Installation Instructions for PSG480B24RM BUFFER MODULE

READ INSTRUCTIONS BEFORE INSTALLING OR OPERATING THIS DEVICE. KEEP FOR FUTURE REFERENCE.

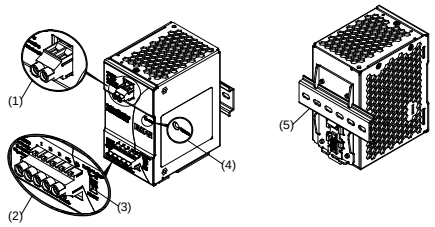

Figure 1

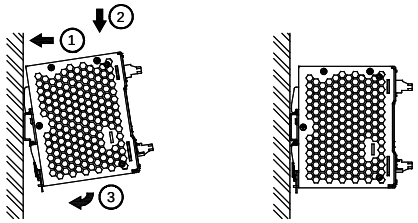

Figure 2

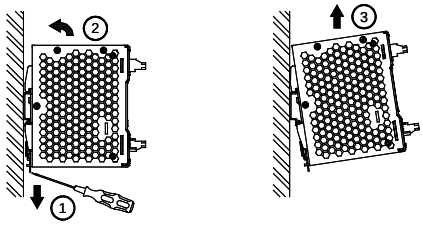

Figure 3

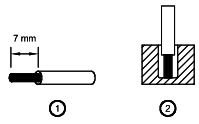

Figure 4

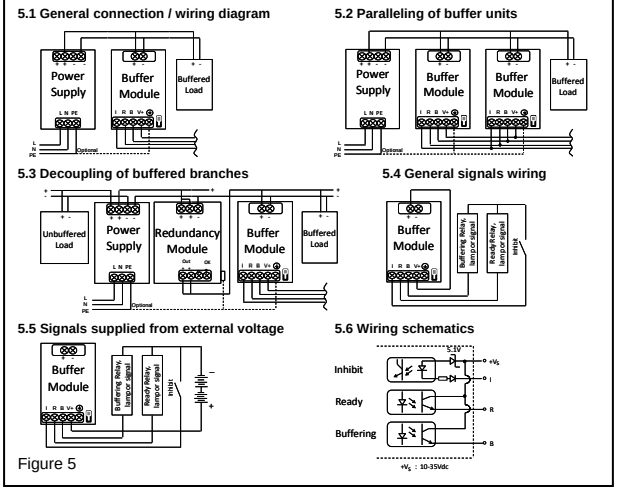

Figure 5

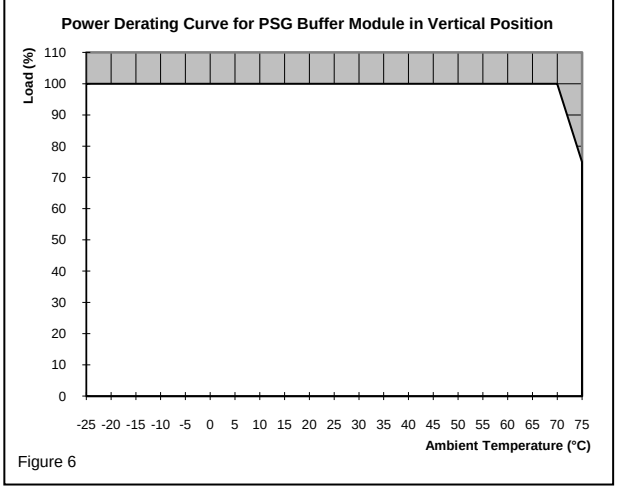

Figure 6

1. Safety instructions
   - Switch main power off before connecting or disconnecting the device. Risk of explosion!
   - To guarantee sufficient convection cooling, please keep a distance of 50 mm above and below the device as well as a lateral distance of 20 mm to other units.
   - Note that the enclosure of the device can become very hot depending on the ambient temperature and load of the power supply. Risk of burns!
   - The main power must be turned off before connecting or disconnecting wires to the terminals!
   - Do not introduce any objects into the unit!
   - Dangerous voltage present for at least 5 minutes after disconnecting all sources of power.
   - The unit is a built-in unit and must be installed in a cabinet or room (condensation free environment and indoor location) that is relatively free of conductive contaminants.
   - The unit must be installed in an IP54 enclosure or cabinet in the final installation.
   - Warning: Explosion Hazard – Substitution of components may impair suitability for Class I, Division 2.
   - Warning: Explosion Hazard – Do not disconnect equipment or adjust switch unless the power has been switched off or the area is known to be non-hazardous.
   - CAUTION: "FOR USE IN A CONTROLLED ENVIRONMENT".

2. Device description (Fig. 1)
   (1) Input / Output terminal block connector
   (2) Signal terminal block connector
   (3) Select switch (operation mode)
   (4) LED display status
   (5) Universal mounting rail system

3. Mounting (Fig. 2)
The unit can be mounting on 35 mm DIN rails in accordance with EN 60715. The device should be installed with input / output terminal block on the top.

Each device is delivered ready to install.
Snap on the DIN rail as shown in Fig. 2:
1. Tilt the unit slightly upwards and put it onto the DIN rail.
2. Push downwards until stopped.
3. Press against the bottom front side for locking.
4. Shake the unit slightly to ensure that it is secured.

4. Dismounting (Fig. 3)
To uninstall, pull or slide down the latch as shown in Fig. 3. Then, slide the unit in the opposite direction, release the latch and pull out the unit from the rail.

5. Connection
The terminal block connectors allow easy and fast wiring. The terminal block is IP20 compliant thus provides the user safety and protection from electrical shock hazards.
You can use flexible (stranded wire) or solid cables with cross sections:

Table	Stranded / Solid		Torque	
	(mm²)	(AWG)	(Kgf-cm)	(lb in)
(1)	3.3-5.3	12-10	7.3	6.3
(2)	0.21-5.3	24-10	7.3	6.3

To secure reliable and shock proof connections, the stripping length should be 7 mm (see Fig. 4 (1)).
Please ensure that wires are fully inserted into the connecting terminals as shown in Fig. 4 (2).
In accordance to EN 60950 / UL 60950, flexible cables require ferrules.
Use appropriate copper cables that are designed to sustain operating temperature of:
1. 60°C, 60°C / 75°C for USA
2. At least 90°C for Canada.

6. Typical application notes (Fig. 5)
1. General connection / wiring diagram
2. Paralleling of buffer units
3. Decoupling of buffered branches
4. General signals wiring
5. Signals supplied from external voltage
6. Wiring schematics

Risk of electrical shock, fire, personal injury or death.

(1) Turn power off before working on the device.
(2) Make sure of the wiring is correct by following all local and national codes.
(3) Do not modify or repair the unit.
(4) Use caution to prevent any foreign objects from entering into the housing.
(5) Do not use in wet locations.
(6) Do not use the unit in area where moisture or condensation can be expected.

7. Connectable power supplies
The buffer module is recommended to be connected with the following power supplies:

- PSG60E24SP
- PSG60E
- PSG120E
- PSG240E
- PSG480E
- PSG60E24RM
- PSG120E24RM
- PSG240E24RM
- PSG480E24RM

FOR TECHNICAL ASSISTANCE CALL 1 - 877 - ETN - CARE

TECHNICAL DATA FOR PSG480B24RM

Input (DC)	
Nominal input voltage	24 VDC
Voltage range	22.8-28.8 VDC
Max. input voltage	35 VDC
Max. signal input (inhibit)	35 V / 10 mA
Input current	Charging Mode: < 0.6 A Discharging Mode: 20 A Max.
Inrush current max. (cold start)	< 20 A
Buffer time	> 250 ms Min. @ 20A Load > 5 sec Min. @ 1A Load
Output (DC)	
Nominal output voltage	24 VDC typ. (depends on V_{in})
Adjustment range of the voltage	22-28 VDC (Switch = “Fix 22 V” buffering starts if terminal voltage falls below 22 V) (Factory Setting, Switch = “V_{in}-1 V” buffering starts if terminal voltage is decreased by > 1 V)
Max. output voltage	35 VDC
Output current	20 A Max.
Connection in parallel	Yes
Connection in series	No
Derating	> 70°C (5% / °C)
Component derating	V_{in} = 22.8-28.8 VDC, Max. Load - $T_{ambient}$ = 50°C - T_j < 85% of T_{jmax}
Residual ripple (20MHz) (at nominal values)	< 200 mVpp (Buffering mode at V_{in} nom, I_o max.)
Max. signal output	35 V / 10 mA
Protective device	TVS for signals
Short circuit	No damage
General Data	
Type of housing	Aluminum
Signals	Green LED Off = Unit is discharged or Vin < 22 VDC Green LED On = Unit is fully charged Green LED Flashes Slowly (1Hz) = Unit is charging Green LED Flashes Quickly (10Hz) = Unit is discharging
MTBF	> 800,000 hrs. @ Standby mode (buffer module in ready state)
Dimensions (L x W x H)	121 mm x 70 mm x 120.1 mm
Weight	0.76 kg
Connection method	Screw connection
Stripping length	7 mm
Operating temperature (surrounding air temperature)	-25°C to +75°C (Refer to Fig. 6)
Storage temperature	-25°C to +85°C
Humidity at +25°C, no condensation	< 95% RH
Vibration (non-operating)	10 to 500 Hz, 0.35 mm acc. 30 m/s², single amplitude (3 G max.) for 60 min. in each X, Y & Z directions, in acc. with IEC 68-2-6
Shock (in all directions)	30 G (300 m/s²) in all directions according to IEC 68-2-27
Altitude (operating)	2,500 Meters
Pollution degree	2
Certification and Standards	
Electrical equipments of machines	IEC 60204-1
Electronic equipment for use in electrical power installations	EN 50178 / IEC 62103
Safety entry low voltage	PELV (EN 60204), SELV (EN 60950)
Industrial control equipment	cULus listed to UL 508 and CSA C22.2 No.107.1-01, CSA to CSA C22.2 No.107.1-01 (File No. 250468)
Hazardous location	cCSAus to CSA C22.2 No.213-M1987, ANSI / ISA 12.12.01:2007 [Class I, Division 2, Group A,B,C,D T4, T_a = -25°C to +75°C (> +70°C derating)]
Protection against electric shock	DIN 57100-410
CE	In conformance with EMC directive 2004/108/EC and low voltage directive 2006/95/EC
Component Power Supply for general use	EN 61204-3
ITE	EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024
Industrial	EN 55011
Limitation of mains harmonic currents	EN 61000-3-2
	CE, cULus LISTED Ind. Cont. Eq., 250468 SP, CSP Class 1, Div. 2 Group A, B, C, D T4
RoHS Compliant	**Yes**
Safety and Protection	
Isolation voltage:	
Input & Output / PE	1.5 kVAC
Signal / PE	1.5 kVAC
Polarity protection	Yes
Protection degree	IP20
Safety class	Class I with PE connection