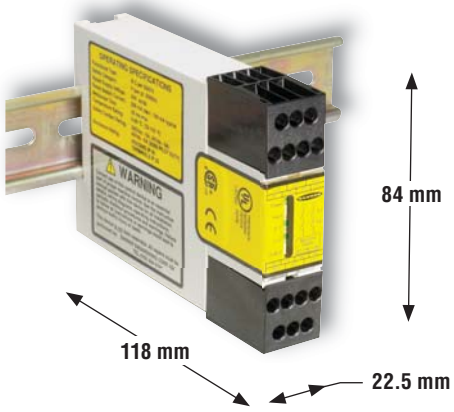
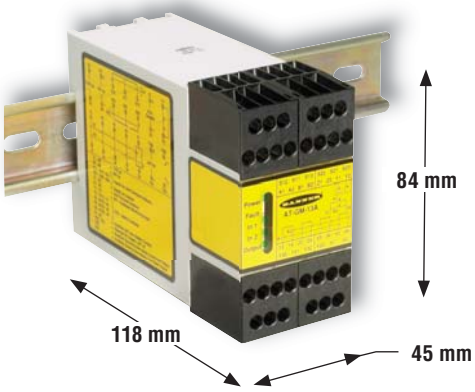
DUO-TOUCH® SG Two-Hand Control Modules, STB Compatible

- *24V ac/dc, 115V ac/24V dc, or 230V ac/24V dc*
- *Four green and one red LED indicators*
- *Minimum NEMA 3 (IEC IP20) polycarbonate housing*
- *Muting optional*
- *35 millisecond output response time*

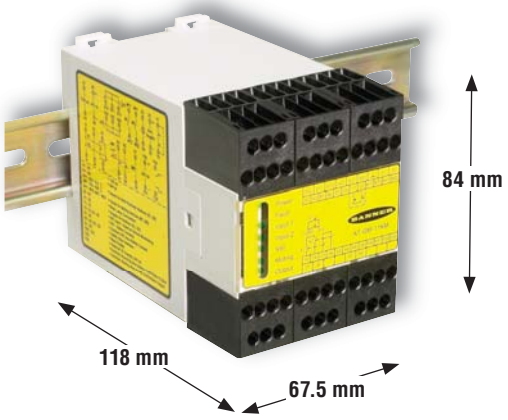
MORE INFO ONLINE Detailed Dimensions



AT-FM-10K Model



AT-..M-13A Models (AT-GM-13A shown)



AT-..M-11KM Models (AT-GM-11KM shown)

DUO-TOUCH® SG Two-Hand Control Modules, STB Compatible

MORE INFO ONLINE Download PDF

Model	Supply Voltage	Inputs	Safety Outputs	Output Rating	Auxiliary Outputs	Muting	Terminals	Timing Diagrams	Data Sheet
AT-FM-10K	24V ac/dc	2 STB*	**2 NO**	6 amps	—	—	Removable	TD001 (p. 239)	64137
AT-GM-13A	115V ac/24V dc	2 STB*	**4 NO**		1 NPN, 1 PNP & 1 NC	—	Removable	TD001 (p. 239)	67241
AT-HM-13A	230V ac/24V dc								
AT-GM-11KM	115V ac/24V dc	2 STB* & Muting	**2 NO**		1 NPN, 1 PNP & 1 NC	Yes	Removable	TD002 (p. 239)	109782
AT-HM-11KM	230V ac/24V dc								

NC = Normally Closed, NO = Normally Open
* May also use two mechanical push buttons, each with one normally open (NO) and one normally closed (NC) contact (Form C). See data sheets for details.
NOTE: Kits are available which include one DUO-TOUCH SG Safety Module and two STB Touch Buttons. STB Touch Buttons are also available separately. See page 94.

DUO-TOUCH® SG AT-..M-13A Modules Specifications

Supply Voltage and Current	**Model AT-GM-13A:** 115V ac, ±15%; 50/60 Hz & 24V dc, ±15%, 10% max. ripple **Model AT-HM-13A:** 230V ac, ±15%; 50/60 Hz & 24V dc, ±15%, 10% max. ripple
Supply Protection Circuitry	Protected against transient voltages and reverse polarity
Safety Outputs	Outputs (K1 and K2): four redundant (total of eight) forced-guided safety relay contacts **Contact ratings:** **Max. voltage:** 250V ac or 250V dc — **Min. voltage:** 15V ac/dc **Max. current:** 6A ac or dc (resistive load) — **Min. current:** 30 mA **Max. power:** 1500 VA, 200 watts — **Min. power:** 5 VA, 5 watts **Mechanical life:** 50,000,000 operations **Electrical life:** 150,000 cycles (typically @ 1.5 kVA switching power) **NOTE: Transient suppression is recommended when switching inductive loads. Install suppressors across load. Never install suppressors across output contacts.**
Auxiliary Supply Voltage (for Solid-State outputs)	24V dc @ 1A (between Y30 & Y31)
Auxiliary Solid-State Output Current	500 mA max., short circuit protected (Y32 or Y31)
Output Response Time	35 milliseconds max. ON/OFF
Input Requirements	Outputs from actuating devices (1 NO and 1 NC) must each be capable of switching 20 mA @ 12V dc.
Simultaneity Monitoring Period	≤ 500 milliseconds
Z1/Z2 Courtesy Voltage	24V dc @ 150 mA (for STB button power)
External Device Monitoring (EDM)	One pair of terminals (Y1 and Y2) are provided to monitor the state of external devices controlled by the safety outputs. Each device must be capable of switching 15 to 30V dc at 10-50 mA.
Status Indicators	**4 green LED indicators:** Power ON Input 1 energized Input 2 energized Output **1 red LED indicator:** Fault
Housing	Polycarbonate. Rated NEMA 1; IEC IP20
Mounting	Mounts to standard 35 mm DIN rail track. Safety Module must be installed inside an enclosure rated NEMA 3 (IEC IP54), or better.
Vibration Resistance	10 to 55 Hz @ 0.35 mm displacement per IEC 68-2-6
Operating Conditions	**Temperature:** 0° to +50° C — **Relative humidity:** 90% @ +50° C (non-condensing)
Safety Category	4 per ISO 13849-1 (EN 954-1); Type IIIC per ISO 13851 (EN 574)
Certifications	For a list of certifications see page 236.
Wiring Diagrams	**AT-..M-13A models:** WD032 (p. 264) **AT-..M-13A to STB Buttons:** WD034 (p. 265)

DUO-TOUCH® SG AT-FM-10K Modules Specifications

Supply Voltage and Current	24V ac/dc ±15% @ 150 mA
Supply Protection Circuitry	Protected against transient voltages and reverse polarity
Safety Outputs	Outputs (K1 and K2): two redundant (total of four) forced-guided safety relay contacts **Contacts:** AgNi, 5 µm gold-plated **Low Current Rating:** **Caution: The 5 µm gold-plated contacts allow the switching of low current/low voltage.** To preserve the gold plating on the contacts, the following max. values should not be exceeded at any time: **Min. voltage:** 1V ac/dc — **Max. voltage:** 60V **Min. current:** 5 mA ac/dc — **Max. current:** 300 mA **Min. power:** 5 mW (5 mVA) — **Max. power:** 7 W (7 VA) **High Current Rating:** If higher loads must be switched through one or more of the contacts, the minimum and maximum values of the contact(s) changes to: **Max. voltage:** 250V ac/dc — **Min. voltage:** 15V ac/dc **Max. current:** 6 A ac or dc (resistive load) — **Min. current:** 30 mA **Max. power:** 200 W (1,500 VA) — **Min. power:** 5 W (5 VA) **Mechanical life:** 50,000,000 operations **Electrical life:** 150,000 operations typical, @ 200 W (1,500 VA) switched power, resistive load. **NOTE: Transient suppression is recommended when switching inductive loads. Install suppressors across load. Never install suppressors across output contacts.**
Output Response Time	35 milliseconds max. ON/OFF
Input Requirements	Outputs from actuating devices (1 NO and 1 NC) must each be capable of switching 20 mA @ 12V dc.
Simultaneity Monitoring Period	≤ 500 milliseconds
External Device Monitoring (EDM)	One pair of terminals (Y1 and Y2) are provided to monitor the state of external devices controlled by the safety outputs. Each device must be capable of switching 15 to 30V dc at 10-50 mA.
Status Indicators	**4 green LED indicators:** Power ON Input 1 energized Input 2 energized Output **1 red LED indicator:** Fault
Housing	Polycarbonate. Rated NEMA 1; IEC IP20
Mounting	Mounts to standard 35 mm DIN rail track. Safety Module must be installed inside an enclosure rated NEMA 3 (IEC IP54), or better.
Vibration Resistance	10 to 55 Hz @ 0.35 mm displacement per IEC 68-2-6
Operating Conditions	**Temperature:** 0° to +50° C — **Relative humidity:** 90% @ +50° C (non-condensing)
Safety Category	4 per ISO 13849-1 (EN 954-1); Type IIIC per ISO 13851 (EN 574)
Certifications	For a list of certifications see page 236.
Wiring Diagrams	**AT-FM-10K models:** WD029 (p. 262)

DUO-TOUCH® SG AT-..M-11KM with Muting Specifications

Supply Voltage and Current	**AT-GM-11KM:** 115V ac, ± 15%; 50/60Hz & 24V dc, +/- 15%, 10% max. ripple **AT-HM-11KM:** 230V ac, ± 15%; 50/60Hz & 24V dc, +/- 15%, 10% max. ripple
Power Consumption	Approx. 4 W / 7 VA
Supply Protection Circuitry	Protected against transient voltages and reverse polarity
Safety Outputs	**Outputs (K1 and K2):** two redundant (total of four) safety relay (forced-guided) contacts **Contact ratings:** **Max. voltage:** 250V ac or 250V dc **Max. current:** 6A ac or dc (resistive load) **Max. power:** 1500 VA, 200 watts **Mechanical life:** 50,000,000 operations **Electrical life:** 150,000 cycles (typically @ 1.5 kVA switching power) **NOTE: Transient suppression is recommended when switching inductive loads. Install suppressors across load. Never install suppressors across output contacts.**
Auxiliary Supply Voltage (for solid-state outputs)	24V dc @ 1A (applied between Y30 & Y31)
Auxiliary Solid-State Output Current	500 mA max., short circuit protected, Y32 is a PNP output, Y33 is an NPN output
Output Response Time	35 milliseconds max. ON/OFF
Input Requirements	Outputs from actuating devices must each be capable of switching up to 20 mA @ 12V dc.
Simultaneity Monitoring Period	≤ 500 milliseconds
Z1/Z2 Courtesy Voltage	24V dc @ 150 mA (for STB button power, separate from Auxiliary output, unregulated)
External Device Monitoring (EDM)	One pair of terminals (Y1 and Y2) are provided to monitor the state of external devices controlled by the safety outputs. Each device must be capable of switching 15 to 30V dc at 10-50 mA.
Muting Device Inputs (M1, M2)	The muting devices work as a pair (M1 and M2). The simultaneity requirement is that they be “closed” within 3 seconds of each other to initiate a mute condition or allow a mute cycle, assuming all other conditions are met. Each muting device must be capable of switching 15 to 30V dc at 10-50 mA.
Mute Enable Input (ME)	Mute Enable input must be closed in order to start a mute cycle. Opening this input after a mute cycle has begun has no effect. The switching device must be capable of switching 15 to 30V dc at 10-50 mA.
Safety Stop Interface (SSI)	This input consists of two concurrent channels (SSI-A and SSI-B) and is always active. Any time either or both channels open, the Safety Outputs will go OFF. When using the SSI, the external device must be capable of switching 15 to 30V dc at 10-50 mA.
Status Indicators	**6 green LED indicators** Power ON Input 1 energized Input 2 energized SSI inputs closed Muting activated Output **1 red LED indicator** Fault
Housing	Polycarbonate. Rated NEMA 1; IEC IP20
Mounting	Mounts to standard 35 mm DIN rail track. Safety Module must be installed inside an enclosure rated NEMA 3 (IEC IP54), or better.
Vibration Resistance	10 to 55Hz @ 0.35 mm displacement per IEC 68-2-6
Operating Conditions	**Temperature:** 0° to +50° C **Relative humidity:** 90% @ +50° C (non-condensing)
Safety Category	4 per ISO 13849-1; Type IIIC per ISO 13851 (EN 574)
Certifications	For a list of certifications see page 236.
Wiring Diagrams	**AT-..M-11KM models:** WD033 (p. 264) **AT-..M-11KM to STB Buttons:** WD034 (p. 265)

DUO-TOUCH® Safety Modules Specifications

Supply Voltage and Current	**Model AT-AM-2A:** 115V ac ±15% at 100 mA **Model AT-BM-2A:** 230V ac ±15% at 50 mA **Model AT-FM-2A:** 24V ac/dc ±15% at 250 mA
Supply Protection Circuitry	Protected against transient voltages and reverse polarity (dc hookup is without regard to polarity)
Safety Outputs	**Outputs (K1 and K2):** Two redundant (total of four) safety relay (forced-guided) contacts **Contact ratings:** **Max. voltage:** 250V ac or 250V dc **Max. current:** 4A ac or dc (resistive load) **Max. power:** 1000 VA, 200 watts **Mechanical life:** 10,000,000 operations **Electrical life:** 100,000 cycles (typically @ 1.0 kVA switching power) **NOTE: Transient suppression is recommended when switching inductive loads. Install suppressors across load. Never install suppressors across output contacts.** **Auxiliary Monitor Output (K3):** One non-safety relay contact **Maximum switching voltage:** 125V ac or dc **Maximum switching current:** 500 mA (resistive load)
Output Response Time	25 milliseconds maximum
Input Requirements	Outputs from actuating devices must each be capable of switching 40 to 100 mA @ 12 to 18V dc.
Simultaneity Monitoring Period	300 milliseconds (typical) < 500 milliseconds under single-fault conditions
Status Indicators	**3 green LED indicators:** Power ON K1 energized K2 energized **1 red LED indicator:** Fault
Housing	Polycarbonate. Rated NEMA 1; IEC IP20
Mounting	Mounts to standard 35 mm DIN rail track. Safety Module must be installed inside an enclosure rated NEMA 3 (IEC IP54), or better.
Vibration Resistance	10 to 55Hz @ 0.35 mm displacement per IEC 68-2-6
Operating Conditions	**Temperature:** 0° to +50° C **Relative humidity:** 90% @ +50° C (non-condensing)
Safety Category	1 and 3 per ISO 13849-1; Type IIIA/B per ISO 13851 (EN574) (Dependent on hookup and installation of the hand controls)
Certifications	For a list of certifications see page 236.
Wiring Diagrams	**AT-..M-2A models:** WD035 (p. 266) **AT-..M-2A to OTB Buttons:** WD037 (p. 267)