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REPORT

on

COMPONENT CONNECTORS FOR USE IN DATA, SIGNAL, CONTROL AND POWER APPLICATIONS

Wieland Electric GmbH.
Bamberg, Germany

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DESCRIPTION

PRODUCT COVERED: Connectors, Types ST 28/10 BS.

Connectors, Types ST18, followed by /3, /4, /5, /6, /7, followed by B, B1, S or S2, may be followed by SM or LM, may be followed by additional suffixes, 99.400.8510.0 and 99.401.8510.0.

Connectors, Types ST18, followed by /3, followed by suffix BR, SR, B1RS or SRS, with or without /1, may be followed by SM or LM, may be followed by additional suffixes.

Connectors, Types ST18, followed by /3 or /5, followed by VT or ZK, followed by 1/1 through 7/1 inclusive, may be followed by V, V1 and/or SL, may be followed by Suffix R, F or TP, may be followed by SM or LM, may be followed by /A.

Connectors, Types ST18, /3, /4 or /5, followed by B or S, followed by F or F1, may be followed by SM or LM, may be followed by additional suffixes.

Connectors, rewirable Types GST18I, followed by 2 through 5 inclusive, followed by S, F or C1, followed by B1, B2, S1 or S2, may be followed by Z, may be followed by V, H, O, A, R1, R2, R or F, may be followed by SM, followed by additional suffixes.

Connectors, rewirable, Types GST15I, followed by 2 through 5 inclusive, followed by SB1, SDB1, SS1 or SDS1, may be followed by ZR1 or ZF, followed by additional suffixes.

Connectors for chassis mounting, Types GST18I, followed by 3 through 5 inclusive, followed by SB1, FB2, SS1 or FS2, followed by R or RE, may be followed by V, followed by additional suffixes.

Connectors for chassis mounting, Types GST15I, followed by 2 through 5 inclusive, followed by SB1, SDB1, SS1 or SDS1, followed by R or U, followed by additional suffixes.

Connectors for PCB mounting, Types GST15i, followed by 2 through 5 inclusive, followed by LB1 or LS1, followed by V, H or S, followed by additional suffixes denoting color.

Connectors (distribution blocks or couplers), Types GST18I, followed by 3 to 5 inclusive, followed by V, V3 or Z, followed by 1P1, 2P1, 3P1, 5P1, 7P1 or 7A1, may be followed by T or U, may be followed by F or R, may be followed by V, followed by additional suffixes.

Connectors, Types GST18I, followed by 3 through 5 inclusive, followed by LB1 or LS1, followed by H or V, may be followed by V, may be followed by additional suffixes.

Connectors, Types GST18I, followed by 3, followed by K1, may be followed by B, S or BS, followed by 1.5, followed by SW, WS, RT or GR.

Connectors, Types GST18I, followed by 3F, may be followed by B2, S2, followed by R followed by N, followed by SW or additional suffixes denoting color.

Connectors, Type GST15I, followed by 2, 3, or 5, followed by V, V3, VA, VN, VO, or Z, followed by 1, 2, 3, or 5, followed by A or P, followed by 1, may be followed by H, h, T, or U, may be followed by 1 through 3 inclusive, may be followed by additional suffixes

GENERAL:

Type ST 28/10 BS is a ten-pole device consisting of two mating halves which interconnect by means of plug and socket connectors. Part ST 28/10 B is the socket portion; Part ST 29/10 S the plug portion. Type ST 28/10 BS provides screw-tightening pressure wire connectors for termination of copper wires of the sizes specified, and is intended for general industrial applications, field and factory-wiring.

Type ST18 is a multipole connector with terminal cover. Male and female mating halves designated by Suffixes B or B1 (male) and S (female) interconnect by means of plug and socket connectors. Termination is accomplished by spring cage clamp, screw terminal or pwb solder pin.

Type ST18 provides single or dual-wire screw-tightening pressure wire connectors for termination of copper wires of the sizes specified, and is intended for general industrial applications, field and factory-wiring.

Type 99.400.8510.0 and Type 99.401.8510.0 are multipole connectors consisting of two mating halves which interconnect by means of plug and socket connectors. Type 99.400.8510.0 is the male plug and Type 99.401.8510.0 is the mating socket, terminal block. Both provide screw-tightening pressure wire connectors for termination of copper wires of the range specified, and are intended for general industrial applications, field and factory wiring.

Type GST18 is similar to ST18 except the housing body is enclosed over the contacts.

Types GST18I, followed by 3, followed by K1. are factory wired connectors assembled on AWM style cable 2587 only.

Types GST15I are factory and field wired connectors assembled on AWM style cable 2464 only.

Connectors for PCB mounting, Types GST15i are only Factory wiring.

Ratings -

Type	Wire Range, AWG (Cu-Sol/Str.)	Max. Amperes	Max. Voltage	Torque, lb-in.
ST 28/10	No. 12-22	20 +	600	8
ST18, GST18	No. 12-22	20	600	8
GST18I3S S1 ZR1 or ZR2 f/b SW or WS, GST18I3S B1 ZR1 or ZR2 f/b SW or WS	No. 14 No. 16 No. 18 No. 20 No. 22	20 16 9 6 5	600	4.4
GST18I2S B1 ZR, GST18I2S S1 ZF	No. 12-22	20	600	8
99.400.8510.0	No. 12-22	20	600	8
99.401.8510.0	No. 12-22	20	600	8
ST18, GST18I (provided with Suffix BR, SR, F, FB2, FS2)	No. 12-16 Solid	20	600	N/A
GST18I3F B2 R N SW, GST18I3F S2 R N SW	No. 12-16 Solid	20	600	N/A
GST18I FB2 GST18I FS2	No. 18 Stranded	9	600	N/A
ST18, GST18I (provided with Suffixes T or U, VT or ZK, LB1 or LS1, F or F1, V or V3, or Z)	N/A	20	600	N/A
GST18I3K1..	No. 16 Stranded	16	600	N/A
GST15I..	14 sol/str	16	600	2.65 - 4.4
GST15I..	16 sol/str	16	600	2.65 - 4.4
GST15I..	18 sol/str	9	600	2.65 - 4.4
GST15I..	20 sol/str	6	600	2.65 - 4.4
GST15I, followed by 2, 3, or 5, followed by V, V3, VA, VN, VO, or Z, followed by 1, 2, 3, or 5, followed by A or P, followed by 1, may be followed by H, h, T, or U, may be followed by 1 through 3 inclusive, may be followed by additional suffixes	14	16	600	N/A
Types GST15i (provided with suffixes LB1 or LS1)	----	16	600	N/A
+ - Limited ampere rating at 600 V. Reference spacings.				

ENGINEERING CONSIDERATIONS (NOT FOR UL REPRESENTATIVE USE):

Use - For use only with products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

Conditions of Acceptability -

1. The mounting suitability shall be determined in the end use.

2. The insulating bodies are molded of QMFZ2, material, as specified in the following tabulation. The material temperature rating shall not be exceeded in the end-product evaluation.

Series	Designation	Manufacturer	Max Temp., °C
GST18, ST18	[redacted]	[redacted]	105 (generic)
GST18I3S S1 ZR1 or ZR2 GST18I3S B1 ZR1 or ZR2	[redacted]	[redacted]	65 (generic) 65 (generic)
GST18I2S B1 ZR, GST18I2S S1 ZF	[redacted]	[redacted]	95
ST28/10BS	[redacted]	[redacted]	105 (generic)
99.400.8510.0, 99.401.8510.0	[redacted]	[redacted]	105 (generic)
GST18I3K1..	[redacted]	[redacted]	80
*GST15I	[redacted]	[redacted]	80 80
*GST15i (provided with suffixes LB1 or LS1)	[redacted]	[redacted]	80 80
GST15I, followed by 2, 3, or 5, followed by V, V3, VA, VN, VO, or Z, followed by 1, 2, 3, or 5, followed by A or P, followed by 1, may be followed by H, h, T, or U, may be followed by 1 through 3 inclusive, may be followed by additional suffixes	[redacted]	[redacted]	110

Series	Insulating Material (#)	Flame Class	RTI Elec		Max Operating Temp, °C	Min Thick, mm
GST18 SM, ST18 SM	A	V-2	130		130	0.67
GST18I3S S1 ZR1 or ZR2 SM, GST18I3S B1 ZR1 or ZR2 SM		V-2	130		130	0.40
GST18I2S B1 ZR SM, GST18I2S S1 ZF SM		V-2	130		130	0.90
GST18 LM, ST18 LM	B	V-2	130		130	0.67
GST18I3F B2 R N SW, GST18I3F S2 R N SW	B	V-2	130		130	0.6

(#) - Code for Insulating Body Material.

A. [redacted]

1. Dielectric strength (kV/mm): -
2. CTI: 2

B. [redacted]

1. Dielectric strength (kV/mm): 13
2. CTI: 1

3. These devices may be suitable for other applications providing spacings, heat rise, insulating materials, etc are acceptable in the end use.

* 4. The terminal covers have not been investigated as an enclosure, nor evaluated for strain relief. Suitability shall be determined in the end use product/application. Consideration shall be given to Strain Relief testing and acceptance of cable types and terminal cover material suitability in the end-use applications.

4A. The models GST18I3K1 are intended for use with R/C (AVLV2/8) AWM style 2587 only and have been subjected to strain relief testing using a force of 134N for one minute with acceptable results. Other style cables or cords shall be tested.

4B. The models GST15I, followed by 2 through 5 inclusive, followed by SB1, SDB1, SS1 or SDS1, may be followed by ZR1, followed by additional suffixes, are intended for use with R/C (AVLV2/8) AWM style 2464 only and have been subjected to strain relief testing using a force of 89 N for one minute with acceptable results. Other style cables or cords shall be investigated in the end-use according to the end-product standard.

5. The cage clamps for Types GST18, ST18 (when provided with Suffixes BR or SR) are acceptable for field-wiring applications in accordance with field-wiring requirements in UL 486E, the Standard for Equipment Wiring Terminals, Second Edition.

6. The screw type wire terminals for Types GST18I3S S1 ZR1 (male), GST18I3S B1 ZR1 (female), GST18I3S S1 ZR2 (male), GST18I3S B1 ZR2 (female), GST18I2S B1 ZR and GST18I2S S1 ZF and are acceptable for field-wiring applications in accordance with field-wiring requirements in UL 486E, the Standard for Equipment Wiring Terminals, Third Edition, dated December 7, 1994.

6A. The screw-type pressure wiring terminals for types GST15I followed by SS1 ZR1 or SB1 ZR1 are suitable for field-wiring and have been evaluated in accordance with 486E, the Standard for Equipment Wiring Terminals, Third Edition, dated December 7, 1994.

*7. Based upon the electrical RTI of the insulating material, the operating temperature of model GST18I3S S1 ZR1 (male), GST18I3S B1 ZR1 (female), GST18I3S S1 ZR2 (male), and GST18I3S B1 ZR2 (female) should not exceed ~~65°C when [redacted] is employed as the insulating material and~~ 95°C when [redacted] is employed as the insulating material.

*8. Model GST18I3S S1 ZR1 (male), GST18I3S B1 ZR1 (female), GST18I3S S1 ZR2 (male) and GST18I3S B1 ZR2 (female) have been subjected to the Temperature test with the rated currents and maximum temperature rises values tabulated below.

Current, A	AWG	Maximum Temperature Rise, °C	Ambient Temp., °C
20	14-12	23.7	22.2
16	16	25.4	22.2
9	18	12.2	26.0
6	20	9.0	26.6
5	22	7.5	26.0

8A. Model GST15I5 SS1 (male) and GST15I5 SB1 (female) has been subjected to the Temperature test with the rated currents and maximum temperature rises values tabulated below.

Current, A	AWG	Maximum Temperature Rise, °C	Ambient Temp., °C
16	16 str	38.8	24.4
9	18 str	19.2	22.4
6	20 str	13.3	23.7

8B. Model GST15i5 LS1 (male) and GST15i5 LB1 (female) have been subjected to the Temperature test with the rated currents and maximum temperature rises values tabulated below.

Current, A	Maximum Temperature Rise, °C	Ambient Temp., °C
16	53.3	24.5

9. GST18I2S B1 ZR (female) and GST18I2S S1 ZF (male) have been subjected to a 105°C Mold Stress Test. The max. operating temperature shall not exceed 95°C for these models.

10. Connectors of Cat. No. GST18I FB2 (female) and GST18I FS2 (male) have been approved for ferrules connected to 18 AWG str. wire, only. The maximum current shall not exceed 9 A.

11. The max. operating temperature of Cat. No. GST18I3K1. shall not exceed 80°C.

12. The factory assembled female contacts for model GST18I3K1. have been investigated for the following wire ranges and maximum tensile forces, representing the male pins for the same model.

Part No. (Female contact)		Wire Range, AWG		Tensile Force, N
02.122.2621.0		16 str		89

13. These devices have not been tested for interrupting the flow of current by connecting or disconnecting the mating connector. These devices shall be used only where they will not interrupt the flow of current.