



PM20 Total Air Station

Best Practice Electrical Installation Guide - Revision 2

For electricians installing the [Pneumatix PM20500VSD](#) rotary screw air compressor

Model	Supply	Motor	Reference height
Pneumatix PM20500VSD	3 phase / 415 V	15 kW / 20 HP IE4 PM synchronous	1300 mm AFL typical

Purpose. This guide sets out the preferred field installation arrangement for the PM20 air station electrical supply, local isolation and dryer GPO. It is intended to give electricians a consistent installation standard before the machine is commissioned.

Important. This guide does not replace the product manual, equipment data plate, project electrical design, local authority requirements or AS/NZS 3000. Final cable sizing, protection, fault loop impedance, voltage drop and installation method must be verified by the installing licensed electrician.

1. Equipment summary

The PM20500VSD is a 15 kW / 20 HP IE4 PM synchronous motor, 3 phase / 415 V rotary screw air compressor with 2,100 LPM air delivery at 8 bar, 145 PSI maximum pressure, IP23 rating, 500 L air receiver, integrated air dryer and inline air filters. Overall dimensions are listed as 1,930 mm L x 800 mm W x 1,760 mm H, net weight 430 kg (432 kg packed for shipping).

The product data sheet notes that the unit is a fully featured air station with programmable Inovance variable speed drive, IE4 PM synchronous motor, integrated air end, tank mounted dryer and digital controller.

Air treatment fitted to this air station: a PMD2400 refrigerated dryer (2,400 L/min, 2-10 °C pressure dew point, R134a, 530 W at 230 V / 50 Hz) with PM20PREINLINE and PM20POSTINLINE inline filters.

2. Standard electrical installation arrangement

Item	Requirement / best practice	Completion check
Compressor supply	Provide a hard wired 3 phase supply to a local 3 phase isolator. The PM20 is supplied without a lead-in cable.	Isolator installed, labelled and accessible.
Circuit protection	Provide 32 A, 3 phase, D-curve MCBO for the compressor supply.	Protection installed and labelled at switchboard.
Cable / flex	Use 3C + E 4 mm ² circular flexible cable for the machine tail, from the local isolator to the compressor, as no neutral is required. Sizing of the supply to the isolator is by the installing electrician.	Cable size, derating and volt drop verified.
Cable entry	Use 32 mm gland for flexible cable entry to the machine / enclosure, to suit the nominated 4 mm ² circular flex.	Gland installed, tightened and provides strain relief.
Dryer auxiliary supply	Provide a dedicated 10 amp Double GPO for the rear of the dryer section. The PMD2400 dryer draws 530 W at 230 V, roughly 2.3 A.	10 amp Double GPO installed on RHS position, accessible for dryer connection.
Mounting height	Install both the 3 phase isolator and 10 A GPO at approximately 1300 mm AFL unless project conditions require otherwise.	Height checked from finished floor level.
Preferred location	3 phase isolator on LHS of unit. 10 A GPO on RHS of unit, adjacent to rear dryer connection area.	Locations suit access, service clearance and cable route.

Item	Requirement / best practice	Completion check
Neutral	The machine does not require a neutral for the compressor supply.	No neutral installed to the compressor supply.
Phase rotation	Check phase rotation and motor direction of rotation at commissioning, before the machine is put into service.	Rotation and motor direction checked and recorded.
Voltage quality	Voltage drop not to exceed $\pm 5\%$ of rated voltage. Phase to phase difference within $\pm 3\%$.	Supply quality verified at the machine.
Supply arrangement	Provide a separate power system for the compressor rather than sharing with other loads.	Circuit dedicated to the compressor.
Earthing	Ground the earth conductor to the nominated earth point.	Earth terminated and continuity verified.

3. Preferred site layout and clearances

Arrange the installation so that the electrician can isolate the compressor locally, access the dryer GPO without dismantling the unit, and maintain safe service access around the compressor cabinet and receiver. Do not route the flexible cable where it can rub against panels, sharp edges, hot components, moving parts or service covers.

Requirement	Detail
Minimum clearance	500 mm between the air compressor and other plant, equipment and walls, for ventilation and maintenance access.
Indoor only	The compressor has an IP23 rating only. It is not designed for outdoor use and must not be installed outdoors.
Ventilation	The machine draws atmospheric air for internal ventilation and rejects significant heat. The plant room must be well ventilated with a clean atmosphere.
Atmosphere	Do not locate the plant room near explosives, corrosives, toxic air, dust or other harmful substances.
Position	Locate as close as practical to the load centre to shorten pipework, reduce pressure loss and reduce power consumption.
Handling	Note the 430 kg unit weight. Protect surfaces when forklifting and insert forks into the compressor base. When craning, position slings to avoid crushing the cabinet.

4. Installation workmanship requirements

Area	Best practice requirement
Isolation	Use a suitable 3 phase isolator, preferably lockable, visible and accessible from the machine service position. Label as PM20 compressor or project nominated equipment tag.
Cable support	Support the flexible cable so its weight is not carried by the machine terminals or gland. Maintain bending radius and avoid sharp metal edges.
Armour bonding	Where armoured cable is used and the run exceeds 10 m, it is recommended that the armour is earthed separately.
Earthing	Terminate the protective earth to the nominated earth point. Remove paint only where required for bonding surfaces, use suitable washers and lugs, and verify earth continuity.
Terminations	Dress conductors neatly, avoid excessive exposed copper, torque terminals where specified and fit conductor identification markers.

Area	Best practice requirement
Starting under load	The machine must not be started under load, with pressure showing on the exhaust pressure gauge. Doing so risks damage to the electrical components from excessive starting current.
Segregation	Keep power wiring clear of control wiring, pneumatic hoses, vibration areas and serviceable components.
Documentation	Record circuit number, protection rating, test results and isolator/GPO location on the commissioning record.

5. Pre-energisation checklist

No.	Check	Initial / date
1	Confirm PM20500VSD data plate matches project supply and protection.	
2	Confirm 32 A 3 phase D-curve MCBO fitted, labelled and tested.	
3	Confirm 3C + E 4 mm ² circular flex machine tail installed, supported and protected.	
4	Confirm 32 mm gland fitted and cable strain relief is effective.	
5	Confirm 3 phase isolator installed on LHS at approx. 1300 mm AFL or agreed location.	
6	Confirm 10 A Double GPO installed on RHS/rear dryer side at approx. 1300 mm AFL or agreed location.	
7	Confirm compressor supply has no neutral connected unless separately instructed by the project engineer.	
8	Confirm protective earth terminated and earth continuity verified.	
9	Where armoured cable exceeds 10 m, confirm the armour is separately earthed.	
10	Confirm insulation resistance, polarity, phase sequence and fault loop impedance tests completed.	
11	Confirm supply voltage drop within $\pm 5\%$ and phase to phase difference within $\pm 3\%$.	
12	Confirm 500 mm clearance maintained around the unit.	
13	Confirm all covers, guards and service panels are reinstated before energisation.	
14	Confirm the machine is not under load before first start.	
15	Commission with competent person present and record phase rotation, motor direction and running current.	

6. Installer notes and deviations

Record any deviation from this best practice arrangement below, including reason, approver and final installed location.

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For licensed electricians only. Verify final installation against the data plate, the product manual and AS/NZS 3000.