Schneider Electric DPE18U7

Schneider Electric DPE18U7 Easy TeSys IEC Contactor User Manual

Model: DPE18U7

1. Introduction

This manual provides essential information for the safe and efficient use of the Schneider Electric DPE18U7 Easy TeSys IEC Contactor. This 3-pole contactor is designed for motor control applications up to 18A/690V AC-3, specifically rated for 7.5 HP at 480V. It features a 240V 50/60Hz AC coil and includes 1 normally open (NO) and 1 normally closed (NC) built-in auxiliary contacts. The compact design (45mm width) allows for versatile mounting options, including DIN-rail or screw fixing. The DPE18U7 is certified to multiple standards, including IEC, UL, and CSA.

Figure 1: Schneider Electric Easy TeSys Contactor, highlighting its robust design and quality.

2. Safety Information

WARNING: Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material. This product must be installed and wired in accordance with national and local electrical codes.

- Always disconnect power before installing, servicing, or removing the contactor.
- Ensure proper grounding to prevent electrical shock.
- Use appropriate personal protective equipment (PPE) when working with electrical systems.
- Verify all connections are secure and correctly wired before applying power.
- Do not operate the contactor if it appears damaged or malfunctioning.

3. Product Overview

The DPE18U7 Easy TeSys IEC Contactor is a reliable component for controlling electrical motors in various applications such as HVAC systems, pumps, and compressors. Its compact design and robust construction ensure stable and durable operation, protecting the internal components from dust and environmental elements.

Figure 2: Front view of the DPE18U7 Contactor, illustrating the main power terminals (1L1, 3L2, 5L3, 2T1, 4T2, 6T3), auxiliary contacts (13 NO, 14 NO), and coil terminals (A1, A2).

Figure 3: Side view of the DPE18U7 Contactor, highlighting its compact form factor and DIN-rail mounting capability.

Key Features:

- **3-Pole Contactor:** Suitable for three-phase motor control.
- **Coil Voltage:** 240V AC 50/60Hz for control circuit.
- **Auxiliary Contacts:** Integrated 1NO + 1NC contacts for signaling and interlocking.
- **Mounting:** Flexible DIN-rail mounting or screw fixing.
- **Compact Design:** 45mm width for space-saving installations.
- **Standards:** Conforms to IEC, UL, and CSA standards.

Figure 4: Detailed features and benefits of the Easy TeSys Contactor series.

4. Setup & Installation

Proper installation is crucial for the safe and reliable operation of the contactor. Ensure all power is disconnected before proceeding.

4.1 Mounting

The DPE18U7 contactor can be mounted on a standard 35mm DIN-rail or secured using screws. Choose a mounting location that is free from excessive vibration, moisture, and extreme temperatures.

- **DIN-Rail Mounting:** Snap the contactor onto the DIN-rail by aligning the top clip and pressing down firmly until it clicks into place.
- **Screw Fixing:** Use appropriate screws to secure the contactor through the designated mounting holes on the base.

4.2 Wiring Connections

The contactor utilizes screw clamp terminals for secure wiring. Refer to the terminal markings on the device for correct connections.

1. **Power Circuit (Main Contacts):** Connect the incoming three-phase power lines to terminals 1L1, 3L2, and 5L3. Connect the motor load lines to terminals 2T1, 4T2, and 6T3.
2. **Control Circuit (Coil):** Connect the 240V AC control voltage to terminals A1 and A2. Ensure the correct voltage is applied to the coil.
3. **Auxiliary Contacts:** The built-in 1NO (Normally Open) and 1NC (Normally Closed) auxiliary contacts can be used for control logic, signaling, or interlocking. Refer to the markings (e.g., 13 NO, 14 NO) for specific connections.

Ensure all wire insulation is stripped to the correct length and that wires are fully inserted into the terminals before tightening the screws. Over-tightening can damage terminals, while under-tightening can lead to loose connections and overheating.

4.3 Accessory Integration

The DPE18U7 is compatible with various Schneider Electric accessories to enhance functionality:

- **Overload Relay (e.g., DPER16):** Essential for motor protection against overcurrent. Mounts directly to the contactor.
- **Manual Motor Starter (e.g., GP2E16):** Provides motor protection and manual control.
- **Auxiliary Contact Block (e.g., DPEAN11):** For additional auxiliary contacts if needed.
- **Reversing Kit (e.g., LAD9R1):** For reversing motor direction.

Figure 5: Examples of compatible accessories: Thermal Overload Relay, Contactor, and Auxiliary Contact Block.

5. Operation

The DPE18U7 contactor operates by energizing its coil, which then closes the main power contacts, allowing current to flow to the connected motor. When the coil is de-energized, the contacts open, interrupting power to the motor.

- **Energizing the Coil:** Apply 240V AC to the coil terminals A1 and A2. This will cause the main contacts (1L1-2T1, 3L2-4T2, 5L3-6T3) to close, and the NO auxiliary contacts to close, while the NC auxiliary contacts open.
- **De-energizing the Coil:** Remove the 240V AC supply from the coil terminals A1 and A2. This will cause the main contacts to open, and the NO auxiliary contacts to open, while the NC auxiliary contacts close.

The auxiliary contacts can be integrated into control circuits for status indication, interlocking with other devices, or creating start/stop logic.

6. Maintenance

Regular maintenance helps ensure the longevity and reliable performance of your DPE18U7 contactor. Always disconnect power before performing any maintenance.

- **Visual Inspection:** Periodically inspect the contactor for any signs of physical damage, discoloration, or loose connections.
- **Cleaning:** Keep the contactor free from dust, dirt, and debris. Use a dry, soft cloth or compressed air for cleaning. Do not use liquid cleaners.
- **Terminal Tightness:** Check the tightness of all screw clamp terminals to ensure good electrical contact. Re-tighten if necessary, but do not over-tighten.
- **Contact Wear:** While the contacts are designed for long life, excessive arcing or frequent operation under heavy loads can cause wear. If significant pitting or erosion is observed, the contactor may need replacement.

7. Troubleshooting

If the contactor is not functioning as expected, perform the following checks:

Problem	Possible Cause	Solution
Contactor does not energize (contacts do not close)	No control voltage to coil (A1-A2) Incorrect coil voltage Damaged coil Loose wiring connections	Verify 240V AC supply to A1-A2 Ensure correct coil voltage is applied Test coil resistance; replace contactor if coil is open/shorted Check and tighten all control circuit wiring
Contactor hums loudly	Loose laminations Foreign object in magnet assembly Incorrect coil voltage	Replace contactor Inspect and remove any obstructions Verify correct coil voltage
Contactor contacts remain open or closed	Mechanical binding Welded contacts Damaged return spring	Inspect for obstructions; replace if binding persists Replace contactor Replace contactor
Overheating at terminals	Loose connections Overcurrent condition Undersized wiring	Tighten terminal screws Check motor load and protection devices Ensure wiring gauge is appropriate for current

8. Specifications

Detailed technical specifications for the Schneider Electric DPE18U7 Easy TeSys IEC Contactor:

Attribute	Value
Brand	Schneider Electric
Model	DPE18U7
Poles	3P (3 Normally Open)
Rated Operational Current (AC-3)	18 Amps at <= 690V
Motor Power (AC-3)	7.5 HP at 480V
Coil Voltage	240V AC 50/60Hz
Auxiliary Contacts	1 NO + 1 NC (Built-in)
Mounting Type	DIN-rail or Screw Fixing
Terminal Type	Screw Clamp Terminals
Dimensions (L x W x H)	3.03 x 1.77 x 3.39 inches (77 x 45 x 86 mm)
Weight	0.35 Kilograms (0.77 lbs)

Attribute	Value
Material	Plastic
Standards	IEC, UL, CSA

Choose the Contactor that best fits your needs

3-pole contactors conforming to UL and CSA Standards (North American market)

Standard power ratings of motors 50/60 Hz < 140°F (60°C)

Single-phase		Three-phase				Associated cable type 75°C-Cu	Continuous current	Reference	Weight
115V	230V 240V	200V 208V	230V 240V	460V 480V	575V 600V				
HP	HP	HP	HP	HP	HP		A		Lb
1/3	1	2	2	3	7.5	AWG 18...10	20	**DPE09 ••**	0.705
1/3	1	2	2	5	7.5	AWG 18...10	25	**DPE12 ••**	0.717
1/2	2	3	3	7.5	10	AWG 18...10	25	**DPE18 ••**	0.728
1	3	5	5	10	15	AWG 18...8	32	**DPE25 ••**	0.816
2	3	7.5	7.5	15	20	AWG 14...6	40	**DPE32 ••**	0.827
2	5	10	10	20	25	AWG 14...6	52	**DPE38 ••**	0.836

Replace •• with desired coil voltage:
For 24VDC use BL; For 240VAC use U7; For 120VAC use G7; For 24VAC use B7

Figure 6: Standard power ratings for 3-pole contactors conforming to UL and CSA standards.

9. Warranty & Support

The Schneider Electric DPE18U7 Easy TeSys IEC Contactor comes with an**18-month manufacturer's warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use and service.

For technical support, warranty claims, or additional product information, please visit the official Schneider Electric website or contact their customer service department. You can also find more information and products at the **Schneider Electric Store on Amazon**.