



SHOMAL Engineering & Manufacturing Co.

OPERATING INSTRUCTION

GTB SERIES OF GRP ENCLOSURES



WI-28(PCD-P-01)/00



**THIS GUIDE SHOULD BE READ CAREFULLY BEFORE INSTALLATION.
INCORRECT INSTALLATION AND USE OF THE ENCLOSURES CAN INVALIDATE
THE GUARANTEE!**

GENERAL DESCRIPTION:

The Ex empty enclosure may be used for fitting electrical and mechanical components. The enclosure consists of high-quality Glass Reinforced Polyester with graphite added . Lid and base are screwed together with stainless steel captive screws.

A groove and tongue system with inserted sealing cord between the lid and base assures the high protection class IP 66 as per IEC 60529. The enclosure is mounted through the screw channels lying outside the sealing space. The enclosures conform to the relevant standards IEC/EN 60079-0, IEC/EN 60079-7 and IEC/EN 60079-31

TECHNICAL DATA:

Material : GRP

Color : Black (Similar to RAL 9011)

Lid screw: Stainless steel , Captive screw

Tightening torque: M4 1-2 Nm , M6 2-3 Nm.

Service temperature : - 50 °C to + 100 °C

Mechanical strength : Accordance with 60079-0 , Impact energy 7 NM

Protection class : EN 60529, IP 66

Compliance standards : IEC/EN 60079-0 , IEC/EN 60079-7 and IEC/EN 60079-31.

Process control system : ISO 9001:2008 , IEC 80079-34 : 2011

Internal/External earthing : 4 mm² TO 50 mm²

Tightening torque for external: For M4 earth screw 3-4 Nm, for M6 earth screw 4-6 Nm

EXPLOSION PROTECTION:

 II 2 GD IP66

Ex eb IIC Gb

Ex tb IIIC Db

TUV 17 ATEX 8140 U

IECEX TUR 17.0060 X



SAFETY INSTRUCTIONS:

The supplied Ex empty enclosures are U-certified components which serve as a basis for completely certified devices. All universally valid rules and the other binding directives relating to workplace safety, accident prevention and environmental protection must be adhered. Mashinsazi Shomal Pirooz boxes are not certified to Zone 0 and Zone 20 .No Installation should be carried out under live conditions.

Once Installed do not dismantle except for occasional inspection. Mashinsazi Shomal Pirooz enclosures shall only be used where temperature at the point of entry is between (- 50 °C to +100 °C)

Enclosures shall be mounted horizontally over the wall or on the horizontal surfaces, All cable entry devices and blanking elements must be certified for protection types "e" and "tb" and must have a minimum IP 66 rating. All unused device openings must be fitted with a certified close-up plug of protection types "e" and "tb" and must have a minimum IP 66 rating The suitability of all entries should be considered in the end use application.

INSTALLATIONS:

The Ex empty enclosures are suitable for accommodating components certified for the Ex areas, such as terminals, switches, cable glands, measuring instruments, control equipment and display units etc. When processing the enclosures, attention must be paid to ensuring that there is suitable minimum spacing between individual boreholes and from the sealing edge of the enclosure so that the enclosure with the fittings will be able to withstand an impact test. The minimum spacing depends on the geometrical dimensions of the built-in components; a longer lever will require an increase in the minimum spacing and accordingly must be determined specifically.

In the case of enclosures that have to be set up outside, it may be necessary to take measures to ensure that operation is in accordance with the intended use. This would include, for example, roofs as protection against rain or outer housings with an adequate protection class. These Enclosures should not be used in any application other than those mention here or in our data sheets, unless Mashinsazi Shomal Pirooz states in writing that the product is suitable for such application. Mashinsazi Shomal Pirooz can take no responsibility for any damage, injury or other consequential loss caused where the enclosures are not installed or used according to the instructions.

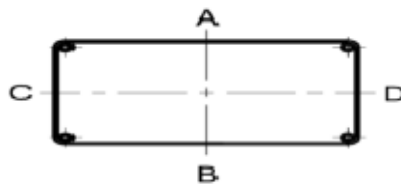
ENCLOSURES PART AND MODEL NUMBERS TABLE:

S.no	SEMC Part Number	Original Model Number
1	GTB 01	Ex-GJB-807555-U
2	GTB 02	Ex-GJB-1107555-U
3	GTB 03	Ex-GJB-12212090-U
4	GTB 04	Ex-GJB-1607555-U
5	GTB 05	Ex-GJB-1607575-U
6	GTB 06	Ex-GJB-16016090-U
7	GTB 07	Ex-GJB-1907555-U
8	GTB 08	Ex-GJB-22012090-U
9	GTB 09	Ex-GJB-255250120-U
10	GTB 10	Ex-GJB-26016090-U
11	GTB 11	Ex-GJB-36016090-U
12	GTB 12	Ex-GJB-400250120-U
13	GTB 13	Ex-GJB-400405120-U

CABLE ENTRY:

The minimum distance of the drillings is to be kept in accordance with the table, drilling space for cable glands and stopping plugs. All cable entry devices and blanking elements must be certified for protection types "e" and "tb" and must have a minimum IP 66 rating. All unused device openings must be fitted with a certified close-up plug of protection types "e" and "tb" and must have a minimum IP 66/IP67/ IP68 rating. The suitability of all entries should be considered in the end use application.

For entries with parallel threads, cable glands, stop plugs must be should be used along with additional seal or gasket.



GTB 01 (Size 80x 75x 55)													
Opening Detail (Size)	Equivalent plain entries(mm)	No of Hole on side A/B	Min. Distance between opening for Side A/B (mm)	No. of holes on side C/D	Min. Distance between the opening for Side C/D (mm)	Opening Detail (Size) PG	Equivalent plain entries (mm)	No of Holes on side A/B	Min. Distance between the opening for Side A/B (mm)	No. of holes on side C/D	Min. Distance between the opening for Side C/D (mm)	Min. Distance of last opening from the enclosure end on side A/B (mm)	Min. Distance of last opening from the enclosure end on side C/D (mm)
M12	12	2	8	1	8	Pg.7	12.5	2	8.5	1	8.5	23	26
M16	16	2	9	1	9	Pg.9	15.2	2	9	1	9	24	26.5
M20	20	1	8	1	8	Pg.11	18.6	2	8.5	1	8.5	23	26
M25	25					Pg.13.5	20.4	1	8.5	1	8.5	27	28
M32	32					Pg.16	22.5						
M40	40					Pg.21	28.3						
M50	50					Pg.29	37						
M63	63					Pg.36	47						
-						Pg.42	54						
-						Pg.48	59.3						

GTB 02 (Size 110x 75 x 55)													
Opening Detail (Size)	Equivalent plain entries(mm)	No of Hole on side A/B	Min. Distance between opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Opening Detail (Size) PG	Equivalent plain entries (mm)	No of Hole on side A/B	Min. Distance between the opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Min. Distance of last opening from the enclosure end on side A/B (mm)	Min. Distance of last opening from the enclosure end on side C/D (mm)
M12	12	3	8	1	8	Pg.7	12.5	3	8.5	1	8.5	23	26
M16	16	2	9	1	9	Pg.9	15.2	2	9	1	9	24	26.5
M20	20	2	8	1	8	Pg.11	18.6	2	8.5	1	8.5	23	26
M25	25					Pg.13.5	20.4	1	8.5	1	8.5	27	28
M32	32					Pg.16	22.5						
M40	40					Pg.21	28.3						
M50	50					Pg.29	37						
M63	63					Pg.36	47						
-						Pg.42	54						
-						Pg.48	59.3						

GTB 03 (SIZE 122 x 120 x 90mm)													
Opening Detail (Size)	Equivalent plain entries(mm)	No of Hole on side A/B	Min. Distance between opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Opening Detail (Size) PG	Equivalent plain entries (mm)	No of Hole on side A/B	Min. Distance between the opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Min. Distance of last opening from the enclosure end on side A/B (mm)	Min. Distance of last opening from the enclosure end on side C/D (mm)
M12	12	8	8	4	8	Pg.7	12.5	6	8.5	3	8.5	24	31
M16	16	4	9	3	9	Pg.9	15.2	5	9	2	9	25	31.5
M20	20	3	8	2	8	Pg.11	18.6	3	8.5	2	8.5	24	31
M25	25	2	12	1	12	Pg.13.5	20.4	2	8.5	2	8.5	28	33
M32	32	1	16	1	16	Pg.16	22.5	2	10	1	10	32	35
M40	40					Pg.21	28.3	1	13	1	13	36	37
M50	50					Pg.29	37	1	17			37	37.5
M63	63					Pg.36	47						
-						Pg.42	54						
-						Pg.48	59.3						

GTB 04 (SIZE 122 x 120 x 90mm)													
Opening Detail (Size)	Equivalent plain entries(mm)	No of Hole on side A/B	Min. Distance between opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Opening Detail (Size) PG	Equivalent plain entries (mm)	No of Hole on side A/B	Min. Distance between the opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Min. Distance of last opening from the enclosure end on side A/B (mm)	Min. Distance of last opening from the enclosure end on side C/D (mm)
M12	12	5	8	1	8	Pg.7	12.5	5	8.5	1	8.5	23	26
M16	16	4	9	1	9	Pg.9	15.2	4	9	1	9	24	26.5
M20	20	3	8	1	8	Pg.11	18.6	3	8.5	1	8.5	23	26
M25	25					Pg.13.5	20.4	2	8.5	1	8.5	27	28
M32	32					Pg.16	22.5						
M40	40					Pg.21	28.3						
M50	50					Pg.29	37						
M63	63					Pg.36	47						
						Pg.42	54						
						Pg.48	59.3						

GTB 05 (SIZE 160x 75 x 75mm)													
Opening Detail (Size)	Equivalent plain entries(mm)	No of Hole on side A/B	Min. Distance between opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Opening Detail (Size) PG	Equivalent plain entries (mm)	No of Hole on side A/B	Min. Distance between the opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Min. Distance of last opening from the enclosure end on side A/B (mm)	Min. Distance of last opening from the enclosure end on side C/D (mm)
M12	12	8	8	1	8	Pg.7	12.5	8	8.5	1	8.5	23	26
M16	16	6	9	1	9	Pg.9	15.2	6	9	1	9	24	26.5
M20	20	5	8	1	8	Pg.11	18.6	4	8.5	1	8.5	23	26
M25	25	2	12	1	12	Pg.13.5	20.4	3	8.5	1	8.5	27	28
M32	32	1	16			Pg.16	22.5	2	10	1	10	31	30
M40	40					Pg.21	28.3	1	13			35	32
M50	50					Pg.29	37						
M63	63					Pg.36	47						
						Pg.42	54						
						Pg.48	59.3						

GTB 06 (SIZE 160 x 160 x 90mm)													
Opening Detail (Size)	Equivalent plain entries(mm)	No of Hole on side A/B	Min. Distance between opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Opening Detail (Size) Pg	Equivalent plain entries (mm)	No of Hole on side A/B	Min. Distance between the opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Min. Distance of last opening from the enclosure end on side A/B (mm)	Min. Distance of last opening from the enclosure end on side C/D (mm)
M12	12	11	8	6	8	Pg.7	12.5	11	8.5	6	8.5	28	39
M16	16	8	9	4	9	Pg.9	15.2	10	9	4	9	29	39.5
M20	20	6	8	4	8	Pg.11	18.6	6	8.5	4	8.5	28	39
M25	25	4	12	3	12	Pg.13.5	20.4	6	8.5	3	8.5	32	41
M32	32	2	16	1	16	Pg.16	22.5	4	10	3	10	36	43
M40	40	1	20	1	20	Pg.21	28.3	3	13	2	13	40	45
M50	50					Pg.29	37	1	17	1	17	41	45.5
M63	63					Pg.36	47	1	20			41	45.5
						Pg.42	54						
						Pg.48	59.3						

GTB 07 (SIZE 190x 75 x 55mm)													
Opening Detail (Size)	Equivalent plain entries(mm)	No of Hole on side A/B	Min. Distance between opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Opening Detail (Size) Pg	Equivalent plain entries (mm)	No of Hole on side A/B	Min. Distance between the opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Min. Distance of last opening from the enclosure end on side A/B (mm)	Min. Distance of last opening from the enclosure end on side C/D (mm)
M12	12	6	8	1	8	Pg.7	12.5	5	8.5	1	8.5	23	26
M16	16	4	9	1	9	Pg.9	15.2	4	9	1	9	24	26.5
M20	20	3	8	1	8	Pg.11	18.6	4	8.5	1	8.5	23	26
M25	25					Pg.13.5	20.4	3	8.5	1	8.5	27	28
M32	32					Pg.16	22.5						
M40	40					Pg.21	28.3						
M50	50					Pg.29	37						
M63	63					Pg.36	47						
						Pg.42	54						
						Pg.48	59.3						

GTB 08 (SIZE 220 x 120 x 90mm)													
Opening Detail (Size)	Equivalent plain entries(mm)	No of Hole on side A/B	Min. Distance between opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Opening Detail (Size) PG	Equivalent plain entries (mm)	No of Hole on side A/B	Min. Distance between the opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Min. Distance of last opening from the enclosure end on side A/B (mm)	Min. Distance of last opening from the enclosure end on side C/D (mm)
M12	12	14	8	4	8	Pg.7	12.5	14	8.5	3	8.5	24	31
M16	16	12	9	3	9	Pg.9	15.2	12	9	2	9	25	31.5
M20	20	8	8	2	8	Pg.11	18.6	8	8.5	2	8.5	24	31
M25	25	5	12	1	12	Pg.13.5	20.4	6	8.5	2	8.5	28	33
M32	32	3	16	1	16	Pg.16	22.5	5	10	1	10	32	35
M40	40	3	20	-	20	Pg.21	28.3	3	13	1	13	36	37
M50	50					Pg.29	37	2	17			37	37.5
M63	63					Pg.36	47						
						Pg.42	54						
						Pg.48	59.3						

GTB 09 (SIZE 255 x 250 x 120 mm)													
Opening Detail (Size)	Equivalent plain entries(mm)	No of Hole on side A/B	Min. Distance between opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Opening Detail (Size) PG	Equivalent plain entries (mm)	No of Hole on side A/B	Min. Distance between the opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Min. Distance of last opening from the enclosure end on side A/B (mm)	Min. Distance of last opening from the enclosure end on side C/D (mm)
M12	12	30	8	28	8	Pg.7	12.5	28	8.5	30	8.5	28	39
M16	16	24	9	22	9	Pg.9	15.2	24	9	22	9	29	39.5
M20	20	16	8	12	8	Pg.11	18.6	16	8.5	12	8.5	28	39
M25	25	10	12	9	12	Pg.13.5	20.4	14	8.5	10	8.5	32	41
M32	32	7	16	6	16	Pg.16	22.5	10	10	10	10	36	43
M40	40	3	20	3	20	Pg.21	28.3	6	13	8	13	40	45
M50	50	2	21	1	21	Pg.29	37	4	17	4	17	41	45.5
M63	63					Pg.36	47	2	20	3	20	41	45.5
						Pg.42	54						
						Pg.48	59.3						

GTB 10 (SIZE 260 x 160 x 90 mm)													
Opening Detail (Size)	Equivalent plain entries(mm)	No of Hole on side A/B	Min. Distance between opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Opening Detail (Size) PG	Equivalent plain entries (mm)	No of Hole on side A/B	Min. Distance between the opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Min. Distance of last opening from the enclosure end on side A/B (mm)	Min. Distance of last opening from the enclosure end on side C/D (mm)
M12	12	20	8	6	8	Pg.7	12.5	20	8.5	6	8.5	28	39
M16	16	16	9	4	9	Pg.9	15.2	16	9	4	9	29	39.5
M20	20	10	8	4	8	Pg.11	18.6	12	8.5	4	8.5	28	39
M25	25	8	12	3	12	Pg.13.5	20.4	10	8.5	3	8.5	32	41
M32	32	4	16	1	16	Pg.16	22.5	8	10	3	10	36	43
M40	40	3	20	1	20	Pg.21	28.3	4	13	2	13	40	45
M50	50					Pg.29	37	3	17	1	17	41	45.5
M63	63					Pg.36	47	2	20			41	45.5
						Pg.42	54						
						Pg.48	59.3						

GTB 11 (SIZE 360 x 160 x 90 mm)													
Opening Detail (Size)	Equivalent plain entries(mm)	No of Hole on side A/B	Min. Distance between opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Opening Detail (Size) PG	Equivalent plain entries (mm)	No of Hole on side A/B	Min. Distance between the opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Min. Distance of last opening from the enclosure end on side A/B (mm)	Min. Distance of last opening from the enclosure end on side C/D (mm)
M12	12	24	8	6	8	Pg.7	12.5	22	8.5	6	8.5	28	39
M16	16	20	9	4	9	Pg.9	15.2	20	9	4	9	29	39.5
M20	20	18	8	4	8	Pg.11	18.6	18	8.5	4	8.5	28	39
M25	25	12	12	3	12	Pg.13.5	20.4	16	8.5	3	8.5	32	41
M32	32	6	16	1	16	Pg.16	22.5	10	10	3	10	36	43
M40	40	4	20	1	20	Pg.21	28.3	7	13	2	13	40	45
M50	50	3	21			Pg.29	37	5	17	1	17	41	45.5
M63	63					Pg.36	47	3	20				
						Pg.42	54						
						Pg.48	59.3						

GTB 12 (SIZE 400 x 250 x 120 mm)													
Opening Detail (Size)	Equivalent plain entries(mm)	No of Hole on side A/B	Min. Distance between opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Opening Detail (Size) PG	Equivalent plain entries (mm)	No of Hole on side A/B	Min. Distance between the opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Min. Distance of last opening from the enclosure end on side A/B (mm)	Min. Distance of last opening from the enclosure end on side C/D (mm)
M12	12	42	8	28	8	Pg.7	12.5	40	8.5	30	8.5	28	39
M16	16	30	9	22	9	Pg.9	15.2	30	9	22	9	29	39.5
M20	20	20	8	12	8	Pg.11	18.6	24	8.5	12	8.5	28	39
M25	25	16	12	9	12	Pg.13.5	20.4	18	8.5	10	8.5	32	41
M32	32	10	16	9	16	Pg.16	22.5	12	10	10	10	36	43
M40	40	5	20	3	20	Pg.21	28.3	10	13	8	13	40	45
M50	50	4	21	3	21	Pg.29	37	7	17	4	17	41	45.5
M63	63					Pg.36	47	4	20	3	20	41	45.5
						Pg.42	54	3	21	2	21	38	44
						Pg.48	59.3						

GTB 13 (SIZE 400 x 405 x 120 mm)													
Opening Detail (Size)	Equivalent plain entries(mm)	No of Hole on side A/B	Min. Distance between opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Opening Detail (Size) PG	Equivalent plain entries (mm)	No of Hole on side A/B	Min. Distance between the opening for Side A/B (mm)	No. of hole on side C/D	Min. Distance between the opening for Side C/D (mm)	Min. Distance of last opening from the enclosure end on side A/B (mm)	Min. Distance of last opening from the enclosure end on side C/D (mm)
M12	12	42	8	36	8	Pg.7	12.5	40	8.5	36	8.5	28	39
M16	16	30	9	30	9	Pg.9	15.2	30	9	28	9	29	39.5
M20	20	20	8	18	8	Pg.11	18.6	24	8.5	20	8.5	28	39
M25	25	16	12	14	12	Pg.13.5	20.4	18	8.5	16	8.5	32	41
M32	32	10	16	8	16	Pg.16	22.5	12	10	10	10	36	43
M40	40	5	20	5	20	Pg.21	28.3	10	13	8	13	40	45
M50	50	4	21	4	21	Pg.29	37	7	17	6	17	41	45.5
M63	63					Pg.36	47	4	20	4	20	41	45.5
						Pg.42	54	3	21	3	21	38	44
						Pg.48	59.3						

COMMISSIONING:

Each electric apparatus for a potentially explosive area must be selected in accordance with the conditions set down for the individual type of installation. The apparatus may only be used if it is undamaged and clean. Electric plants must be examined by a qualified specialist before first commissioning and regularly at specific intervals. Enclosures shall be mounted horizontally over the wall or on the horizontal surfaces.

OPERATING, MAINTENANCE AND FAILURE RECTIFICATION:

The operator of an electric plant in a potentially explosive environment must keep the operating equipment in an orderly condition, operate it correctly, monitor it and do the required maintenance and repairs (EN 60079-14).

Maintenance and failure rectification work may only be carried out by qualified electricians. If the type of protection is affected, only original parts should be used for replacement (e.g. lid sealing). Conformity with all applicable laws and guidelines must be ensured prior to re-commissioning. All applicable safety instructions must be observed prior to the implementation of any maintenance and/or failure rectification works.

ACCESSORIES, SPARE PARTS:

For accessories and spare parts, see Mashinsazi Shomal Pirooz catalogue.

BOLT SIZE:

SEMC Part Number	Original Model Number	Bolt Size
GTB 01	Ex-GJB-807555-U	M4
GTB 02	Ex-GJB-1107555-U	M4
GTB 03	Ex-GJB-12212090-U	M6
GTB 04	Ex-GJB-1607555-U	M4
GTB 05	Ex-GJB-1607575-U	M4
GTB 06	Ex-GJB-16016090-U	M6
GTB 07	Ex-GJB-1907555-U	M4
GTB 08	Ex-GJB-22012090-U	M6
GTB 09	Ex-GJB-255250120-U	M6
GTB 10	Ex-GJB-26016090-U	M6
GTB 11	Ex-GJB-36016090-U	M6
GTB 12	Ex-GJB-400250120-U	M6
GTB 13	Ex-GJB-400405120-U	M6

LIST OF STANDARDS APPLICABLE:

EN 60079-0: 2012+A11:2013, IEC 60079-0: 2011

EN 60079-7: 2015, IEC 60079-7: 2015

EN 60079-31: 2014, IEC 60079-31: 2013

EN 60529: 2013, IEC 60529: 1989 AMD1: 1999, AMD2: 2013

And directive 2014/34/EU: equipment and protective systems intended for use in potentially explosive atmospheres.

DISPOSAL / RECYCLING:

When the apparatus is disposed of, the respective national regulations on waste disposal will have to be observed.