SCIP™

Human-Machine Interface Builder

Custom Controllers

ALWAYS A SOLUTION

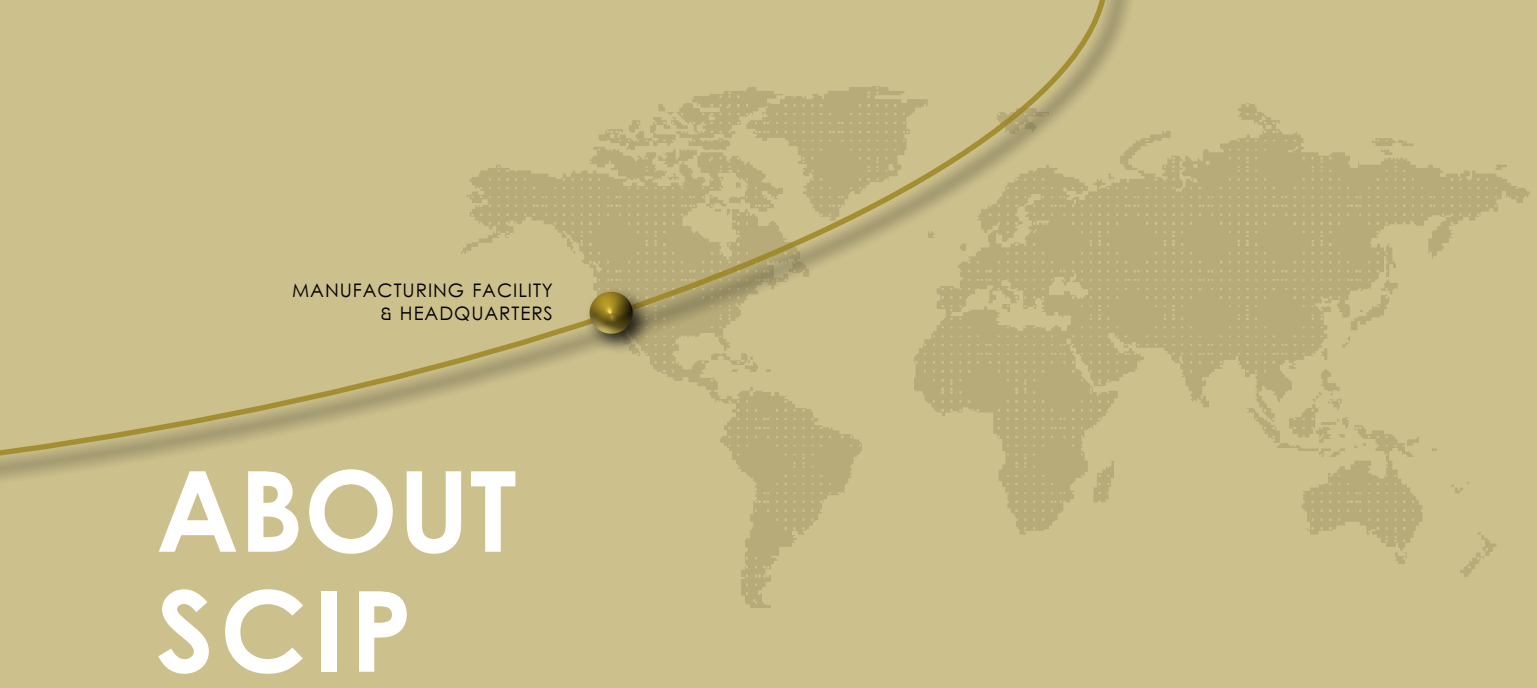
- *miniatures*
- *joysticks*
- *grips*
- *levers*
- *wheels*
- *portables*



WWW.SCIP-ENGINEERING.COM

Made in USA

CATALOG 16/B



ABOUT SCIP

SCIP stands for **S**pecialist of **C**ontrol **I**nterfaces & **P**ositioning. Although newly implanted in the US, our team has more than 15 years of know-how in the development and manufacture of military-grade control devices.

With a main focus on hand grips, joysticks, control wheels and other portable units, we provide solutions integrating a wide range of buttons and high-precision technologies such as strain gage, Hall-effect, optical and potentiometric. We also design custom-packaged for embedded electronic including communication interface and safety software.

With a strong experience built up upon the renewed trust and loyalty of the most reputable Aerospace, Defense and Military customers, we can offer controllers' configurations ranging from standard to fully customized for the most demanding applications and the harshest environments.

We differ from our competition through our neat integrations, our development flexibility, our device optimization notably on reducing the fatigue of Use and competitive pricing all combined with high execution reactivity. We are also full committed to help our customers to create new opportunities.

We design and manufacture in Orange County, California.



'Giving life to ever more innovative controllers is our mission, we are proud that they contribute to your success'

Cedric Duhamel, Founder



SCIP Engineering offers a wide range of rugged and reliable customized control devices for mission systems and subsystems suited for the following industries:

- *Aerospace*
- *Defense*
- *Military*
- *Marine*
- *Medical*
- *Security*
- *Construction*
- *Industrial equipment*



Our team has collaborated with all of these major players: (non-exhaustive list)

EADS/CASA, SAGEM DS, DCNS, THALES AVIONICS, EUROCOPTER, ECA EN, NEXTER, MBDA, SUPRAERO, RAFAEL, THALES TRAINING & SIMULATION, THALES SERVICES SAS, BARCO VIEW TEXEN, BOMBARDIER, ACE

Example of a few platforms where our solutions can be found:

- *Airbus A380 & A400M*
- *Dassault Mirage F1*
- *DCNS Delta frigate*
- *DCNS "Scorpene" submarine*
- *DCNS "Barracuda" attack submarine*
- *DCNS "Le Terrible" SLNE submarine*
- *EADS C-295 Brezilian aircraft*
- *Mil MI-17 Helicopter*
- *Nexter ARX20, T40 & CPT40 turrets*
- *Sagem gunner's control system*
- *Sagem commander's control system*
- *Sukhoi SuperJet 100 (RRJ)*
- *Thales Air Defense weapon system*
- *Thales TACTIS Tactical simulator*
- *Thales CV90 tank simulator*
- *Barco microvista suitcase*

OUR SOLUTION

Full service design and manufacturing partner.

From the first contact, SCIP Engineering creates a personalized assistance. Our existing configurations are often used as starting point. To offer the solution perfectly tailored to your needs, we realize an initial study with an innovative approach that includes a preliminary design. We then commit to an effective partnership that will accompany you throughout the realization of your project. We provide high-quality manufacturing and can guarantee your satisfaction.





1. Plan

Meeting your deadlines and our commitments is our priority. Our expert team identifies the key factors of success of your project and consolidates data that will generate and monitor the overall planning, the reviews, risks and compliance matrix. Deliverables and other milestones are then identified and immediately tracked.

Controller and end-user must become one when in action, 'we are extremely attentive to comfort and control-force feedback'.

2. Design

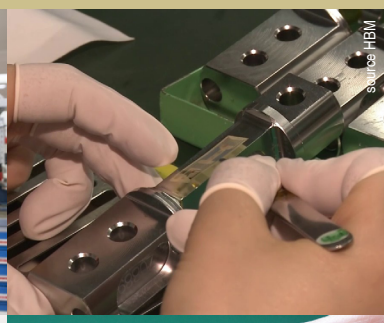
With more than 15 years' experience in design and verification of HMI products, our engineering team fully masters technology and the art of integration. Our systems, mechanical, electromechanical, electronic and software experts are assisted by CAD and innovative simulation tools. They coordinate to most accurately meet each of your requirements. We also offer mockup and prototype builds and qualification tests certified by external laboratories for design validation.

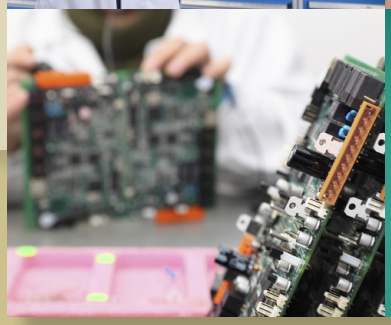


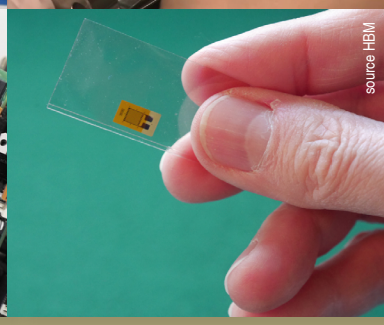
3. Manufacturing

We manage a complex supply chain for quality, delivery and cost control. Each component is made by certified professionals and each critical part is made by local companies. The assembly and testing phases are performed in our facility and meet ISO9001:2008 and AS9100C quality standards. We also make sure that they are in accordance with Aerospace & Defense's required high-level of performance standards.











4. Delivery

We ensure the labeling, packaging and export-compliance management of our finished products. Through the use of an advanced logistic platform, we guarantee on-time delivery. Post-delivery services offer repairs and refurbishing, sustaining engineering, obsolescence management and product tracking.

TABLE OF CONTENTS

Based on a modular technology using aluminum castings or molded composite plastics, our controllers combined with a wide range of buttons *(pushbutton, trim, rocker, toggle, multiway, trigger, thumbstick)*, will fit naturally under your fingers.

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MT2 series ... *p11*



MTS series ... *p13*



JOYSTICKS

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J20 series ... *p18*



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GRIPS

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G60 series ... *p25*



G70 series ... *p25*



Provide us your requirements,
we will deliver the appropriate solution.

SCIP™
Human-Machine Interface Builder

MANUFACTURED UNDER ISO9001 QUALITY SYSTEM AND COVERED BY A MINIMUM 2 YEARS WARRANTY

LEVERS

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PCU TACT series ... *p31*



Applications:

Medical & surgery equipment • Powered wheelchair controller • Tracking and flight control • Cursor controller • Land weapon control • Guide missiles control • Naval application • Turret control • Ground station control • Construction equipment • Off highway vehicles • Industrial vehicles • Armored vehicles • Radar systems • Laser sighting • Visual display • Drone control • CCTV camera systems • FLIR system • Robotics... and more.

Specifications Subject To Change Without Notice Made in USA

MINIATURES

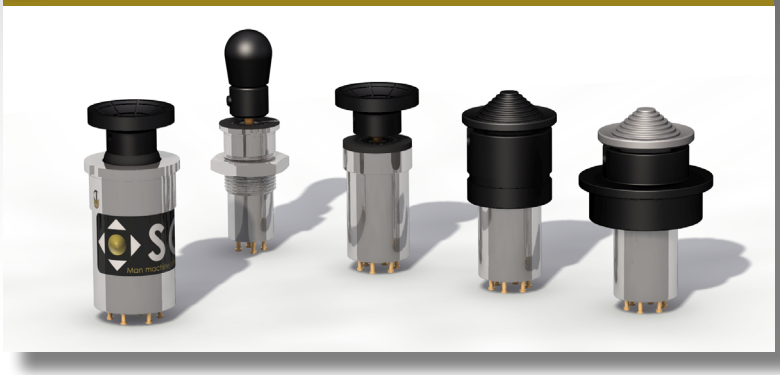
- **MT1** *thumbstick force*
- **MT2** *thumbstick displacement*
- **MTS** *trigger switch*



Specifications Subject To Change Without Notice

Thumbstick Force

Strain gage technology



By measuring finger' force without affecting hand dexterity, MT1 series provides an accurate control and a high-reliability through the use of strain gage technology. Analog outputs are proportional to the force applied onto the button in every X and Y direction. Waterproof and validation in option.

Key features

- Aerospace & Military grade
- Excellent proportional control
- Small size & high sensitivity
- Full & Half bridge circuits
- 1 Million mechanical cycle life
- Infinite resolution
- Switch validation in option
- Stainless steel case
- Waterproof
- RoHS compliant

Applications

- Guide missiles control
- Radar systems
- Tracking and flight control
- Visual display
- Robotic & medical

Standards

- MIL STD 810D /461
- MIL STD 1250
- DRTCA DO160E
- GAM EG13

	Analogic Thumbstick Force	
	Standard	Validation
Mechanical characteristics		
Operating force	15 N	15 N
Maximum torque on Button	0.35 mN	0.35 mN
Permissible force at end of travel	25 N max	25 N max
Travel	0.6 mm ±20%	0.6 mm ±20%
Validation travel	-	1.5 mm ±20%
Validation force	-	20 N ±20%
Mechanical life	1,000,000 cycles	1,000,000 cycles
Electrical characteristics		
Nominal voltage	±5 VDC	±5 VDC
Normal sensitivity	54/66/87 mV/N ±20%	66/87 mV/N ±20%
Hysteresis	±0.05 VDC	±0.05 VDC
Sensibility temperature coef.	± 0.2% /SN/°C	± 0.2% /SN/°C
Linearity error	± 0.07 VDC	± 0.07 VDC
Validation rating	-	28 VDC, 2 A max
Validation electrical life	-	25,000 cycles
General characteristics		
Case	stainless steel	stainless steel
Terminal	solder terminal	solder terminal
Contact	silver with gold plate	silver with gold plate
Front face humidity resistance	IP65	IP65
Dielectric strength	50V / 1min	50V / 1min
Insulation resistance	> 100 Mohms @ 50V	> 100 Mohms @ 50V
Operating temperature	-40°C to 71°C	-40°C to 71°C
Storage temperature	-50°C to 85°C	-50°C to 85°C
Weight	-	-

MT1 PART REFERENCE

Specific product possibility on request

MT1 – XX X XX

Case type

T1. Ø12
T2. Ø15.8
T3. Ø19
T4. Ø25
T5. validation

Max output

(excitation ±5Vdc)

A. 0.81 Vdc*
B. 1.00 Vdc
C. 1.30 Vdc

(*) Not compatible with T5 Case.

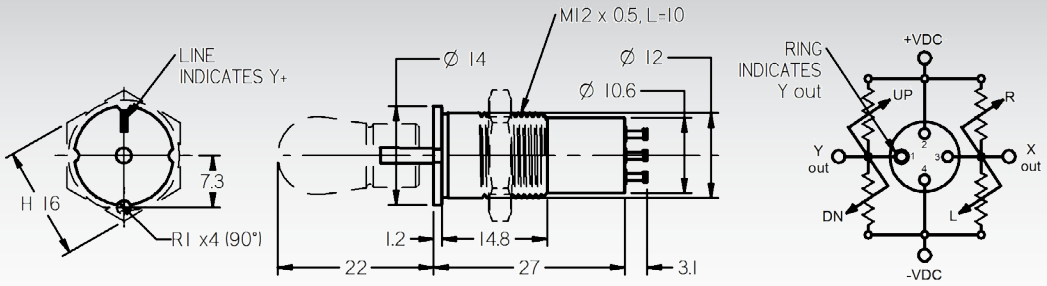
Button style

10. convex black plastic
11. convex grey plastic
20. concave black Aluminum
21. concave clear Aluminum
30. stick black Aluminum

Specifications Subject To Change Without Notice Made in USA

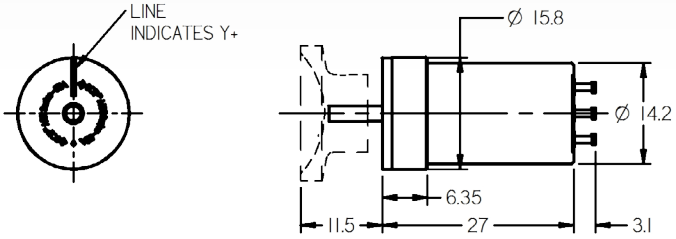
T1

FULL BRIDGE
(4 TERMINALS)



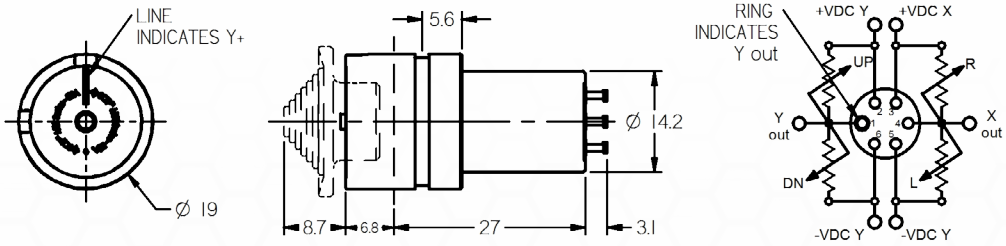
T2

HALF BRIDGE
(6 TERMINALS)



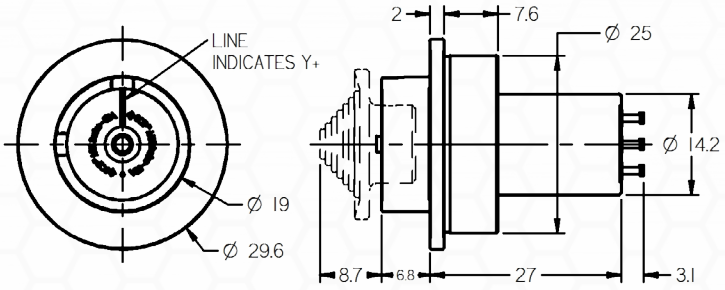
T3

HALF BRIDGE
(6 TERMINALS)



T4

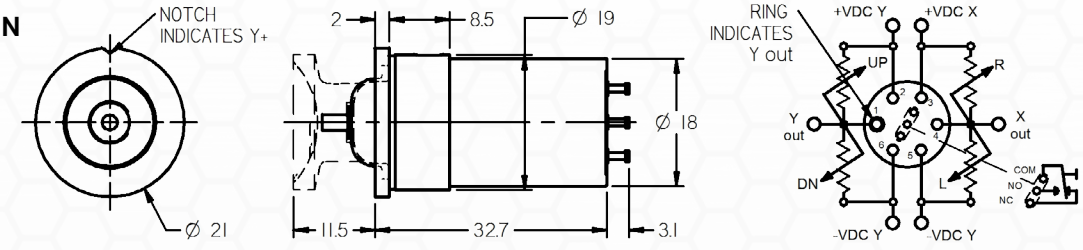
HALF BRIDGE
(6 TERMINALS)

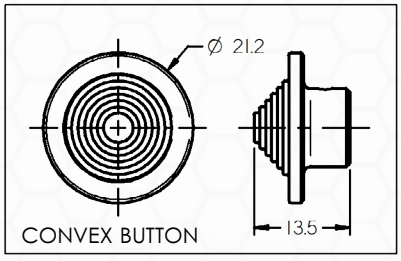


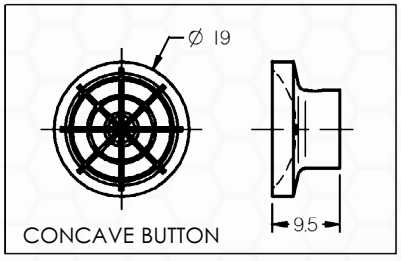
VALIDATION

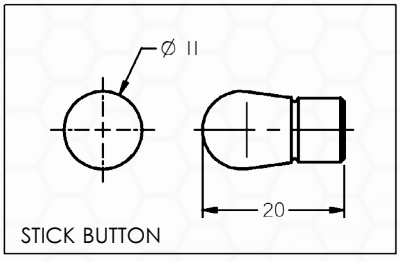
T5

HALF BRIDGE
(6 TERMINALS)









Thumbstick Displacement

Linear Hall Effect technology



MT2 series is the smallest package of proportional 2 axis joystick in Aerospace & Military markets. The use of non-contact technology in a metal case enables an excellent reliability and sturdiness. A wide variety of mechanical & electrical configurations are available to satisfy all applications. Full redundant outputs & validation are in option.

Key features

- Aerospace & Military grade
- Contactless technology
- 1 & 2 axis in small package
- Analog or PWM outputs
- 1 Million mechanical cycle life
- Full redundant outputs available
- Switch validation in option
- Anodized aluminum case
- Waterproof
- RoHS compliant

Applications

- Guide missiles control
- Radar systems
- Tracking and flight control
- Visual display
- Robotic & medical

Standards

- MIL STD 810D /461
- MIL STD 1250
- RTCA DO160E
- GAM EG13

	Hall Effect Thumbstick Displacement	
	Standard	Validation
Mechanical characteristics		
Operating force	4,5 N ±20%	4,5 N ±20%
Maximum torque on Button	0.35 mN	0.35 mN
Maximum applied force	200 N	200 N
Travel angle	±20° ±10%	±20° ±10%
Validation travel	-	1 mm ±15%
Validation force	-	10 N ±20%
Mechanical life	1,000,000 all directions	1,000,000 all directions
Electrical characteristics		
Angular resolution	12 bit	12 bit
Supply Voltage Range	4.5 to 5.5 VDC	4.5 to 5.5 VDC
Reverse voltage max	-10 V	-10 V
Overvoltage Max	20 V	20 V
Validation rating	-	24 VDC, 100 mA max
Validation electrical life	-	>100,000 cycles
Return to Center Voltage	±200 mV	±200 mV
General characteristics		
Case	anodized aluminum	anodized aluminum
Terminal	solder terminal	solder terminal
Front face humidity resistance	IP65 IEC 60529	IP65 IEC 60529
EMC Immunity Level	EN61000-4-3	EN61000-4-3
EMC Emissions Level	EN61000-6-3:2001	EN61000-6-3:2001
ESD	EN61000-4-2	EN61000-4-2
Operating temperature	-40°C to 71°C	-40°C to 71°C
Storage temperature	-40°C to 85°C	-40°C to 85°C
Weight	-	-

MT2 PART REFERENCE

Specific product possibility on request

MT2 – X XX X

Limiter

1. ▯ single axis
2. ✣ dual axis
3. ◯ round
4. □ square

Outputs

A0.	Out1: 0.5-4.5V	Out2: none
A1.	Out1: 0.5-4.5V	Out2: 0.5-4.5V
A2.	Out1: 0.5-4.5V	Out2: 4.5-0.5V
B0.	Out1: PWM	Out2: none
B1.	Out1: PWM	Out2: PWM

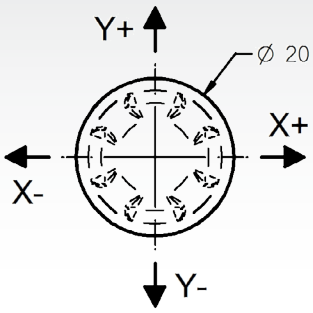
Other output options soon available

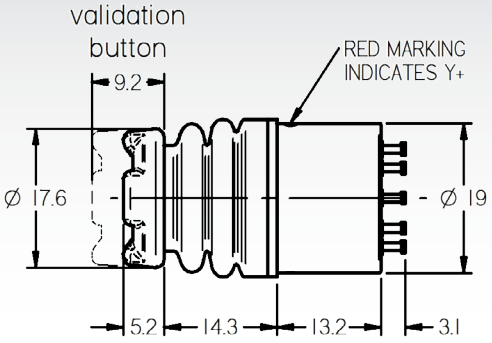
Validation

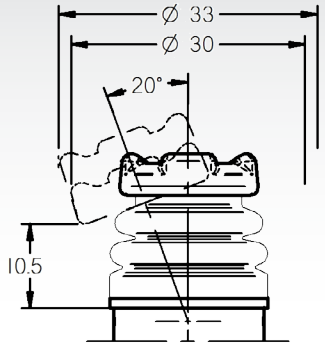
0. none
1. included

Specifications Subject To Change Without Notice Made in USA

DIMENSIONS

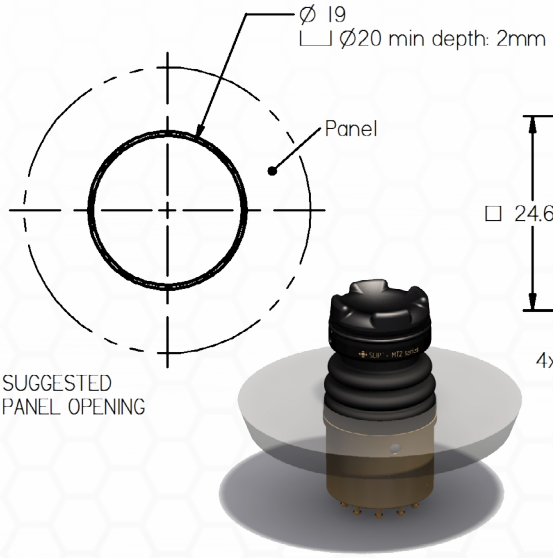




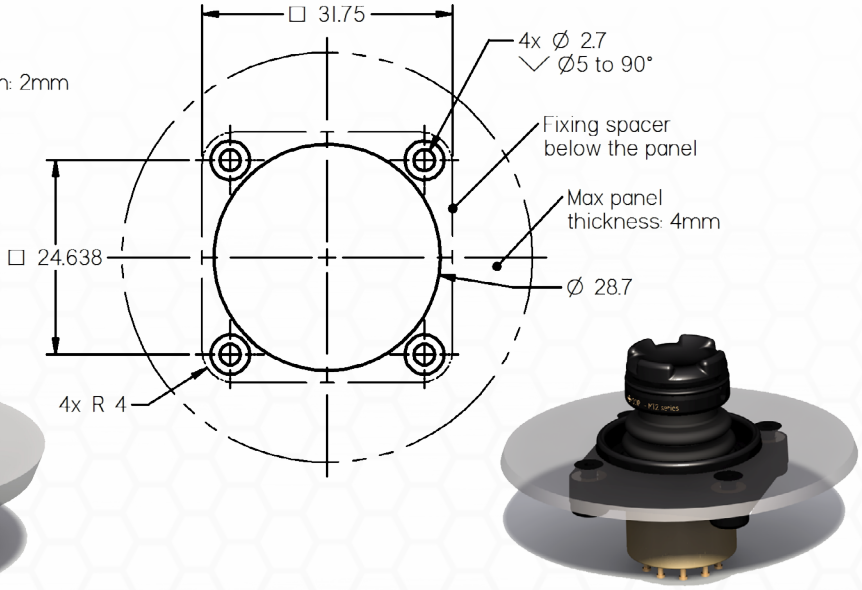


MOUNTING OPTIONS

FRONT MOUNT WITHOUT SPACER



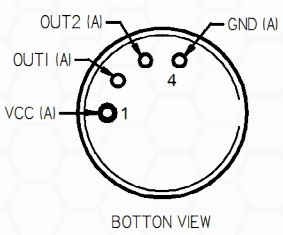
REAR MOUNT WITH SPACER



WIRING

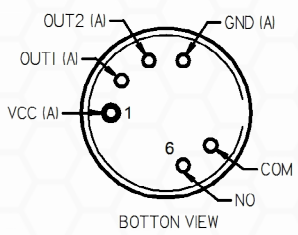
SINGLE OUTPUT

WITHOUT VALIDATION



MT2-xA00
MT2-xB00

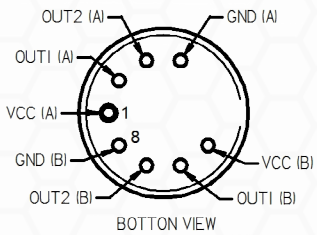
WITH VALIDATION



MT2-xA01
MT2-xB01

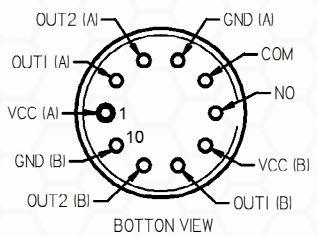
DUAL OUTPUT

WITHOUT VALIDATION



MT2-xA10
MT2-xB20
MT2-xB30

WITH VALIDATION



MT2-xA11
MT2-xB21
MT2-xB31

Trigger Switch

Sub-miniature switch integrated



MTS triggers integrate momentary action switches in the smallest package that can be mounted in control grips and other portable units. A variety of configurations such as position number, flap guard and colours are available to satisfy different applications.

Key features

- Aerospace grade
- Excellent force feedback
- Small size for easy integration
- Positive detent action
- Up to 5A switching capability
- Low level switching capability
- NO/NC double break outputs
- Available with flap guard
- Composite materials
- RoHS compliant

Applications

- Hand grip
- Control grip
- Fire control

Standards

- MIL STD 810D /461
- MIL STD 1250
- RTCA DO160E
- GAM EG13
- MIL-S-9487

	Trigger switch	
	single-position	two-position
Mechanical characteristics		
Operating force first position	12 N	12 N
Release force first position	2 N	2 N
Operating force second position	-	35 N
Total travel first position	12°	12°
Total travel second position	-	22°
Flap guard rotate torque	>0.015 N.m	>0.015 N.m
Mechanical life	250,000 cycles	100,000 cycles
Electrical characteristics		
Voltage	28 VDC	28 VDC
Current (resistive)	5 A	5 A
Current max (inductive L/R=26ms)	3 A	3 A
Electrical endurance (full load)	50,000 cycles	50,000 cycles
Low level	10 mA @ 30 mV	10 mA @ 30 mV
General characteristics		
Case	black PA6.6	black PA6.6
Button	thermoplastic	thermoplastic
Terminal	solder, brass with gold	solder, brass with gold
Contact	silver with gold plate	silver with gold plate
Dielectric strength	50 V / 1min	50 V / 1min
Insulation resistance	> 100 Mohms @ 50V	> 100 Mohms @ 50V
Operating temperature	-40°C to 71°C	-40°C to 71°C
Storage temperature	-55°C to 85°C	-55°C to 85°C
Weight	-	-

MTS PART REFERENCE

Specific product possibility on request

MTS – X X X

N# position
1. single
2. two

Button color
B. black
R. red
G. gray

Flap guard *
0. none
B. black
R. red

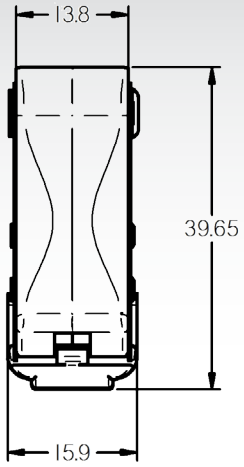
(*) **for single-position trigger:**
position operable when flap guard is lifted up

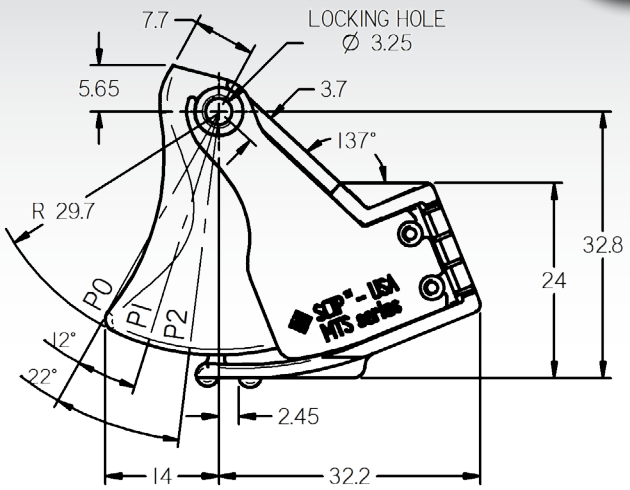
for two-position trigger:
position 1 operable with flap guard
position 1 & 2 operable when flap guard is lifted up

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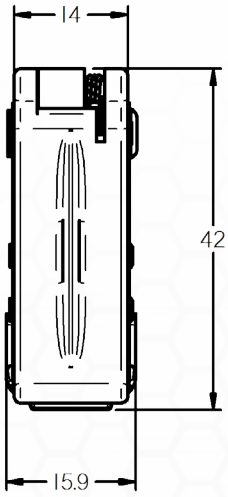
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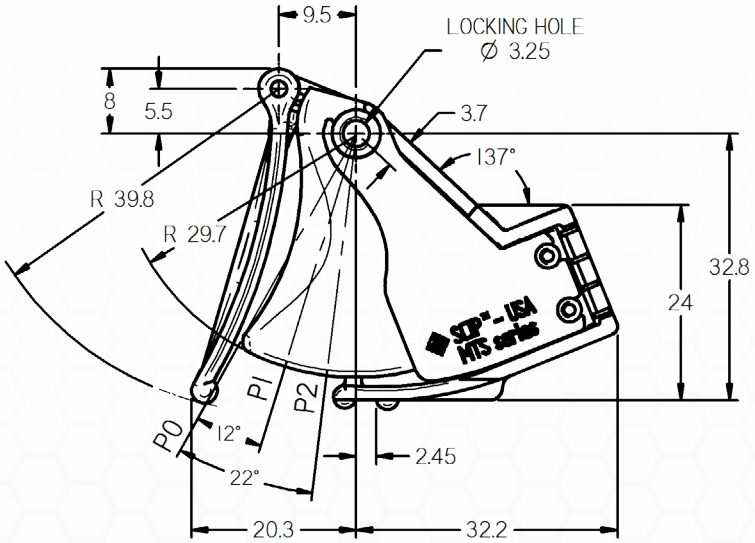
MOM
MTS-xx0





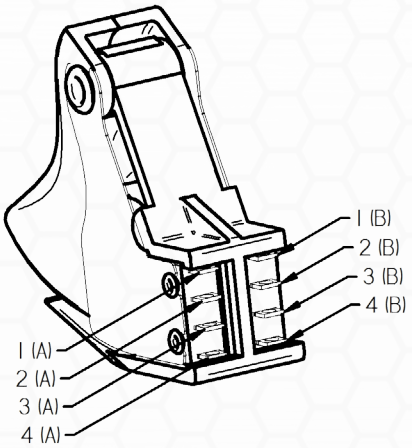
MOM +
FLAP GUARD
MTS-xxB
MTS-xxR

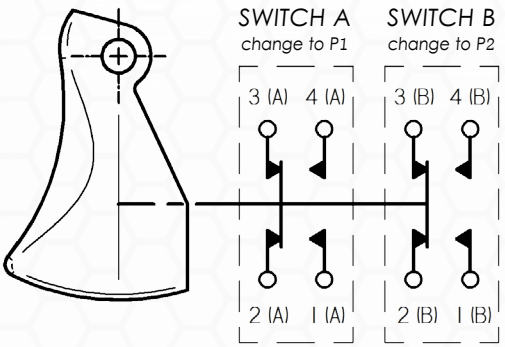




ELECTRICAL WIRING & DIAGRAM

Diagram representation in rest position P0





- SINGLE-POSITION: contains only (A) switch
- TWO-POSITION: contains (A) & (B) switches

JOYSTICKS

- ***J10*** *compact 3D joystick*
- ***J20*** *medium joystick*
- ***J50*** *heavy joystick*



Specifications Subject To Change Without Notice

Compact 3D Joystick

Hall Effect technology



J10 joystick is the perfect solution for limited space when precision fingertip control is required. Available in 1, 2 or 3 axis configurations, various handles & electrical outputs, its modularity coupled with a robust construction are suited for the most demanding applications.

Key features

- Precision in compact size
- Low operational force
- 1, 2 and 3 axis configurations
- Depth below panel <26mm
- 5 Million mechanical life
- Analog, PWM or SPI outputs
- Full redundant outputs available
- Switch validation in option
- Composite materials
- RoHS compliant

Applications

- Powered wheelchair controllers
- Construction equipment
- Industrial vehicle controls
- Medical & surgery equipment
- CCTV camera systems
- Robotics & CMM machines

Standards

- MIL STD 810D /461
- MIL STD 1250
- GAM EG13

	Compact joystick	
	X and XY axis	XYZ axis
Mechanical characteristics		
Breakout force X,Y axis	1N or 2N or 3N	1N or 2N or 3N
Operating force X,Y axis	2.5N or 3.5N or 4.5N	2.5N or 3.5N or 4.5N
Maximum applied force X,Y axis	300 N	200 N
Travel angle X,Y axis	±22° ±10%	±22° ±10%
Operating torque Z axis	-	0.05 to 0.11 N.m
Maximum applied torque Z axis	-	3 N.m
Travel angle Z axis	-	±30° ±10%
Lever action	spring, self-centering	spring, self-centering
Mechanical life	5,000,000 all directions	5,000,000 all directions
Electrical characteristics		
Angular resolution	12 bit	12 bit
Supply Voltage Range	4.5 to 5.5 VDC	4.5 to 5.5 VDC
Reverse voltage max	-10 V	-10 V
Overvoltage Max	20 V	20 V
Validation rating	24 VDC, 100 mA max	24 VDC, 100 mA max
Validation electrical life	>100,000 cycles	>100,000 cycles
Return to Center Voltage	±200 mV	±200 mV
General characteristics		
Case	black thermoplastic	black thermoplastic
Terminal	Hirose DF11-12DP (male)	Hirose DF11-12DP (male)
Sealing (front face)	IP65 IEC 60529	IP65 IEC 60529
EMC Immunity Level	EN61000-4-3	EN61000-4-3
EMC Emissions Level	EN61000-6-3:2001	EN61000-6-3:2001
ESD	EN61000-4-2	EN61000-4-2
Operating temperature	-40°C to 71°C	-40°C to 71°C
Storage temperature	-40°C to 85°C	-40°C to 85°C
Weight	-	-

J10 PART REFERENCE

Specific product possibility on request

J10 – X X XX X

Limiter

1. single axis
2. dual axis
3. round
4. square
5. cross

Handle

1. ball
2. ball + protector
3. tapered
4. tapered + protector
5. straight + push-button
6. ergo
7. ergo + push-button
8. ergo + Z axis*
9. ergo + Z axis* + push-button

XY outputs

A0.	Out1: 0.5-4.5V	Out2: none
A1.	Out1: 0.5-4.5V	Out2: 0.5-4.5V
A2.	Out1: 0.5-4.5V	Out2: 4.5-0.5V
B0.	Out1: PWM	Out2: none
B1.	Out1: PWM	Out2: PWM
C0.	Out1: SPI	Out2: none
C1.	Out1: SPI	Out2: SPI

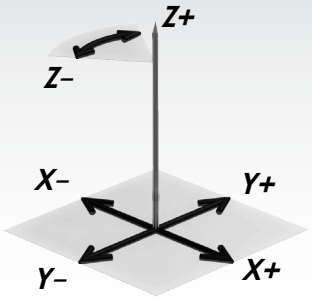
Lever force

1. 1N to 2.5N
2. 2N to 3.5N
3. 3N to 4.5N

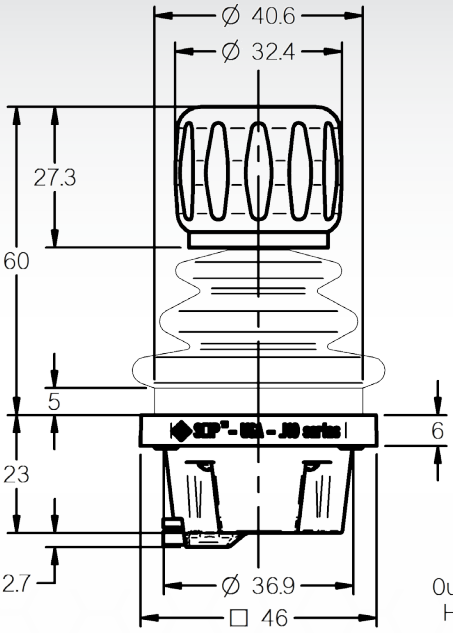
(*) Z axis: Out1: 0.5-4.5V
Out2: 0.5-4.5 if dual XY outputs

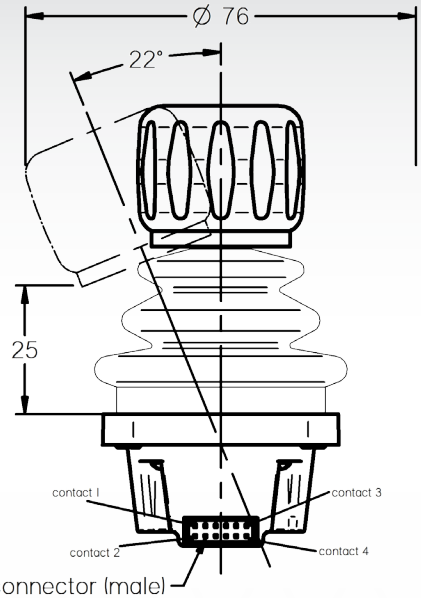
Specifications Subject To Change Without Notice

DIMENSIONS



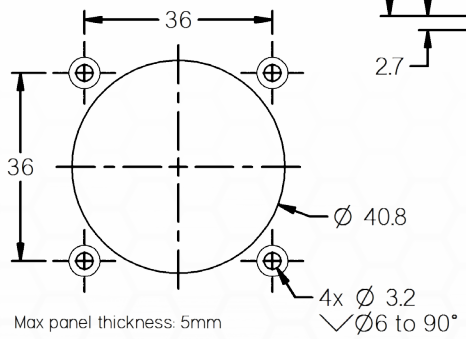
AXIS ORIENTATION



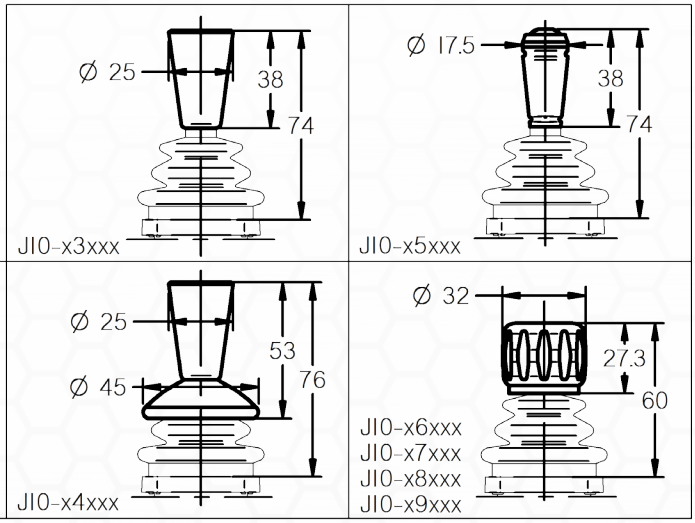


Output connector (male)
Hirose DF11-12DP-2DS9

SUGGESTED
PANEL OPENING

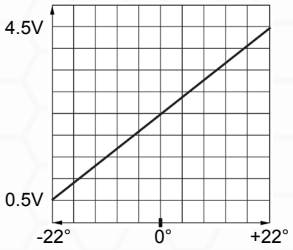


REAR MOUNT PANEL CUT-OUT

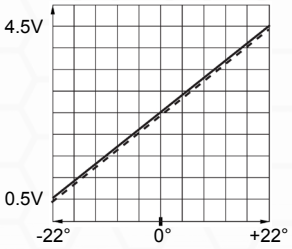


ELECTRICAL WIRING & DIAGRAM

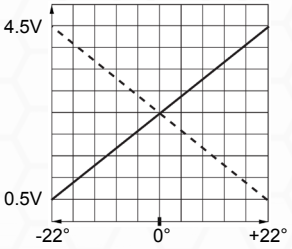
XY OUPUTS OPTION A0



XY OUPUTS OPTION A1



XY OUPUTS OPTION A2



OUPUT 1
OUPUT 2

(female cable connector Hirose DF11-12DS-2C)

contact	Analog/PWM outputs	SPI output
1	VCC 1	VCC 1
2	GND 1	GND 1
3	Xout 1	/SS 1
4	Yout 1	SCLK 1
5	VCC 2	MOSI / MISO 1
6	GND 2	VCC 2
7	Xout 2	GND 2
8	Yout 2	/SS 2
9	Zout 1	SCLK 2
10	Zout 2	MOSI / MISO 2
11	Com button	Com button
12	NO button	NO button

Specifications Subject To Change Without Notice Made in USA

Medium Joystick

Limitless configuration



J20 joystick's modularity allows a very large range of control applications when the combination of functionalities is required. Rugged design in a low profile, custom handle and switches, mix of sensor technologies for a secure redundancy, high-reliability and a long-life capacity make it the most obvious choice for your project.

Key features

- Tailored-to-Your Needs solution
- Single or dual axis control
- Monolithic aluminum frame
- Custom handle & buttons
- Choice of sensor technology:
  - *Hall Effect technology*
  - *potentiometric track*
  - *incremental optical encoder*
  - *switches*
- Possibility to mix sensor techno.
- Full redundant outputs available
- Various communication interface
- Sealed above the flange to IP67
- Up to 10 million cycles
- Maintenance-free operation
- RoHS compliant

Applications

- Military controller
- Off highway vehicles
- Industrial systems
- Robotics

Standards

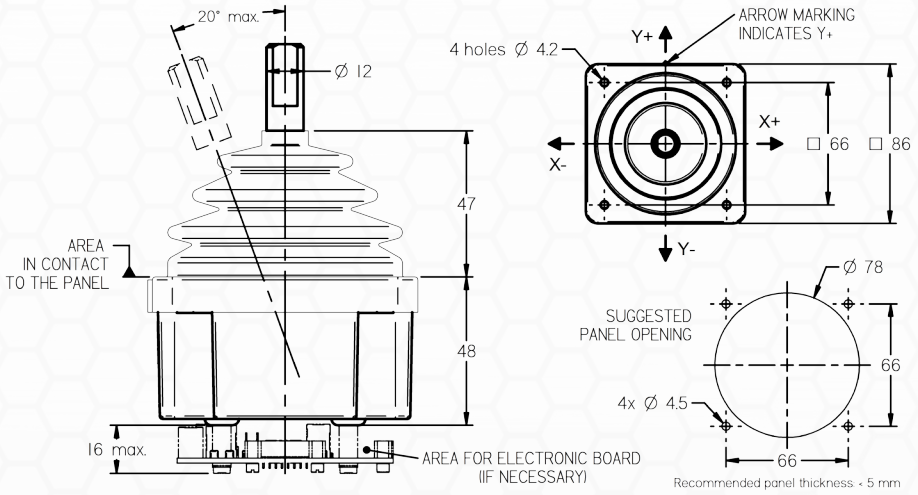
- MIL STD 810D /461
- MIL STD 1250
- GAM EG13

Custom-made mechanics and electronics and includes a specific communication interface and also, product certification and qualification tests that will meet the most stringent requirements.

Contact our technical sales team about your requirements.

Mechanical characteristics	
Travel Angle	until to ±20° ±10%
Operating Force	from 5 N to 30 N
Maximum applied force	500 N
Lever action	friction or return to center
Limiter	⫿ ✣ ○ □ ⛌
Handle & button(s)	standard or custom design
Mechanical life	10,000,000 all directions
Electrical characteristics	
Axis sensor technology	Hall Effect, potentiometer, optical encoder or switches
Supply voltage	5, 10 or 24 VDC
Output interface	voltage, current, PWM, serial, USB, CAN
Electrical connection	according to your need
General characteristics	
Frame material	aluminum alloy
Handle material	thermoplastic or metal
Sealing (above the flange)	IP67 IEC 60529
Operating temperature	-25°C to 71°C
Storage temperature	-40°C to 85°C

DIMENSIONS



Specifications Subject To Change Without Notice

Heavy Joystick

Commander's hand station



Robust mechanism, high precision sensors and excellent reliability, its proven technology is dimensioned to be used in extreme conditions. Available up to 4 axis movement, custom shape & paint, choice of buttons & communication interface, J50 series' joystick is the ideal control solution for the most critical missions.

Key features

- Tailored-to-Your Needs solution
- Excellent force feedback
- High precision technology
- Extreme sturdiness
- Up to 4 axis with thumbstick
- Custom handle & buttons
- Custom base configuration
- Wide choice of sensors' techno.
- Full redundant outputs available
- Choice of electrical interfaces
- Sealed to IP67
- Up to 15 million cycles
- Maintenance-free operation
- RoHS compliant

Applications

- Turret control
- Weapon system control
- Vehicle drive control
- Laser sighting

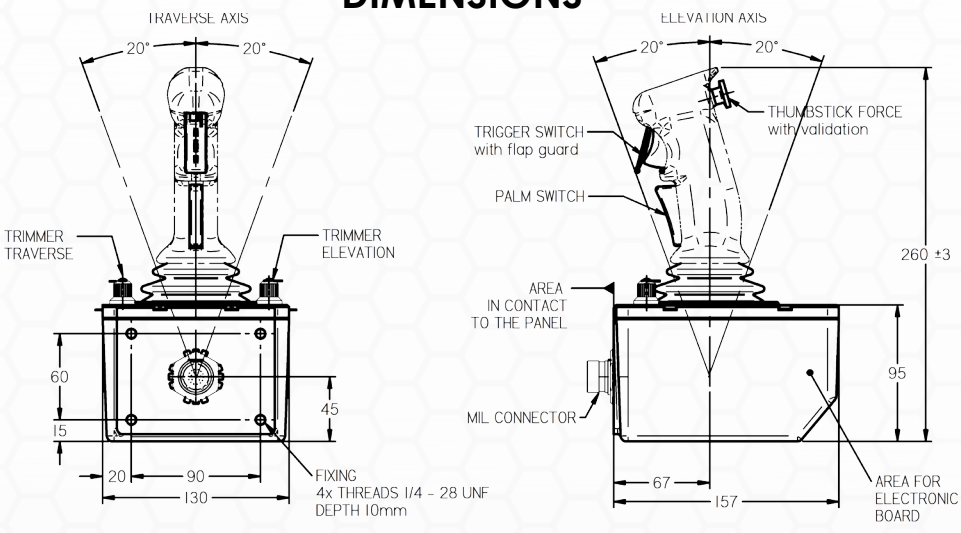
Standards

- MIL STD 810D /461
- MIL STD 1472F
- GAM EG13

Contact our technical sales team about your requirements.

Mechanical characteristics	
Travel Angle	±20° ±10%
Operating Force	from 15 N to 35 N
Maximum applied force	1000 N
Lever action	return to neutral position
Limiter	○ □
Handle & button(s)	standard or custom design
Mechanical life	15,000,000 all directions
Electrical characteristics	
Axis sensor technology	Hall effect, potentiometer, optical encoder or switches
Supply voltage	5, 10 or 24 VDC
Output interface	voltage, current, PWM, serial, USB, CAN
Electrical connection	MIL connector(s), according to your need
Return to center precision	±3% (full scale)
General characteristics	
Base material	aluminum alloy painted
Handle material	aluminum alloy painted
Sealing	IP67 IEC 60529
Dielectric strength	500V / 15s
Insulation resistance	> 100 Mohms @ 500V
Operating temperature	-40°C to 71°C
Storage temperature	-55°C to 85°C

DIMENSIONS



Specifications Subject To Change Without Notice Made in USA

GRIPS

- **G10** *universal hand grip*
- **G50** *cobra & B8 style grip*
- **G60** *cyclic & collective grip*
- **G70** *side arm grip*



Specifications Subject To Change Without Notice

Universal Hand Grip

The most versatile handle



G10 series' grips are designed and developed to meet the majority of our customers' needs for a precise finger operated control. Our modulable grip made of cast aluminum alloy provides a large variety of configuration depending on your choice of shape, switch, electronic interface and termination style.

Key features

- Tailored-to-Your Needs solution
- Military & Industrial grade
- Comfortable use
- Cast aluminum alloy
- Rugged construction
- Modular concept
- Up to 7 functions
- Analog or digital outputs
- Compatible with joystick base
- Op. temperature -40°C to 71°C
- RoHS compliant

Applications

- Target acquisition system
- Armoured vehicule fire control
- Weapons systems control
- Tracking & flight control
- Robotic & Industrial system
- Control pilot

Standards

- MIL STD 810D /461
- RTCA DO 160E
- GAM EG13

G10 series' solutions find commonly their place in industrial & military applications, but also in the simulation world.

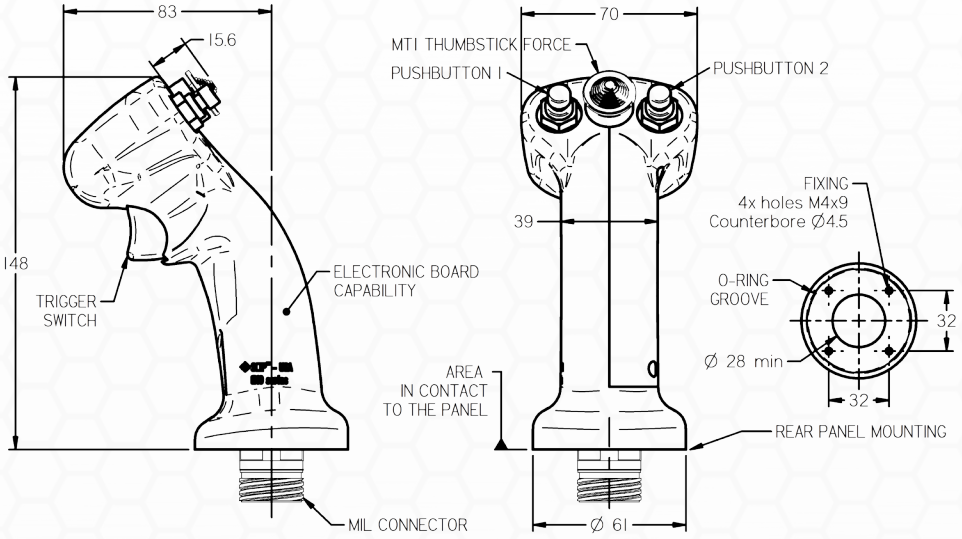
The four major criteria that define a G10 hand grip are :

- choice of grip shape and finish,
- choice & position of switches, thumbstick and trigger,
- choice of electrical & electronic interfaces,
- choice of mounting interface and base option,

Contact our technical sales team about your requirements.

SCIP Engineering's wide range of grip designs enable us to provide quick and precise solutions to any customer's needs or requirements, including realistic 3D views.

BASIC DIMENSIONS

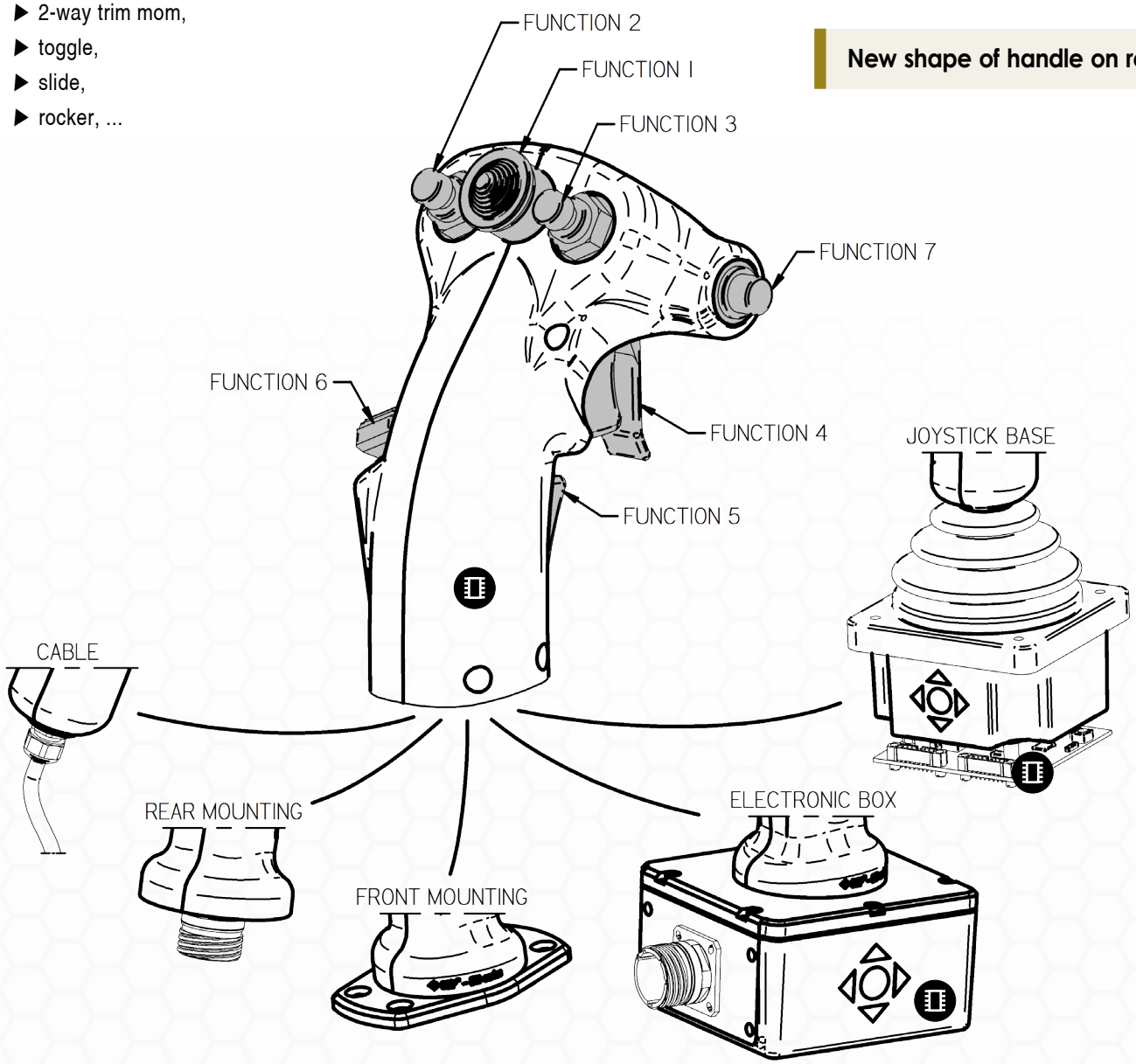


The shape of a grip is defined by its number of buttons/functions, as well as its embedded electronics and mounting type. Standard finish is a matte black polyurethane paint. The front panel can integrate 4-way trim or a miniature joystick such as a thumbstick force (MT1) or displacement (MT2) with or without a push-validation. A variety of trigger switches (F4) and palm switches (F5) types are available.

A variety of electromechanical switches available (F1, F2, F3, F6 & F7):
(with optional sealing boots & flap guards)

- pushbutton mom,
- 2-way trim mom,
- toggle,
- slide,
- rocker, ...

New shape of handle on request



ON-BOARD ELECTRONICS CAPACITY
regulated voltage, serial RS232 /422 /485, PS2, CAN, PWM, USB, ...

Cobra & B8 style Grip

Flight control handle



G50 series represents the most popular aircraft control-grip. Our molded composite plastic grips use a specific material for higher robustness and light weight. Optimized design allows easy maintenance and fast repair. Our custom configurations include 3 ergonomic heads, a variety of MIL switches and different termination styles.

Key features

- Aircraft & Defense industry
- Use natural hand position
- Non-reflecting surface
- Standard MIL-specs design
- Single or two part(s) construction
- Rugged molded plastic grip
- Fast switches replacement
- Engraving & marking available
- Choice of mounting type
- Highly economic handle
- Lightweight
- RoHS compliant

Applications

- Fixed-wing aircraft control
- Rotary-wing aircraft control
- Flight control
- Flight simulators

Standards

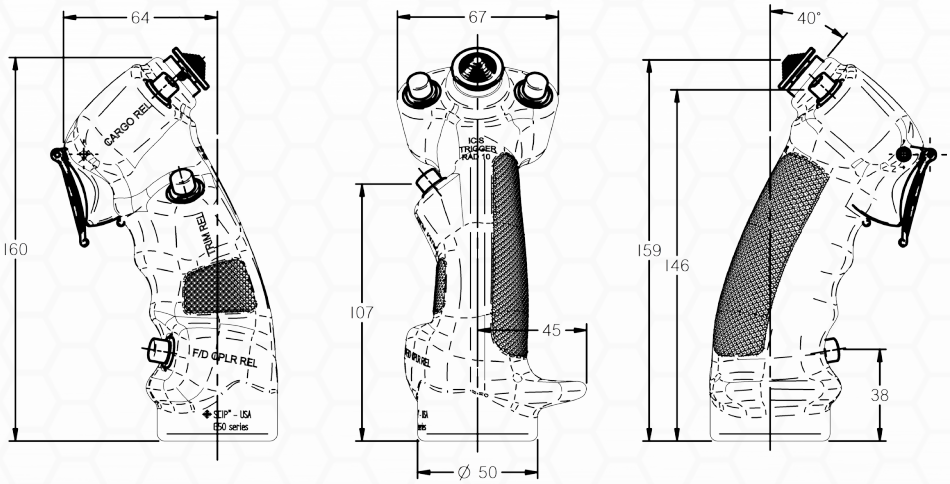
- MIL STD 810D /461
- MIL DTL 25561B
- RTCA DO160E

G50 grips are pre-bored for an usual buttons integration (see table below). Upon request, we can customize your handle to integrate other types of electromechanical buttons & fixing elements.

Contact our technical sales team about your requirements.

large bore	4-way trim momentary action switch or miniature joystick, MT1 series thumbstick force or miniature joystick, MT2 series thumbstick displacement *optional fifth way with center validation switch*
small bore	pushbutton switch 2 positions momentary action Commercial or Military grade choice of operating force 11 or 18 N (low-level 10mA@30mV) available with red, black or gray button color *optional pushbutton switch 3 positions momentary action*
trigger switch	MTS series single or two detents action available with red, black or gray trigger color *optional red or black flap guard*
termination	integral connector or wire harnesses
fixing	threaded bushing mount or tube mounting *optional joystick base for movement simulation*

BASIC DIMENSIONS

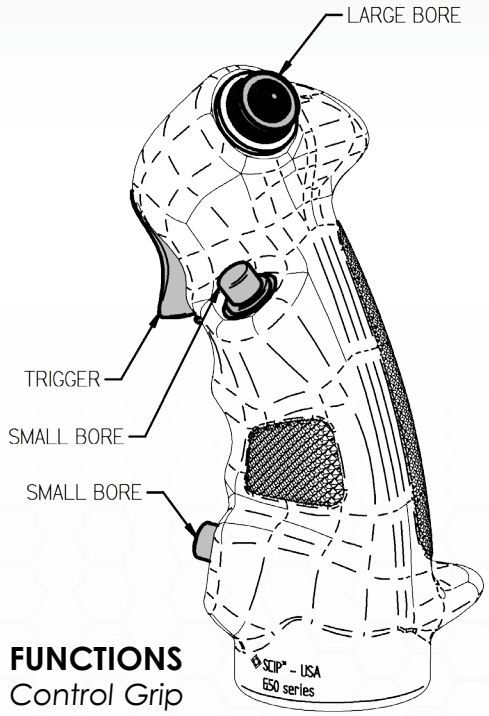


Cobra Control Grip representation

Specifications Subject To Change Without Notice Made in USA

G50 series

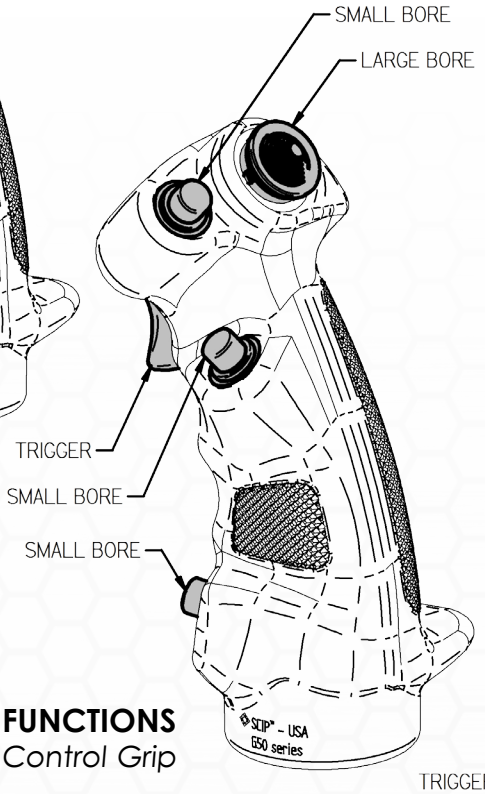
G50 series' hand grips can hold up to 6 different functions, trigger switch included. An overmolded metal insert within the base allows easy connection to your mounting (electrical connection and fixing element). We can also identify functions with engraving or any other marking process on all grip surfaces.



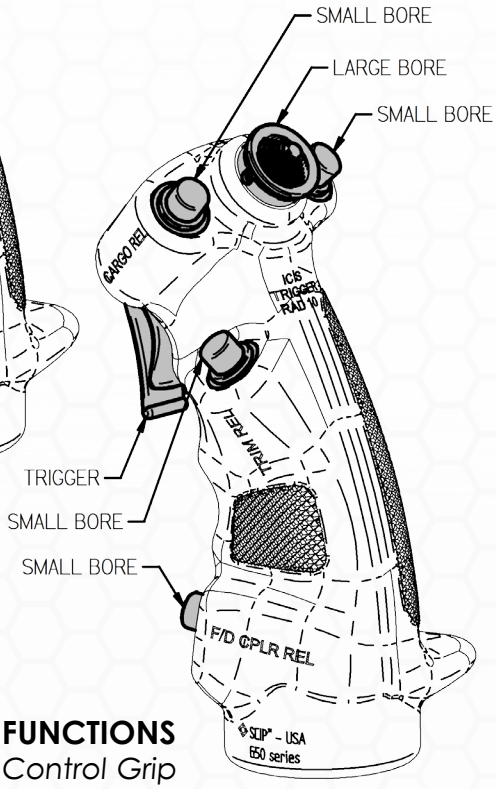
4 FUNCTIONS
Control Grip

☛ *Example of a low-cost grip comprising of:*

- *a wire harness,*
- *a standard mounting type,*
- *commercial grade buttons.*



5 FUNCTIONS
B8 /MC-2 Control Grip



6 FUNCTIONS
Cobra Control Grip

**Provide us your specification,
we will quickly adapt our handle
that will meet all your requirements
with the guarantee of high-level quality.**

Cyclic & Collective Grip

Modular control handle



G60 series is innovative, the aluminum control grip is made of several modules that can be nested together to form a multi-functional product. Design a new module to meet a precise need is fast & easy. Collective head, indicator light, backlighting and others. Flexibility of this concept redefines the limits of grip integration.

Product datasheet available soon, contact our technical sales team.

G70 series

Side Arm Grip

Embedded miniature joystick



G70 series' shape fits perfectly in armrest of control seat. His specific design coupled to a precise thumb operated control facilitates cursor control without fatigue of use. Push-buttons are arranged at each finger ends and optional electronic interface is available to communicate with most system requirements.

Product datasheet available soon, contact our technical sales team.

Specifications Subject To Change Without Notice Made in USA

Lever Hand Control

Contactless technology



Single-axis hand controller with electronic output designed for use in a variety of off-road applications. This control unit is equipped with Hall-effect technology, non-contact sensor that can be programmed for analog or PWM output. This assembly is IP67 sealed allowing to be mounting inside or outside the cab.

Product datasheet available soon, contact our technical sales team.

Rugged Simple Lever

A concentrated technology



Simple lever made of aluminum alloy allows to meet the most demanding application when there is no space inside the control panel. Fully modulable in angle, notches and friction, electrical contacts and analog output sensors, this design is the best choice in high-end lever control of the market.

Product datasheet available soon, contact our technical sales team.

Rugged Double Lever

A concentrated technology



Composed of two L10 series. Each lever can be operated independently or jointly thanks to mechanical lock/unlock system integrated in handles. This sealed and rugged double lever keeps fully characteristics of L10 series in a concentrated area above the control panel. Commonly used for marine applications.

Product datasheet available soon, contact our technical sales team.

W10 series

Compact Control Wheel

Robustness & Precision



Standard control station commonly used in simulation's world. More economical to buy and use, come with a USB interface or direct outputs, a vertical or horizontal mount and custom colour. This rugged and compact wheel fits perfectly to simulate gunner or commander in military vehicles and battle tank. Optional redundant outputs.

Product datasheet available soon, contact our technical sales team.

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W20 series

Heavy Control Wheel

Full modular technolgy



W20 series is the fully modulable version of SCIP control wheels. Custom handles and switches, tailor-mades' embedded electronic allows to be compliant with a large majority of our customers' needs. Its proven design gets success in all environmental testing, that's ideal for the most critical missions.

Product datasheet available soon, contact our technical sales team.

Y50 series

Ergonomic Control Yoke

Simple & Efficient design



Y50 series is made of an aluminum monolithic part. Easy to use thanks to all buttons placed at the level of pilot's thumbs, his ergonomic handles provides comfort and perfect grip. More economical to buy, best ratio in quality/price, this design fits perfectly to commercial, regional and business jets around the world.

Product datasheet available soon, contact our technical sales team.

Modular Control Yoke

Full custom head



This yoke offers a large choice of functionalities thanks to these handle head fully customizable. Its design allows a lateral or horizontal hand grip control. Design a new handle head to meet a precise need is fast & easy. SCIP has a solution to meet the most demanding integration in jet control wheels.

Product datasheet available soon, contact our technical sales team.

PCU-S series

Small Handheld Controller

Rugged frame up to 6 functions



Durable and lightweight game style unit control. His ergonomic design allows for comfortable extended use. PCU-S series accommodates miniature joysticks, with a variety of button styles and colours. Ideal for controlling unmanned vehicles, unattended ground sensors and other remote controlled applications.

Product datasheet available soon, contact our technical sales team.

Specifications Subject To Change Without Notice Made in USA

PCU-L series

Large Handheld Controller

Up to 12 buttons



PCU-L series provides large functionalities in a lightweight package. Rugged and high-reliability in extreme condition, up to 12 embedded functions comprised of trigger and palm switches in each side, this aluminum handheld unit will be the ideal solution for ground mission or controlling unmanned systems and weapons.

Product datasheet available soon, contact our technical sales team.

PCU-XL series

E-Large Handheld Controller

Up to 20 buttons



The most comprehensive military portable control unit, up to 20 buttons that fits perfectly under user's fingers. This extra-large controller has thin-wall, investment cast aluminum for high strength and low weight. A variety of buttons, custom paint and electronic interface are available to meet the most demanding applications. Optional flat panel LCD will be available soon.

Product datasheet available soon, contact our technical sales team.

PCU-AERO series

Ergonomic Handheld Controller

Limitless



PCU-AERO series is dedicated to Aerospace applications. An ergonomically designed dual-handled grip providing all precise control functionality for camera system and others FLIR family. Fully customizable, this mighty controller provides a ruggedized solution and reliable control when operating in extreme environments.

Product datasheet available soon, contact our technical sales team.

PCU-TACT series

Tactical Handheld Controller

High-end technology



Experimental tactical command in progress. Built with aluminum alloy for robustness and lightweight, it integrates 5.6" touch screen for video, menu information and mapping. This unit will improve operator effectiveness by becoming the warfighter's interface to mission situational awareness.

Product in development, contact our technical sales team.

Specifications Subject To Change Without Notice Made in USA



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SCIP™
Human-Machine Interface Builder