D4N-6ARE
D4D-15LEN	D4N-1ALE
D4D-25LEN	D4N-2ALE
D4D-35LEN	D4N-3ALE
D4D-55LEN	D4N-5ALE
D4D-65LEN	D4N-6ALE
D4D-1521N	D4N-1A2G
D4D-2521N	D4N-2A2G
D4D-3521N	D4N-3A2G
D4D-5521N	D4N-5A2G
D4D-6521N	D4N-6A2G
D4D-1527N	D4N-1A2H
D4D-2527N	D4N-2A2H
D4D-3527N	D4N-3A2H
D4D-5527N	D4N-5A2H
D4D-6527N	D4N-6A2H

Discontinued product	Recommended substitute product
D4D-1AREN	D4N-1BRE
D4D-2AREN	D4N-2BRE
D4D-3AREN	D4N-3BRE
D4D-5AREN	D4N-5BRE
D4D-6AREN	D4N-6BRE
D4D-1ALEN	D4N-1BLE
D4D-2ALEN	D4N-2BLE
D4D-3ALEN	D4N-3BLE
D4D-5ALEN	D4N-5BLE
D4D-6ALEN	D4N-6BLE
D4D-1A21N	D4N-1B2G
D4D-2A21N	D4N-2B2G
D4D-3A21N	D4N-3B2G
D4D-5A21N	D4N-5B2G
D4D-6A21N	D4N-6B2G
D4D-1A27N	D4N-1B2H
D4D-2A27N	D4N-2B2H
D4D-3A27N	D4N-3B2H
D4D-5A27N	D4N-5B2H
D4D-6A27N	D4N-6B2H
D4D-1A80N	D4N-4B80
D4D-2A80N	D4N-2B80
D4D-3A80N	D4N-3B80
D4D-5A80N	D4N-8B80
D4D-6A80N	D4N-6B80
D4D-1A87N	D4N-4B87
D4D-2A87N	D4N-2B87
D4D-3A87N	D4N-3B87
D4D-5A87N	D4N-8B87
D4D-6A87N	D4N-6B87

Read and Understand This Catalog

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

Warranty and Limitations of Liability

WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

LIMITATIONS OF LIABILITY

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

In no event shall the responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

Application Considerations

SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

Disclaimers

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

ERRORS AND OMISSIONS

The information in this document has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

2011.8

In the interest of product improvement, specifications are subject to change without notice.

OMRON Corporation
Industrial Automation Company

<http://www.ia.omron.com/>

(c)Copyright OMRON Corporation 2011 All Right Reserved.