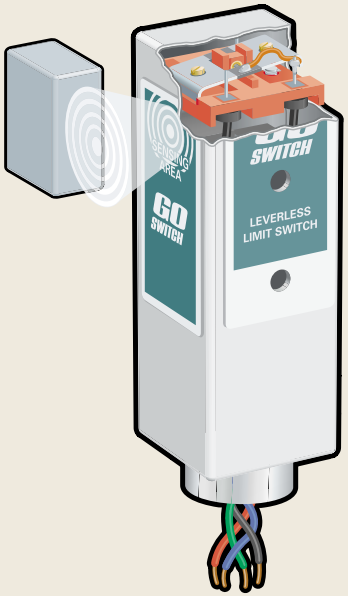
TECHNOLOGY IN ACTION

10-20 Series

LEVERLESS LIMIT SWITCH

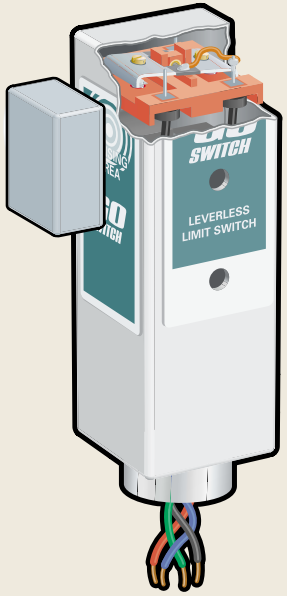
GO Switch 10 and 20 Series side sensing switches use two permanent magnets and a ferrous armature to control a set of dry contacts.



Unoperated

On the sensing side of the switch, one magnet is positioned closer to the armature, creating a dominant magnetic flux field which draws the armature down to its unoperated position, closing a contact circuit.

Shown: Model 11

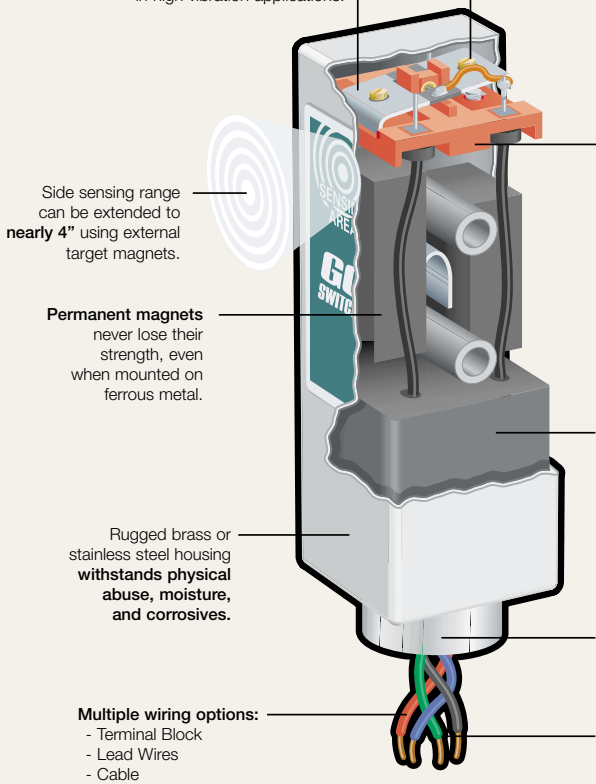


Operated

When a ferrous target enters the sensing area of the switch, it diverts flux lines from the armature to create a magnetic dominance on the opposite side. As a result, the armature snaps to its operated position, closing the other contact circuit.

When the target is removed the armature snaps back to its original, unoperated position.

A LOOK INSIDE - MODEL 11



Options Available

- Explosion Proof
- Extended Sensing
- HiTemp™ to 350°F
- SubSea™ Submersible
- Latching

Key Benefits

GO Switches are simple and built to last.

With only one moving part and no metal-to-metal contact forcing it to move, there is nothing to wear out!

Models 11 and 21

GO Switch Models 11 and 21 are the world's original leverless limit switches.

Their simple design, rugged enclosures, long sensing ranges, and global approvals make these switches the ideal choice wherever reliable position sensing is needed.

Features:
- SPDT 10A contacts
- Side Sensing
- -40⁰ to 221⁰F operating temperature

Options:
- Suitable for Zone 0, 1, or 2 explosion proof
- -40⁰ to 350⁰F high temperature
- Quick disconnect connector
- Underwater capabilities

FAST TRACK DELIVERY

11-11110-00 **21-11110-00**
CSA Class I Div 2
Side Terminal Block

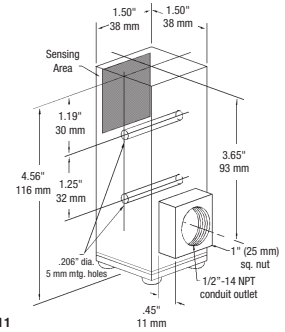
11-12110-00
CSA Class I Div 2
Extended Sensing

11-12510-00 **21-11510-00**
CSA Class I Div 2
Bottom Terminal Block

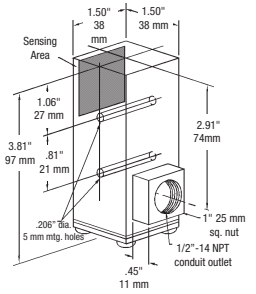
11-12518-A2 **21-11516-A2**
UL/CSA General Purpose
3 ft. leads

21-11524-A2
CSA Class I Div 1; 3 ft. leads

Dimensions



Model 11



Model 21

Model

Repeatability: .002" (.05 mm)

Response Time: 8 milliseconds

Differential: Approx. 5/16" (8 mm)

Operating Temperature: -40⁰ to 221⁰F (-40⁰ to 105⁰C). HiTemp™ option to 350⁰F) (176⁰C)

✓ **11** Size: 1 1/2" (38 mm) square x 4 9/16" (116 mm) overall. Add 1/2" (13 mm) for bottom conduit outlet

✓ **21** Size: 1 1/2" (38 mm) square x 3 13/16" (97 mm) overall. Add 1/2" (13 mm) for bottom conduit outlet

Need Accessories?
See pp. 92-103 for:
Range Extending Target Magnets
Mounting Brackets
Connectors and more!

Contact Form

Contact Material: Silver cadmium oxide, gold flashed

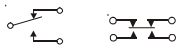
Forms: SPDT, DMDB

Ratings: Resistive

AC		DC	
Volts	Amps	Volts	Amps
120	16	24	3
240	5	48	1
480	2.5	125	0.5
		250	0.5

✓ **1** Single Pole Double Throw (Form C)
3 Single Pole Double Throw (Form C) Latching (maintained contact) (Outlet position must be 2, 4 or 5)
5 Double Make Double Break, two-circuit, Form Z*
6 Double Make Double Break, two circuit, Form Z Latching* (maintained contact) (Outlet position must be 2, 4 or 5)

*CSA certification for DMDB require potted-in leads or cable.



Form C - SPDT Form Z - SPDT-DB

Sensing Range

Target Material: Ferrous steel

Sensing Range: Approx. 3/8" (10mm) standard; 9/16" (14mm) extended sensing (Model 11)

Sensing Range with Target Magnet: up to 3 3/4" (95 mm) (max)

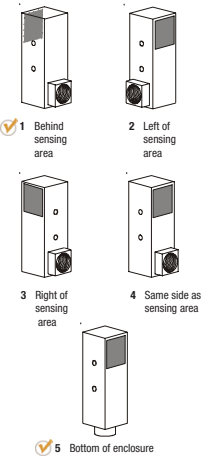
✓ **1** Standard sensing - approx. 3/8" (10 mm) side sensing

✓ **2** Extended sensing - approx. 9/16" (14 mm) side sensing (Contact Form must be 1 or 3) (Model 11)

7 Precision sensing - approx. 1/4" (6 mm) side sensing (minimal differential)

Outlet Position

Conduit Outlet: 1/2" NPT



✓ **1** Behind sensing area
2 Left of sensing area
3 Right of sensing area
4 Same side as sensing area
✓ **5** Bottom of enclosure

Enclosure Material

Material: Brass or Stainless Steel

✓ **1** Brass - coated with flat black lacquer

2 Stainless steel**

3 Brass - corrosion resistant coating (polyurethane)

4 Stainless steel - corrosion resistant coating (polyurethane)**

**All-welded stainless steel switches are recommended for wet or harsh environments.

Approvals

0 CSA / FM certified CI I, Div 2, Grps A,B,C,D; CI II, Div 2, Grps F & G; CI III Terminal block. (Contact form must be 1 or 3) (Wiring must be 00)
2 High temperature to 350⁰F (176⁰C) with Teflon™ insulated leads (Model 11) (Contact form must be 1 or 3) (Sensing must be 1) (Enclosure must be 2) (Wiring must be F)
3 UL listed explosion proof for CI I, Div 1 & 2; Grps A,B,C,D; CI II, Div 1 & 2, Grps E-G; CI III (Enclosure must be 2 or 4) (Wiring must be A, B, or F) (Lead seal req'd within 18")
✓ **4** CSA / FM certified explosion proof for CI I, Div 1; Grps A,B,C,D; CI II, Div 1, Grps E-G; CI III. (Enclosure must be 2 or 4) (Wiring must be A, B, or F) (Lead seal req'd within 18")
5 Mine Safety Health Administration (MSHA) approved "Explosion Proof", File #X / P-1504-1, X / P-1504-2; 6 ft. (1.829m) potted-in SO cable only (Enclosure must be 2) (Wiring must be B3)
✓ **6** CSA / FM certified explosion proof for CI I, Div 2; Grps A,B,C,D; CI II, Div 2, Grps E-G; CI III (Wiring must be A, B, or F) (Lead seal req'd within 18")
✓ **7** CSA certified General Purpose
✓ **8** UL listed General Purpose

Wiring Options

Terminal Block
✓ **00** Terminal block only (not recommended for underwater use) (Approval must be 0, 7 or 8)

Lead Wires 18 Gauge (.110" dia.) potted-in PVC insulated AWM / TEW stranded lead wires rated at 221⁰F (105⁰C) 600V UL / CSA listed
✓ **A2** 36" (914 mm)
A3 72" (1829 mm)
A4 144" (3658 mm)
A_ _ _ Lengths greater than 144" (Specify length in 5' increments (e.g. A150 = 150 ft. of leads))

Cable 18 Gauge (.450" dia.) potted-in SO rubber covered cable rated at 194⁰F (90⁰C) 600V UL / CSA listed
B2 36" (914 mm)
B3 72" (1829 mm)
B4 144" (3658 mm)
B_ _ _ Lengths greater than 144" (Specify length in 5' increments (e.g. B150 = 150 ft. of cable))

Quick Disconnect Male Quick Disconnect only, potted-in connector. (CSA requires a case ground) (Approval must be 7 or 8)

Mini-change®		Micro-change®	
DCA	3 - pin Mini-change® type	**DBA**	3 - pin Micro-change® type
DCD	4 - pin Mini-change® type	**DBD**	4 - pin Micro-change® type
DCG	5 - pin Mini-change® type	**DBG**	5 - pin Micro-change® type

SubSea™ Underwater Connector (Enclosure must be 2 or 4) (Approval 7 or 8)
3DD 3 pin, certified not to leak underwater (includes male/female Delrin™ lock sleeves)
4DD 4 pin, certified not to leak underwater (includes male/female Delrin™ lock sleeves)
3DE 3 pin right-angle, certified not to leak underwater
4DE 4 pin right-angle, certified not to leak underwater

HiTemp Wire 18 gauge (.070") dia. potted-in Teflon™ insulated leads rated at 482⁰F (250⁰C) 600V UL / CSA listed
F2 36" (914 mm)
F3 72" (1829 mm)
F4 144" (3658 mm)
F_ _ _ Lengths greater than 144" (Specify length in 5' increments (e.g. F150 = 150 ft. of leads))

Ordering Guide

Fill in the boxes to create your 'ordering number.'

Model	Contact Form	Sensing Range	Outlet Position	Enclosure Material	Approvals	Wiring Options

Extended Sensing with External Target Magnets

AMP3 Target Magnet

		10 Series			20 Series	
Contact Form		**1 Standard**	**2 Extended**	7 Precision	**1 Standard**	7 Precision
SPDT	**Sensing Differential**	**1" (25mm) 1/2" (13mm)**	**1-1/4" (32mm) 5/8" (16mm)**	11/16" (17mm) 7/16" (11 mm)	1" (25 mm) 3/4" (19 mm)	3/4" (19 mm) 7/16" (11 mm)
SPDT Latching	Sensing Differential	15/16" (24mm) N/A	1-1/4" (32mm) N/A	3/4" (19mm) N/A	1" (25 mm) N/A	13/16" (21 mm) N/A
DMDB	Sensing Differential	1" (25mm) 11/16" (17mm)	N/A	9/16" (14mm) 7/16" (11mm)	1" (25 mm) 1" (25 mm)	3/4" (19 mm) 11/16" (17 mm)
DMDB Latching	Sensing Differential	1" (25mm) N/A	N/A	N/A	1-1/4" (32 mm) N/A	N/A

AMS4 Target Magnet

		10 Series			20 Series	
Contact Form		**1 Standard**	**2 Extended**	7 Precision	**1 Standard**	7 Precision
SPDT	**Sensing Differential**	**1-1/4" (32mm) 11-16" (17mm)**	**1-9/16" (40mm) 11/16" (17mm)**	7/8" (22mm) 1/2" (13 mm)	1-3/8" (35 mm) 7/8" (22 mm)	1" (25 mm) 7/16" (11 mm)
SPDT Latching	Sensing Differential	1-3/16" (30mm) N/A	1-5/8" (40mm) N/A	1" (25 mm) N/A	1-7/16" (37mm) N/A	1" (25 mm) N/A
DMDB	Sensing Differential	1-1/4" (32 mm) 7/8" (22 mm)	N/A	13/16" (21mm) 1/2" (13mm)	1-15/16" (37mm) 9/16" (14 mm)	1" (25 mm) 3/4" (19 mm)
DMDB Latching	Sensing Differential	1-11-32" (34 mm) N/A	N/A	N/A	1-9/16" (40mm) N/A	N/A

AMC5 Target Magnet

		10 Series			20 Series	
Contact Form		**1 Standard**	**2 Extended**	7 Precision	**1 Standard**	7 Precision
SPDT	**Sensing Differential**	**3-3/8" (86mm) 1-1/2" (38mm)**	**3-3/4" (95mm) 1-1/2" (38mm)**	2-3/8" (60mm) 1" (25mm)	3-3/8" (86mm) 1-3/4" (44mm)	2-5/8" (86mm) 1" (25mm)
SPDT Latching	Sensing Differential	3-3/32" (79mm) N/A	3-7/8" (98mm) N/A	2-11/16" (68mm) N/A	3-7/16" (87mm) N/A	2-13/16" (71mm) N/A
DMDB	Sensing Differential	3-7/16" (87mm) 1-13/16"(46mm)	N/A	2-7/32" (56mm) 1" (25mm)	3-3/8" (86mm) 2" (51mm)	2-5/8" (67mm) 1-3/8" (35mm)
DMDB Latching	Sensing Differential	3-3/8" (86mm) N/A	N/A	N/A	3-7/8" (98mm) N/A	N/A

AMF6 Target Magnet

		10 Series			20 Series	
Contact Form		**1 Standard**	**2 Extended**	7 Precision	**1 Standard**	7 Precision
SPDT	**Sensing Differential**	**2-7/16" (62mm) 1-1/2" (38mm)**	**3" (76mm) 1-11/16"(38mm)**	1-15/16" (33mm) 1-3-32" (28mm)	**2-7/16"(62mm) 1-15/16"(49mm)**	1-9/16" (40mm) 7/8" (22mm)
SPDT Latching	Sensing Differential	2-5/32" (55mm) N/A	3-3/16"(81 mm) N/A	1-9/16" (40mm) N/A	2-1/2" (64mm) N/A	1-13/16"(46mm) N/A
DMDB	Sensing Differential	2-1/4" (57mm) 1-13/16" (46mm)	N/A	1-1/8" (29mm) 1-3/32" (28mm)	2-3/8" (60mm) 2-13/16"(71mm)	1-1/2" (38mm) 1-1/2" (38mm)
DMDB Latching	Sensing Differential	2-7/16" (62mm) N/A	N/A	N/A	3" (76mm) N/A	N/A

Agency Approvals

Approvals / Termination Options	(3) UL Class 1 Div 1	(4) CSA/FM Class 1 Div 1	(5) MSHA	(6) CSA/FM Class 1 Div 2	(7) CSA General Purpose	(8) UL General Purpose	(0) CSA/FM Class 1 Div 2
00 - Terminal Block					X	X	X
A - Potted PVC Leads	X	X		X	X	X	
B - Potted SO Cable	X	X	X	X	X	X	
D - Quick Disconnect					X	X	
D - SubSea™ Connector					X	X	
F - Potted HiTemp™ Leads	X	X		X	X	X	

X = Approvals Available

NEMA Ratings

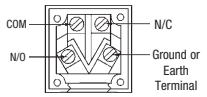
	Non-Hazardous				Hazardous	
NEMA CLASSES	**4**	**4X**	**6**	**6P**	**7**	**9**
00 - Terminal Block	X					
A - Potted PVC Leads	X	SS	X	SS	SS	SS
B - Potted SO Cable	X	SS	X	SS	SS	SS
D - Quick Disconnect	X	SS	X	SS		
D - SubSea™ Connector	X	SS	X	SS		
F - Potted HiTemp™ Leads	X	SS	X	SS	SS	SS

SS = Stainless steel
X = Designed to meet respective NEMA specifications

Wiring Diagrams (male view)

4 Wire PVC & HiTemp Leads	
N/C	Red
N/O	Blue
COM	Black
GND	Green

Terminations A & F



SPDT (Terminal Block)

DMDB (Two Circuit) Same polarity only

SO Cable	
N/C	Red
N/O	White
COM	Black
GND	Green

Termination B

DMDB Form Z PVC Leads	
N/C 1 & 2	Red & Red/White Stripe
N/O 1 & 2	Blue & Blue/White Stripe

Termination A

DMDB 4 Conductor SO Cable	
N/O 2	Black
N/C 2	White
N/C 1	Red
N/O 1	Green

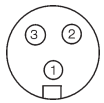
Termination B

DMDB Form Z Mini-Change QDC - 4 Pin	
Pin 1	N/O 2
Pin 2	N/C 2
Pin 3	N/C 1
Pin 4	N/O 1

Termination DCD

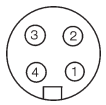
Mini-Change QDC - 3 Pin	
Pin 1	COM
Pin 2	N/C
Pin 3	N/O

Termination DCA



Mini-Change QDC - 4 Pin	
Pin 1	COM
Pin 2	N/O
Pin 3	N/C
Pin 4	GND

Termination DCD

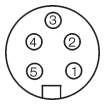


DMDB 5 Conductor SO Cable	
N/C 2	White
N/C 1	Red
GND	Green
N/O 1	Orange
N/O 2	Black

Termination B

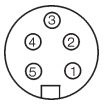
Mini-Change QDC - 5 Pin - SPDT	
Pin 1	N/O
Pin 2	N/C
Pin 3	GND
Pin 4	Inactive
Pin 5	COM

Termination DCG



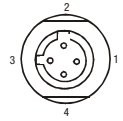
Mini-Change QDC - 5 Pin - DMDB	
Pin 1	N/C 2
Pin 2	N/C 1
Pin 3	GND
Pin 4	N/O 1
Pin 5	N/O 2

Termination DCG



Micro-Change QDC - 4 Pin	
Pin 1	COM
Pin 2	N/O
Pin 3	N/C
Pin 4	GND

Termination DBD

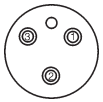


Micro-Change QDC - 3 Pin	
Pin 1	COM
Pin 2	N/C
Pin 3	N/O

Termination DBA

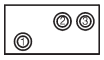
SubSea - 3 Pin - Lock Sleeve	
Pin 1	N/C
Pin 2	COM
Pin 3	N/O

Termination 3DD



SubSea - 3 Pin - Right Angle	
Pin 1	COM
Pin 2	N/O
Pin 3	N/C

Termination 3DE



SubSea - 4 Pin - Lock Sleeve	
Pin 1	COM
Pin 2	N/O
Pin 3	N/C
Pin 4	GND

Termination 4DD