500 West Big Beaver
Troy, MI 48084
troymi.gov

CITY COUNCIL AGENDA ITEM

Date: August 20, 2024

To: Robert J. Bruner, Acting City Manager

From: Megan E. Schubert, Assistant City Manager
Rob Maleszyk, Chief Financial Officer
Dee Ann Irby, Controller
Kurt Bovensiep, Public Works Director
Dennis Trantham, Deputy Public Works Director
Brian Goul, Recreation Director
Emily Frontera, Purchasing Manager

Subject: Standard Purchasing Resolution 4: Oakland County Extended Purchasing Cooperative Contract – GFCI Protection for Pumps at the Troy Family Aquatic Center and Budget Amendment (Introduced by Brian Goul, Recreation Director)

History

- The Troy Family Aquatic Center opened in 1992 and is 32 years old.
- The City's Electrical Inspector visited the Aquatic Center in late June 2024 and recommended that the pool pumps receive Ground Fault Protection (GFI). While GFI Protection was not a requirement when the pool was constructed, recent changes to the National Electric Code includes this requirement.
- To comply with the current code, but more importantly, to ensure safety of our guests and staff, a proposal was requested from SHAW Service and Maintenance to provide the recommended GFI Protection to the pool equipment.
- A budget amendment will be required as this project was not budgeted.

Purchasing

- Pricing for the installation of the GFCI protection for the pumps at the Troy Family Aquatic Center has been secured from *SHAW Service and Maintenance of Southfield, MI* as detailed in the attached proposal SCOT240713001 through the Oakland County Extended Purchasing Contract #010460.
- City Council authorized participation in the Cooperative Purchasing Programs on February 5, 2024 (Resolution #2024-02-031-J-5).

Financial

Funds for this project were not budgeted. The estimated total cost of the project is $47,852 with a 20% contingency amount of $9,570 for a total not to exceed amount of $57,422. The acquisition will require a budget amendment in the amount of $57,422 to the Troy Family Aquatic Center General Equipment Capital Fund under Project Number 2025C0097 for the 2025 fiscal year. Expenditures will be charged to Account Number 587.789.978.010.

Recommendation

City Management recommends awarding a contract to furnish all equipment, material, and labor to install the GFCI protection to the pumps at the Troy Family Aquatic Center to *SHAW Service and Maintenance of Southfield, MI,* at prices contained in the attached proposal, as per the Oakland County Extended Purchasing Contract #010460, for an estimated total cost of $47,852 with a 20% contingency for a not to exceed total amount of $57,422.

It is also recommended that City Council approve a budget amendment to the Troy Family Aquatic Center General Equipment Capital Fund and Project Number 2025C0097 in the amount of $57,422.

Proposal & Scope of Work

Date: 7/13/2024 | **Proposal ID: SCOT240713001**

TO: DENNIS TRANTHAM
City of Troy
4695 Rochester Road
Troy, MI 48085

FROM: Eric J Peterson
PROJECT: TFAC GFCI for Pool Pumps

Shaw Service and Maintenance Contacts

Eric Peterson, Service Engineer	Direct (248) 228-2080 | (248)534-7602 | epeterson@shawsi.com
Dispatch	Direct (248) 228-2080 | service@shawsi.com
After Hours Emergency Number	(877) 370-7076
Service Email	service@shawsi.com

Included	*Excluded*		*Included*	*Excluded*	
☒	☐	*Sales & Use Tax*	☐	☒	*Payment & Performance Bonds*
☐	☒	*Electrical Permit Costs & Fees*	☐	☒	*Overtime Costs*
☐	☒	*Fire Division Inspection Fees*	☐	☒	*Temperature Controls*
☐	☒	*Building Permit Fees*	☐	☒	*Patching &/or repair of holes in walls or floors*

This Proposal is based upon Shaw Service & Maintenance's Standard Terms and Conditions (see Page 2) unless otherwise indicated below.

SCOPE OF WORK:

Furnish and install Stainless Steel Strut, Base Mounts and hardware for new racks near existing pool pumps
Furnish and install (11) Shock Block, GFCI Units (data sheets attached)
Where Possible, SHAW will rework existing pool pump circuits for connection to GFCI units at new location
- $2,750 contingency is built into our proposal for re-puling circuits if needed

Furnish and install wire, seal tight and other materials necessary for new connections between GFCI units and pool pumps
Test for functionality and restore power to pool pumps

MATERIAL: $36,230.00
EQUIPMENT: $252.00
LABOR: $11,370.00
TOTAL OFFERING PRICE: $47,852.00

EXCLUSIONS & ASSUMPTIONS:

All work to be performed during normal working hours Monday through Friday.
Proposal offered as Not To Exceed at Oakland County Contract Rates
If cutover should be requested to take place after hours M-Friday please alot an additional $1,750.00 for OT costs

Eric J Peterson

Shaw Service & Maintenance

Standard Terms & Conditions

1. Payment terms are monthly progress payments net 30 days due.
2. The offering price is valid for 30 days. Shaw Service & Maintenance reserves the right to extend this term without notice.
3. Subcontract terms and conditions are subject to review and approval prior to award of a subcontract to Shaw Service & Maintenance.
4. Terms are pending approval by Shaw Service & Maintenance credit manager.
5. This Proposal is based on the schedule and time durations presented at time of bid. A change in schedule shall constitute a change in scope of work.
6. All equipment furnished is F.O.B. shipping points with freight allowed to jobsite.
7. The price includes a warranty as specified in the Bid Documents. No other warranty is expressed or implied.

22100 Telegraph
Southfield, MI 48033
Phone: (248) 228-2000
Fax: (248) 228-2080

Bulletin Spreadsheet
Sound & Comm/Limited Energy
Jul 2018 - Jun 2019

PROJECT:	CITY OF TROY	**SHAW PROJECT #:**	SCOT240713001
QUOTE FOR:	Dennis Trantham	**SHAW MMS RFC #:**	
DATED:	7/13/2024	**SHAW REVISION #:**	0
		SHAW QUOTE DATE:	7/13/2024
DESCRIPTION:	PER PROVIDED SCOPE- TFAC GFCI for Pool Pumps		
PLANS ISSUED:	n/a		
SPECS. ISSUED:	"		
SKETCHES ISSUED:	"		
QTY ELEC/TECH DWGS ISSUED:	0		

MATERIAL	**GFCI**				$21,525	
	Stainless Steel Strut, Hardware, Post Bases, Etc			0	$5,680	
	Wire, Sealtight, Misc			0	$1,966	
					$0	
	MARKUP(INCLUDING USE TAX)	15%			$4,376	
	ESCALATION(CONTINGENCY)	8%			$2,684	
	MATERIAL TOTAL					$36,230
DIRECT INSTALLATION LABOR COST - PER ATTACHED SHEETS						
0	**HOURS @ Straight**	$ 99.00	**ELECTRICIAN**		$0	
88	**HOURS @ "**	$ 122.00	**SERVICE ELECTRICIAN**		$10,736	
0	**HOURS @ "**				$0	
0	**HOURS @ Time & 1/2**	$ 129.00	**ELECTRICIAN**		$0	
0	**HOURS @ "**	$ 153.00	**SERVICE ELECTRICIAN**		$0	
0	**HOURS @ "**				$0	
0	**HOURS @ Double**	$ 162.00	**ELECTRICIAN**		$0	
0	**HOURS @ "**	$ 189.00	**SERVICE ELECTRICIAN**		$0	
0	**HOURS @ "**				$0	
SUPERVISION - 8% OF DIRECT LABOR HOURS (DETAILING, LOGISTICS) or PER ATTACHED SHEETS AS DIRECT LABOR						
7.9	**HOURS @ Straight**	$ 80.00	**GENERAL/SOLE FOREMAN**		$634	
0	**HOURS @ "**				$0	
0	**HOURS @ Time & 1/2**	$ 108.00	**GENERAL/SOLE FOREMAN**		$0	
0	**HOURS @ "**				$0	
0	**HOURS @ Double**	$ 136.00	**GENERAL/SOLE FOREMAN**		$0	
0	**HOURS @ "**				$0	
		0%	**INCREASE RATES FOR NON DAY SHIFT/FUTURE RATES**		$0	
	LABOR TOTAL					$11,370
DJE EQUIPMENT - LARGE OR SPECIAL TOOLING						
	EXCAVATOR/TRENCHING EQUIPMENT				$0	
	RIGGING / HOISTING / LULL / FORKLIFT				$0	
	FLUKE CABLE TESTER				$60	
	CIRCUIT TRACER				$0	
	CORING				$0	
	POWER LOGGER				$0	
	PERMIT				$0	
					$0	
ENGINEERING / DOCUMENT MAINTENANCE						
2	**HOURS**	$ 96.00	**SERVICE ENGINEER/FIELD DETAIL/SURVEY**		$192	
0	**HOURS**	$ 80.00	**BIM COORDINATOR/PLOTS/DWGS**		$0	
0	**HOURS**	$ 65.00	**ADMINISTRATIVE ASSISTANT**		$0	
DIRECT JOB EXPENSES / SMALL TOOLS / SAFETY / CONSUMMABLES / FIRST AID						
	AS PERCENT @	0.0%	**OF LABOR ABOVE TOTAL**		$0	
	or AS ITEMIZED ON THE DJE CHECKLIST SHEET (Page 2 of 2)				$0	
	DIRECT JOB EXPENSES TOTAL					$252
						$47,852
		0%				$0
SUBCONTRACTORS						
					$0	
	X				$0	
	x				$0	
	x				$0	
	SUBCONTRACTOR TOTAL					$0
	FEE ON SUBS @	5%				$0
PLM BOND / INSURANCE COSTS						$0
TOTAL PRICE FOR THIS QUOTATION						**$47,852**

Service Electric Supply, Inc.

QUOTE NUMBER: 1769555

Quoted Date: 07/09/2024
Printed Date: 07/09/2024

TO: **SHAW ELECTRIC**

ATTN: Jarrod Muirhead
SHAW ELECTRIC
22100 TELEGRAPH
SOUTHFIELD, MI 48033
PHONE: (248) 228-2000 FAX: (248) 228-2919

PO Number:

Sales Person: Darrick Mowers

Item	Qty	Mfg	Part Number	Description	Price	UM	Ext. Price
1				**STAINLESS STEEL- 10 WEEK LEAD FROM ARO**			
2	1	LF	LF**SB50322020**	304 SS SHOCK BLOCK EGFPD 480V 32A	$0.000	E	$0.00
3	1	LF	LF**SB50602020**	304 SS SHOCK BLOCK EGFPD 480V 60A	$0.000	E	$0.00
4				**POLY CARBONATE- 5 WEEK LEAD**			
5	5	LF	LF**SB50322010**	LFSE SB5032-201-0 SHOCK BLOCK CLASS	$1,875.000	E	$9,375.00
6	6	LF	LF**SB50602010**	LFSE SB5060-201-0 SHOCK BLOCK CLASS	$2,025.000	E	$12,150.00

Grand Total: $21,525.00

Please do not hesitate to call with any questions.

Best Regards,
Darrick Mowers
Phone: (734) 229-9100
Fax: (734) 229-9101

Shock Block - GFCI / SPGFCI / EGFPD

SB5000 Series

Industrial Shock Block for Personnel Protection

*For Polycarbonate 32 A and 60 A only

Description

Special-Purpose Ground-Fault Circuit Interrupter (SPGFCI), Class C and Class D

The Industrial Shock Block® SB5000 series is a personnel protection device designed to meet the requirements for special-purpose GFCIs defined by UL 943C. This standard outlines GFCI classes specifically designed for use in industrial facilities. Class C GFCIs are intended to be used on three-phase systems where the line-to-line voltage is 480 V or less with a trip level of 20 mA, while Class D GFCIs are intended to be used on 600 V systems. The SB5000 includes DFT harmonic filtering, an automatic self-test feature, and is compliant to the UL 1998 Software in Programmable Components standard.

Ground-Fault Circuit Interrupter (GFCI), Class A

The SB5000 is available as a 208 or 240 V Class A GFCI, allowing commercial kitchens, vehicle service centers, and other non-dwelling applications to meet NEC 210.8(B) for their three-phase loads up to 100 A.

Equipment Ground-Fault Protective Device (EGFPD)

The SB5000 is also available with adjustable protection settings as an EGFPD. The EGFPD models can be set to trip at 6 mA or from 10–100 mA in increments of 10 mA. This offers more flexibility since GFCI and SPGFCI devices are not permitted to have an adjustable trip level.

Ratings and Models

The SB5000 is available for three-phase voltages from 208 to 600 V with a maximum full load current up to 100 A. The power system can be either solidly or high-resistance grounded, and the load must be single-phase or three-phase as long as the load does not require a neutral. The standard enclosure is IP 69K/NEMA 4X and outdoor rated, suitable for all industrial environments including high temperature washdown used in food production applications. The 32 and 60A models are also available in a hygienic stainless steel enclosure, with a 10 degree sloped top and FDA compliant silicone gasket, designed to facilitate sanitation in food processing facilities and the like.

Grounding Monitor / Interrupter (GMI)

The SB5000 also monitors the equipment grounding connection between the Shock Block and load. This is a required feature for Class C and D GFCI devices and is recommended for Class A GFCI and EGFPD devices. If the ground-return path is broken, the SB5000 will trip and provide an alarm by changing the state of the alarm contacts. This monitoring circuit requires an extra (pilot) wire between the SB5000 and the load. At the load, the pilot wire is connected to a termination device. The other end of the termination device is connected to the equipment ground (typically the enclosure).

Revised: 04/16/2024

Features & Benefits

FEATURES	BENEFITS
UL 943 inverse time trip curve	Inverse time detection circuit protects people while also reducing the probability of nuisance tripping
DFT (Discrete Fourier Transform) filtering algorithm	Eliminates nuisance trips due to harmonics
Minimum trip time <20 msec	Reduces the risk of ventricular fibrillation for leakage current of 250 mA and above
Fixed 6 mA (UL 943) or 20 mA (UL 943C) trip level	UL Listed GFCI and Special-Purpose GFCI personnel protection for industrial and commercial loads up to 100 A (GFCI versions)
Selectable trip levels 6–100 mA	Settings below 20 mA provide extra safety. The settings above 20 mA can reduce nuisance tripping on systems with high-leakage current (EGFPD versions)
Two-stage ground monitor with Zener termination that meets UL 943C, CSA M421	Proactively protects from shock by tripping if continuity of ground wire between SB5000 and equipment is compromised
Flexible configuration	Selectable manual reset or auto-reset for brownout, power-up, and ground monitor interruptions to fit plant safety protocols
Conformal coating	Equipped with conformally coated circuit boards to protect against corrosion and moisture
Auxiliary contact	Alerts your SCADA system if the SB5000 is energized or tripped
Automatic self-test	The SB5000 will continuously test itself and will trip if there is an internal failure
GFCI Class A, C, D, and EGFPD options in one series	Simplified planning and operator familiarity for multiple applications/requirements

Applications

- For applications where people, electrical equipment, and water are present
- Agriculture
- Amusement parks
- Commercial kitchens
- Construction
- Food and beverage
- Horticultural lighting
- Maintenance shops
- Manufacturing
- Mining
- Oil and gas
- Pools, spas, fountains, water features
- Vehicle service centers
- Water/wastewater

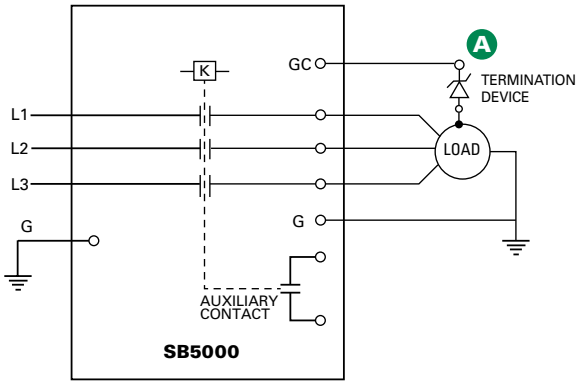
Specifications

Voltage Rating	208 V, 240 V, 480 V, 600 V
Current Rating	32, 60, 80, or 100 A
System Type	Three-phase, 3-wire (no neutral), 60 Hz; Single-phase, 2-wire (no neutral), 60 Hz; Single-phase, 3-wire (with neutral), 60 Hz for EGFPD versions only
Short-Circuit Current Rating	10,000 A (for SB5032 and SB5060); 50,000A (for SB5080 and SB5100)
Trip Level Settings	Fixed at 6 mA (Class A models); Fixed at 20 mA (Class C/D models) Selectable 6, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100 mA (EGFPD models)
Trip Time Setting	Inverse time curve according to UL 943
Ground Monitoring Circuit	Selectable short or Zener termination; Fail-safe; CSA M421 compliant
Enclosure	Polycarbonate: IP 69K and NEMA 4X (Outdoor), Polycarbonate, Lockable Stainless Steel: IP 69K and NEMA 4X, AISI 304 steel, FDA compliant blue silicone gasket Stainless Steel: Class II, Division 2, Groups E, F, G for Hazardous Locations and T6 Temperature Code
Operating Temperature	-35 °C (-31 °F) to 40 °C (104 °F), up to 66 °C (151 °F) with derating
Dimensions	**H** 285.6 mm (11.25 in.); **W** 244.4 mm (9.62 in.); **D** 119.6 mm (4.71 in.) – for Polycarbonatate 32 A and 60 A **H** 358.2 mm (14.10 in.); **W** 250.5 mm (9.86 in.); **D** 170 mm (6.69 in.) – for Stainless Steel 32 A and 60 A **H** 383.4 mm (15.09 in.); **W** 327.1 mm (12.88 in.); **D** 137.4 mm (5.5 in.) – for Polycarbonate 80 A and 100 A

Accessories

- **1N5339B Termination Device:** Axial-lead ground-check termination, included with SB5000 series
- **SE-TA6 Termination Assembly:** Optional termination assembly with terminals and mounting holes
- **SE-TA6-SM Stud-Mount Termination Assembly:** Optional ground-check termination for submersible pumps
- **SE-TA6ASF-WL Series Termination Assembly:** Compact 12 W ground-check termination assembly
- **AC5000-MNT-01:** Stainless steel mounting hardware, 1" hygienic spacer with FDA compliant gasket, threaded, (kit of 4)
- **AC5000-MNT-02:** Stainless steel mounting brackets, flat, (kit of 4)
- **AC5000-MNT-03:** Stainless steel mounting brackets, 1" standoff/offset, (kit of 4)

Simplified Circuit Diagram



Certification & Compliance

UL Listed (all models)	UL1998
CSA (SB5032, SB5060 polycarbonate models)	LR 53428
cULus Listed	Class A GFCI (UL 943) E330856 EGFPD (UL 943/UL 1053) E359574
UL Listed	Class C, D SPGFCI (UL 943C) E352763

Ordering Information

Polycarbonate Enclosure

*GFCI (UL 943 CLASS A)		
6mA Fixed Trip Level		
Load Rating (A)	Voltage (V)	Ordering Number
32	208	SB5032-021-0
60	208	SB5060-021-0
80	208	SB5080-021-0
80	240	SB5080-121-0
100	208	SB5100-021-0
100	240	SB5100-121-0

SPGFCI (UL 943C CLASS D)		
20mA Fixed Trip Level		
Load Rating (A)	Voltage (V)	Ordering Number
32	600	SB5032-301-0
60	600	SB5060-301-0
80	600	SB5080-301-0
100	600	SB5100-301-0

* Most Popular Models

Ordering Information (Continued)

Polycarbonate Enclosure (Continued)

SPGFCI (UL 943C CLASS C)		
20mA Fixed Trip Level		
Load Rating (A)	Voltage (V)	Ordering Number
32	208	SB5032-001-0
32	480	SB5032-201-0
60	208	SB5060-001-0
60	480	SB5060-201-0
80	208	SB5080-001-0
80	240	SB5080-101-0
80	480	SB5080-201-0
100	208	SB5100-001-0
100	240	SB5100-101-0
100	480	SB5100-201-0

EGFPD (UL 943/1053 SELECTABLE)		
Adjustable Trip Level 6, 10-100mA		
Load Rating (A)	Voltage (V)	Ordering Number
32	208	SB5032-011-0
32	480	SB5032-211-0
32	600	SB5032-311-0
60	208	SB5060-011-0
60	480	SB5060-211-0
60	600	SB5060-311-0
80	208	SB5080-011-0
80	240	SB5080-111-0
80	480	SB5080-211-0
80	600	SB5080-311-0
100	208	SB5100-011-0
100	240	SB5100-111-0
100	480	SB5100-211-0
100	600	SB5100-311-0

Stainless Steel Enclosure

GFCI (UL 943 CLASS A)		
6mA Fixed Trip Level		
Load Rating (A)	Voltage (V)	Ordering Number
32	208	SB5032-022-0
60	208	SB5060-022-0

SPGFCI (UL 943C CLASS C)		
20mA Fixed Trip Level		
Load Rating (A)	Voltage (V)	Ordering Number
32	208	SB5032-002-0
32	480	SB5032-202-0
60	208	SB5060-002-0
60	480	SB5060-202-0

SPGFCI (UL 943C CLASS D)		
20mA Fixed Trip Level		
Load Rating (A)	Voltage (V)	Ordering Number
32	600	SB5032-302-0
60	600	SB5060-302-0

EGFPD (UL 943/1053 SELECTABLE)		
Adjustable Trip Level 6, 10-100mA		
Load Rating (A)	Voltage (V)	Ordering Number
32	208	SB5032-012-0
32	480	SB5032-212-0
32	600	SB5032-312-0
60	208	SB5060-012-0
60	480	SB5060-212-0
60	600	SB5060-312-0

Stainless Steel, Class II, Division 2 Enclosure

GFCI (UL 943 CLASS A)		
6mA Fixed Trip Level		
Load Rating (A)	Voltage (V)	Ordering Number
32	208	SB5032-023-0
60	208	SB5060-023-0

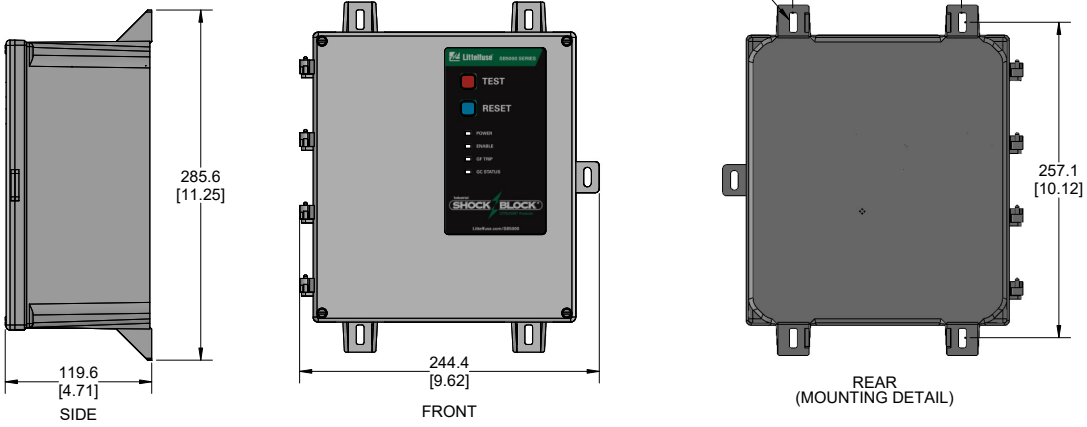
SPGFCI (UL 943C CLASS C)		
20mA Fixed Trip Level		
Load Rating (A)	Voltage (V)	Ordering Number
32	208	SB5032-003-0
32	480	SB5032-203-0
60	208	SB5060-003-0
60	480	SB5060-203-0

SPGFCI (UL 943C CLASS D)		
20mA Fixed Trip Level		
Load Rating (A)	Voltage (V)	Ordering Number
32	600	SB5032-303-0
60	600	SB5060-303-0

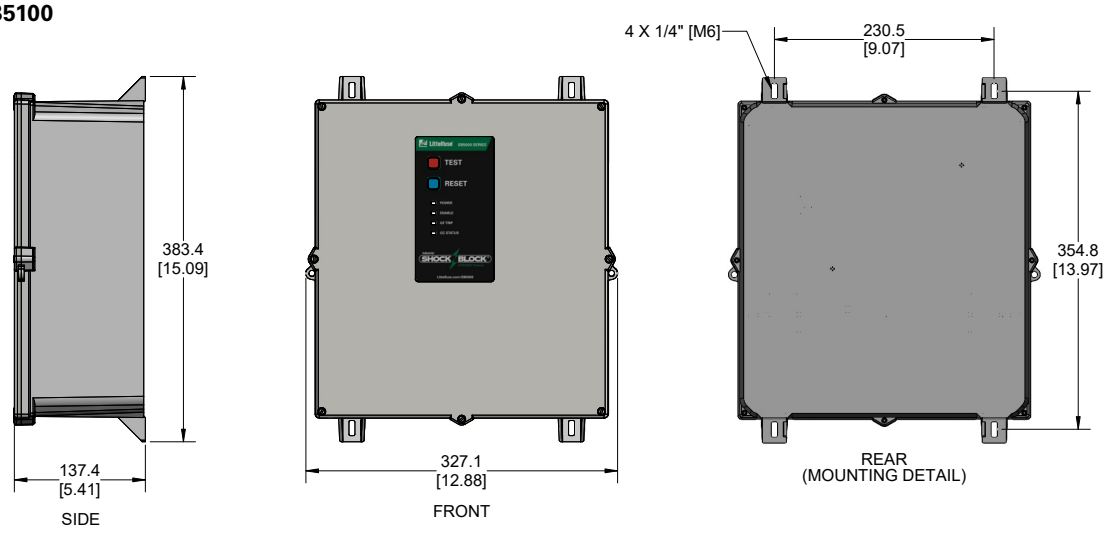
EGFPD (UL 943/1053 SELECTABLE)		
Adjustable Trip Level 6, 10-100mA		
Load Rating (A)	Voltage (V)	Ordering Number
32	208	SB5032-013-0
32	480	SB5032-213-0
32	600	SB5032-313-0
60	208	SB5060-013-0
60	480	SB5060-213-0
60	600	SB5060-313-0

Dimensions Millimeters [inches]

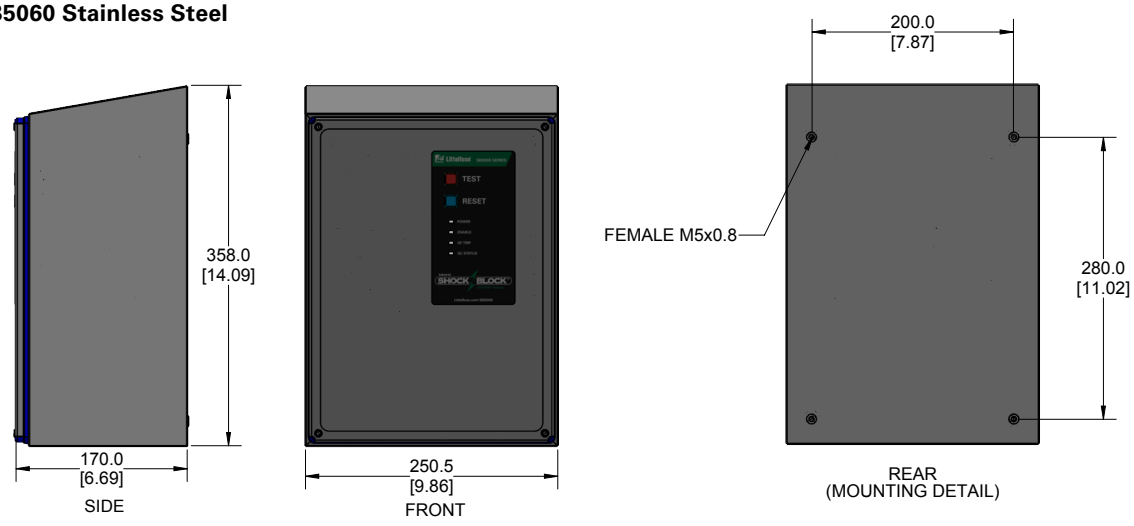
SB5060



SB5100



SB5060 Stainless Steel



Connection Diagram

The SB5000 is installed in-line between incoming power or existing overcurrent protection device and the load.

Revised: 04/16/2024