

*SENDER***Top**TM

LIMIT SWITCH BOXES





LGM ENGINEERING

EXPERIENCE, DYNAMISM, **SOLUTION**

LGM ENGINEERING is the leading company in the supply of industrial components for fluid control, process automation and regulation.

The MISSION of LGM ENGINEERING is to contribute significantly to the improvement of the global production environment, providing reliable and innovative technical solutions with competence and professionalism. LGM ENGINEERING has been working with experience in the sector for over 40 years, serving its partners as designer, supplier and manufacturer of industrial components.



COMPLETE PRODUCT RANGE

LGM ENGINEERING portfolio includes box limit switches, solenoid valves, air filter regulators, positioners, pressure switches, fittings & all the other components destined to pneumatic and process industry

QUALITY DRIVEN PRODUCT PORTFOLIO

Our research and development ensures cutting edge products are available for multiple applications across multiple industries

REDUCED COST OF OWNERSHIP FOR YOUR PLANT

LGM ENGINEERING products reduce long term cost of ownership and provides long lasting solutions

GLOBAL VISION, LOCAL SERVICE

Services and after sales are in the heart of our organization, bringing a customer centred approach from the first contact up to the the post sales phase

SECTORS & APPLICATIONS



Fire
Fighting



Textile



Chemestry



Mining



Marine
industry



Packaging



Hvac



Oil & gas



Automotive



Ceramic



Food e
beverage



On shore &
Off shore platform



Power &
renewable energy



Water &
Wastewater



Chemical &
petrolchemical



Pharma &
cosmetics



SENDERTop™



SENDE



ERTop™



LIMIT SWITCH BOX

WHAT IS IT

A limit switch box is an electromechanical device that consists of an actuator mechanically linked to a set of contacts included in an enclosure, generally in resin, aluminum or stainless steel.

There are different types of switches/sensors that can be included into a box: when the cam comes into contact or in proximity with the switch/sensor, the device operates the contacts to open/close an electrical connection. A limit switch box provides a visual and electrical remote position feedback on automated valves.



There are different types of switches/sensors that can be included into a box:

- Mechanical Switches
- Inductive Sensors
- Magnetic Switches

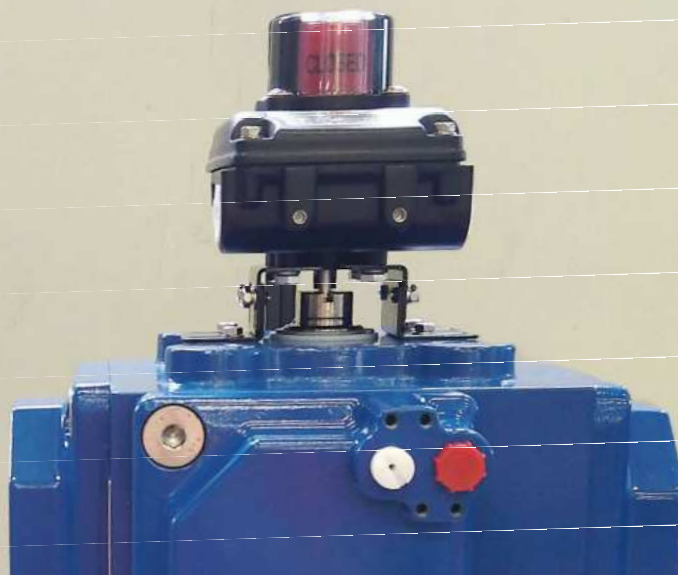
Also defined as “Proximity”

APPLICATIONS

Sendertop covers a wide range of applications.

Designed for extremely low / high temperatures , limit switch boxes.

Are suitable to operate in different environments in different locations worldwide.



WHY SENDERTOP

SENDERTOP line has born from the experience by LGM ENGINEERING in Italy, an independent family owned company. Throughout the years, numerous units has been sold on the market in different industries, customers, OEM, End users EPCs.

WHY TO CHOOSE SENDERTOP BENEFITS & PROS

A black and white photograph of a classical marble statue of a woman, likely a Roman or Greek deity or noblewoman, shown from the waist up in profile, looking towards the right. She is wearing a draped garment.

MADE IN ITALY

SENDERTOP facility is entirely located in Italy

A black and white photograph of a modern office interior. It features a curved desk, several ergonomic office chairs, and large windows in the background, creating a professional and contemporary atmosphere.

MADE BY AN ITALIAN INDEPENDENT COMPANY

as LGM ENGINEERING is



QUICK DELIVERY

on non standard items from the date of order, whether not already available on stock



SENDERTOP™

SENDERTOP LINE CAN BE USED IN DIFFERENT SECTORS:

Oil & Gas, Industry, Chemical, Petrolchemical, Ceramic, HVAC, Energy and others



STANDARD ITEMS READY ON THE SHELF

By the producer LGM maintains on stock the more popular figure



COST EFFICIENCY

Sendertop line maintains the best cost efficiency ratio on the market

QUICK INTRODUCTION TO ATEX



TYPE OF PROTECTION

Zoning definition

Manufacturer directive

ATEX Gas (or ATEX Dust)

ATEX Gas (or ATEX Dust)



Zone 2 (or 22)

Category 3G/2G/1G (or 3D/2D/1D)



Zone 1 (or 21)






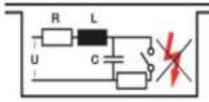





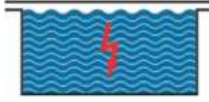

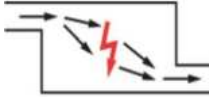

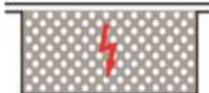
Category 2G/1G (or 2D/1D)



Zone 0 (or 20)*

Category 1G (or 1D)

*Mining not considered in the chart

PROTECTION SYMBOL	ZONE 1 2 3	DESCRIPTION	DRAWING
d		type of protection in which the parts which can ignite an explosive atmosphere are placed in an enclosure which can withstand the pressure developed during an internal explosion of an explosive mixture and which prevents the transmission of the explosion to the explosive atmospheres surrounding the enclosure	
e		type of protection in which measures are applied so as to prevent with a higher degree of safety the possibility of excessive temperatures and of the occurrence of arcs or sparks in the interior and on the external parts of electrical apparatus, which does not produce them in normal service.	
i ia ib ic		type of protection when no spark or any thermal effect in the circuit, produced in the test conditions prescribed in the standard (which include normal operation and specific fault conditions), is capable of causing ignition.	
m ma mb mc		type of protection in which the parts which can ignite an explosive atmosphere are enclosed in a resin sufficiently resistant to the environmental influences in such a way that this explosive atmosphere cannot be ignited by either sparking or heating which may occur within the encapsulation	
n		method of protection for electrical equipment designed so that it will not ignite the surrounding explosive atmosphere in normal operation and under certain fault conditions specified in the standard, there are 4 categories of equipment: nA (nonsparking), nC (enclosed break), nR (restricted breathing), nLz (limited energy).	
o		type of protection in which the electrical apparatus is immersed in oil.	
p		type of protection in which the protective inert gas inside the enclosure is maintained at a higher pressure than that of the surrounding atmosphere.	
q		type of protection in which the enclosure is filled with a material in a finely granulated state.	

INDEX

ST1

P. 18/19



ST2

P. 24/25



ST3

P. 30/31






STR

P. 36/37



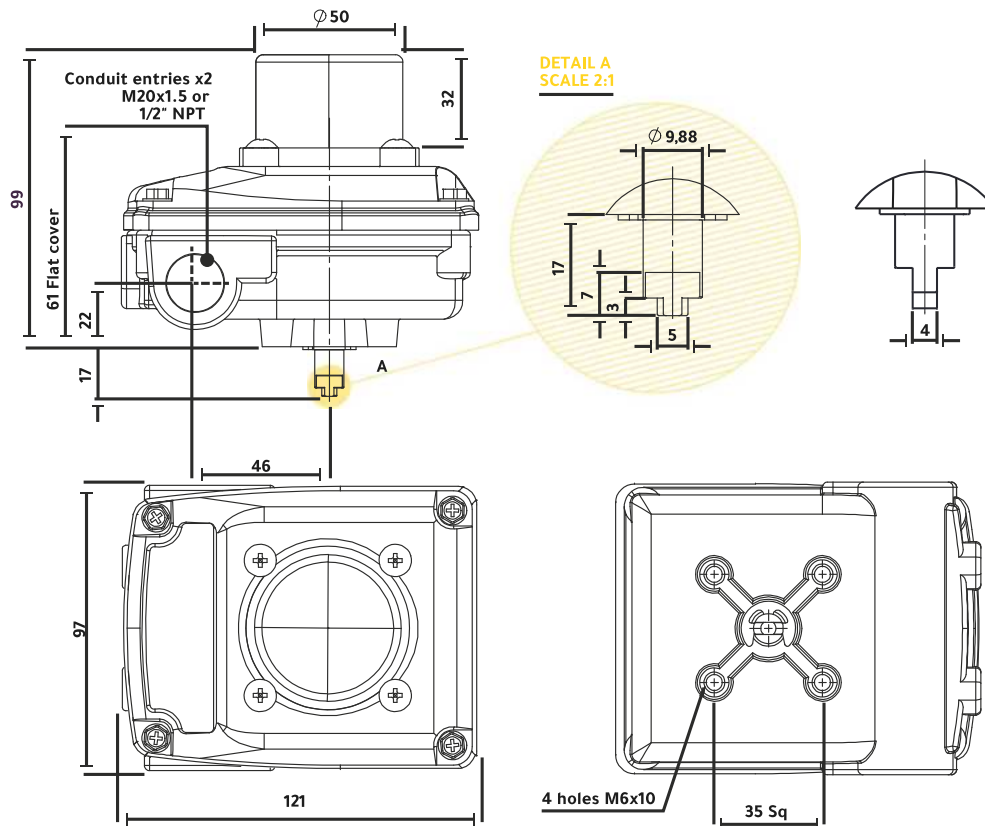
SENDER^{TOP} QUICK SELECTION GUIDE

TYPE	ALUMINIUM	STAINLESS STEEL	ENGINEERED RESIN	CERTIFICATION	TYPE OF PROTECTION
ST1	✓	✓	✗		WEATHER PROOF
ST2	✓	✓	✗		ATEX EExd EXPLOSION PROOF
ST3	✓	✓	✗		ATEX EExIa INTRINSICALLY SAFE
STR	✗	✗	✓		WEATHER PROOF ATEX EExIa INTRINSICALLY SAFE

SENDERTOP ST1



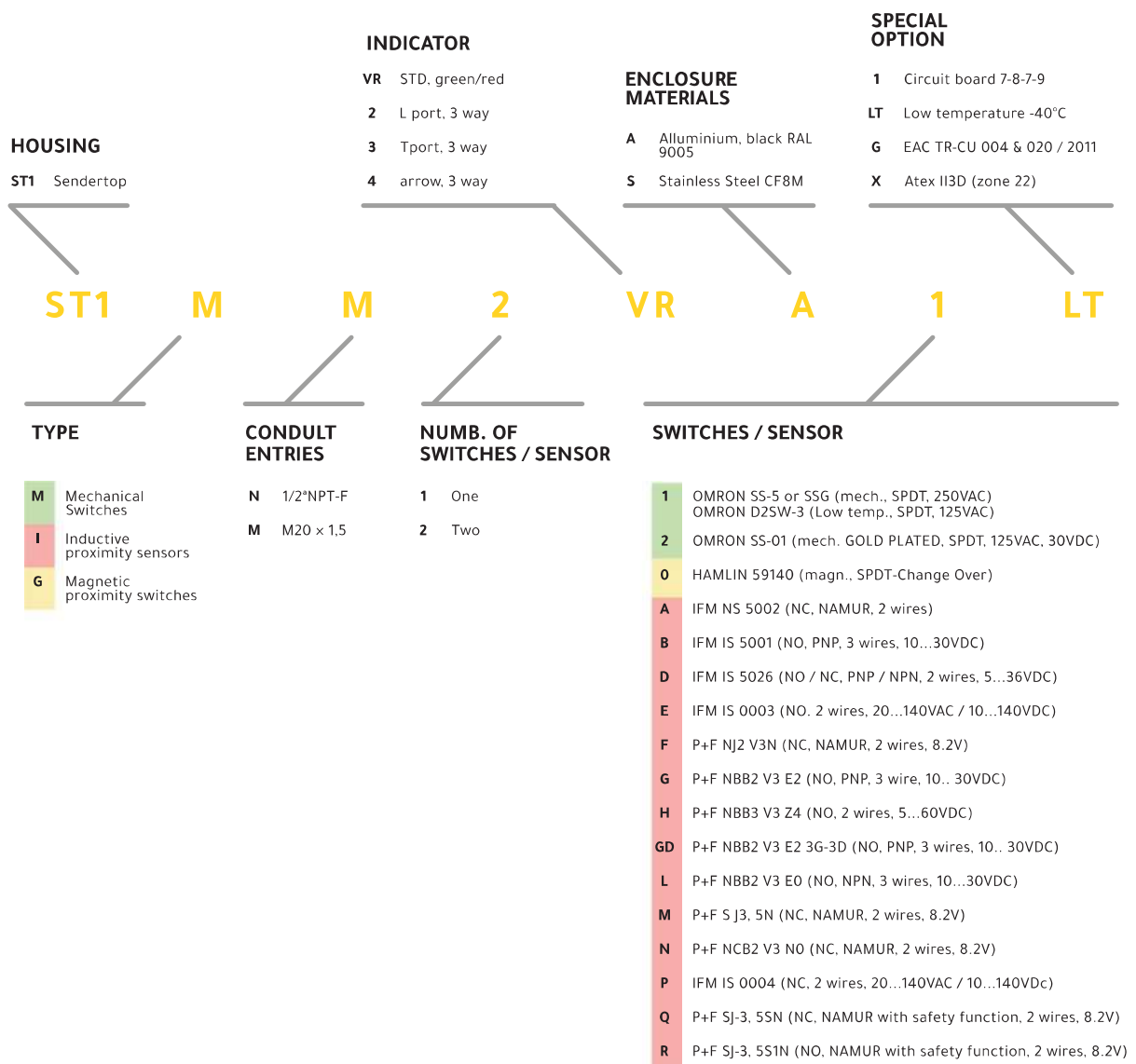
TECHNICAL SPECIFICATION



DATASHEET
OF THE INCLUDED
SWITCHES/ SENSORS
AVAILABLE UPON
REQUEST



HOW TO ORDER



ST1 INCLUDED SWITCHES/SENSORS

SENDERTOP offers one of the widest ranges of switches in the market, providing the best switch or sensor solution for each specific application

1 - OMRON SS-5 or SSG

RATING:
5A@125 VAC
3A@ 250 VAC
SPDT SILVER PLATED
TYPE: ELECTRO MECHANICAL
BRAND: OMRON



1 - OMRON D2SW-3

RATING:
3A@125VAC
SPDT SILVER PLATED
TYPE: ELECTRO MECHANICAL
BRAND: OMRON



2 - OMRON SS-01

RATING:
0,1@ 125VAC
0,1A @ 30VDC
GOLD PLATED
TYPE: ELECTRO MECHANICAL
BRAND: OMRON



0 - HAMLIN 59140

RATING:
0,25A@175VDC
0,18A@ 120VAC
TYPE: MAGNETIC PROXIMITY SWITCHES
BRAND: HAMLIN



A - IFM NS 5002

RATING:
7,5... 30VDC
TYPE: INDUCTIVE SENSOR
2 WIRES
NAMUR
NORMALLY CLOSED
BRAND: IFM



B - IFM IS 5001

RATING:
10...30VDC
TYPE: INDUCTIVE SENSOR
3 WIRES
NORMALLY OPEN, PNP
BRAND: IFM



D - IFM IS 5026

RATING:
5...36VDC
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN, NORMALLY CLOSED,
PNP/NPN
2 WIRES
BRAND: IFM



E - IFM IFM IS 0003

RATING:
20...140VAC
10...140VDC
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN
2 WIRES
BRAND: IFM



P - IFM IS 0004

RATING:
20...140VAC
10...140VDC
TYPE: INDUCTIVE SENSOR
NORMALLY CLOSED
2 WIRES
BRAND: IFM



G -P+F NBB2 V3 E2

RATING:
10...30VDC
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN
PNP
3 WIRES
BRAND: P+F



H - P+F NBB3 V3 Z4

RATING:
5...60VDC
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN
2 WIRES
BRAND: P+F



GD - P+F NBB2 V3 E2 3G-3D

RATING:
10...30VDC
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN
PNP
3 WIRES
BRAND: P+F



L - P+F NBB2 V3 E0

RATING:
10...30VDC
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN
NPN
BRAND: P+F



M - P+F S J3, 5N

RATING:
8.2V
TYPE: INDUCTIVE SENSOR
NORMALLY CLOSED
NAMUR
2 WIRES
BRAND: P+F



N - P+F NCB2 V3 N0

RATING: 8.2V
TYPE: INDUCTIVE SENSOR
NAMUR
2 WIRES
NORMALLY CLOSED
BRAND: P+F



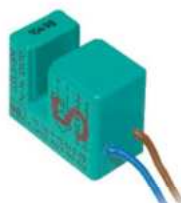
F - P+F NJ2 V3 N

RATING:
8.2V
TYPE: INDUCTIVE SENSOR
NORMALLY CLOSED
NAMUR
2 WIRES
BRAND: P+F



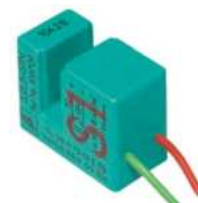
**Q - P+F SJ 3, 55N
(Nc, NAMUR with safety function,
2 wires, 8.2V)**

RATING:
8.2V
TYPE: INDUCTIVE SENSOR
NORMALLY CLOSED
NAMUR WITH SAFETY FUNCTION
2 WIRES
BRAND: P+F



**R - P+F SJ-3, 551N
(Nc, NAMUR with safety function,
2 wires, 8.2V)**

RATING:
8.2V
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN
NAMUR WITH SAFETY FUNCTION
2 WIRES
BRAND: P+F



SENDERTOP ST2

ATEX EEXd
EXPLOSION PROOF

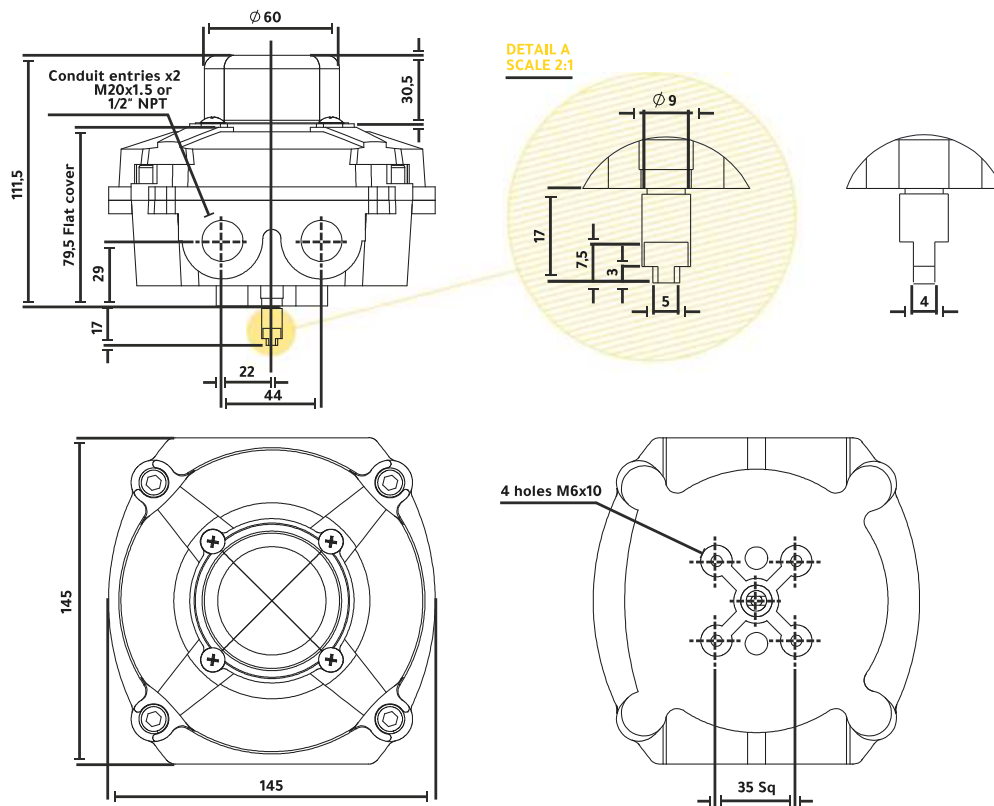




SENDERTOP ST2 is the compact limit switch box for hazardous areas,
 with explosionproof protection method



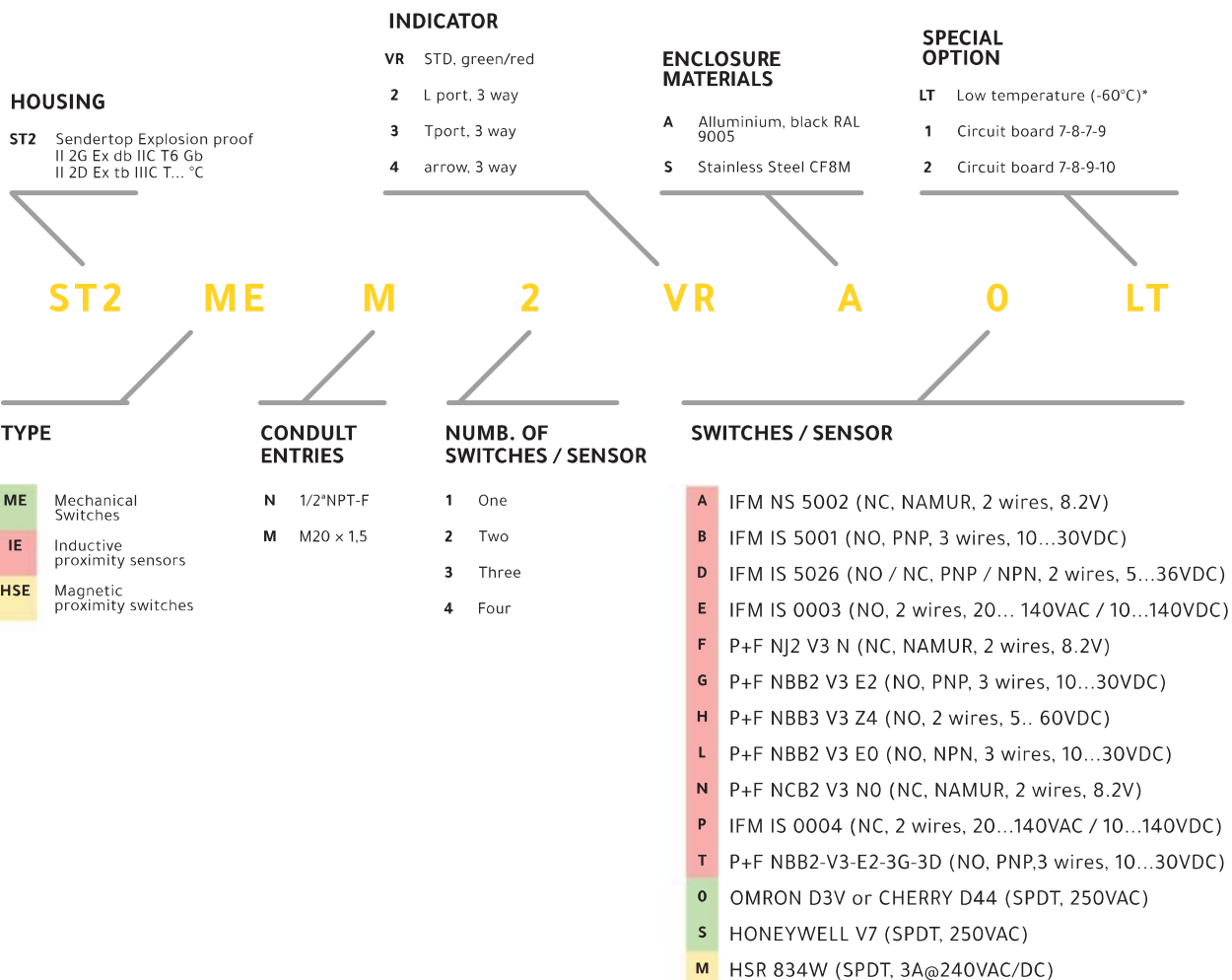
TECHNICAL SPECIFICATION



DATASHEET
OF THE INCLUDED
SWITCHES/ SENSORS
AVAILABLE UPON
REQUEST



HOW TO ORDER



ST2 INCLUDED SWITCHES/SENSORS

SENDERTOP offers one of the widest ranges of switches in the market, providing the best switch or sensor solution for each specific application

A - IFM NS 5002

RATING:
7,5...30VDC
TYPE: INDUCTIVE SENSOR
2 WIRES
NAMUR
NORMALLY CLOSED
BRAND: IFM



B - IFM IS 5001

RATING:
10...30VDC
TYPE: INDUCTIVE SENSOR
3 WIRES
NORMALLY OPEN, PNP
BRAND: IFM



D - IFM IS 5026

RATING:
5...36VDC
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN, NORMALLY CLOSED,
PNP/NPN
2 WIRES
BRAND: IFM



E - IFM IFM IS 0003

RATING:
20...140VAC
10...140VDC
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN
2 WIRES
BRAND: IFM



P - IFM IS 0004

RATING:
20...140VAC
10...140VDC
TYPE: INDUCTIVE SENSOR
NORMALLY CLOSED
2 WIRES
BRAND: IFM



G -P+F NBB2 V3 E2

RATING:
10...30VDC
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN
PNP
3 WIRES
BRAND: P+F



H - P+F NBB3 V3 Z4

RATING:
5...60VDC
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN
2 WIRES
BRAND: P+F



L - P+F NBB2 V3 E0

RATING:
10...30VDC
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN
NPN
BRAND: P+F



N - P+F NCB2 V3 N0

RATING: 8.2V
TYPE: INDUCTIVE SENSOR
NAMUR
2 WIRES
NORMALLY CLOSED
BRAND: P+F



F - P+F NJ2 V3 N

RATING:
8.2V
TYPE: INDUCTIVE SENSOR
NORMALLY CLOSED
NAMUR
2 WIRES
BRAND: P+F



L - P+F NBB2 V3 E0

RATING:
10...30VDC
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN
NPN
BRAND: P+F



S - HONEYWELL V7

RATING:
3(1) A 250V
TYPE: ELECTRO MECHANICAL
BRAND: HONEYWELL



M - HSI SENSING HSR 834W

RATING:
3A@240 VAC/DC
TYPE: SPDT MAGNETIC PROXIMITY SWITCHES
BRAND: HSI SENSING



O - OMRON D3V or CHERRY D44

RATING:
10(3) A 250V
TYPE: ELECTRO MECHANICAL
BRAND: OMRON



SENDERTOP ST3

ATEX EEXia
INTRINSICALLY
SAFE

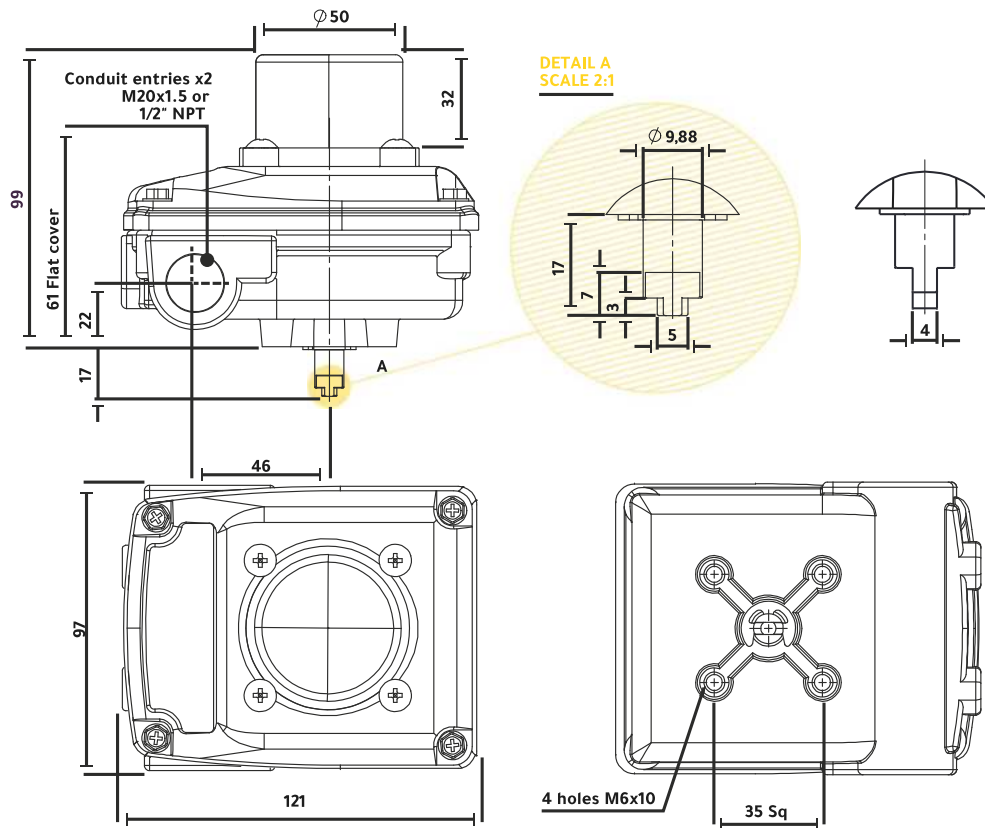




SENDER TOP ST3 is the box limit switch suitable for intrinsically safe area in which



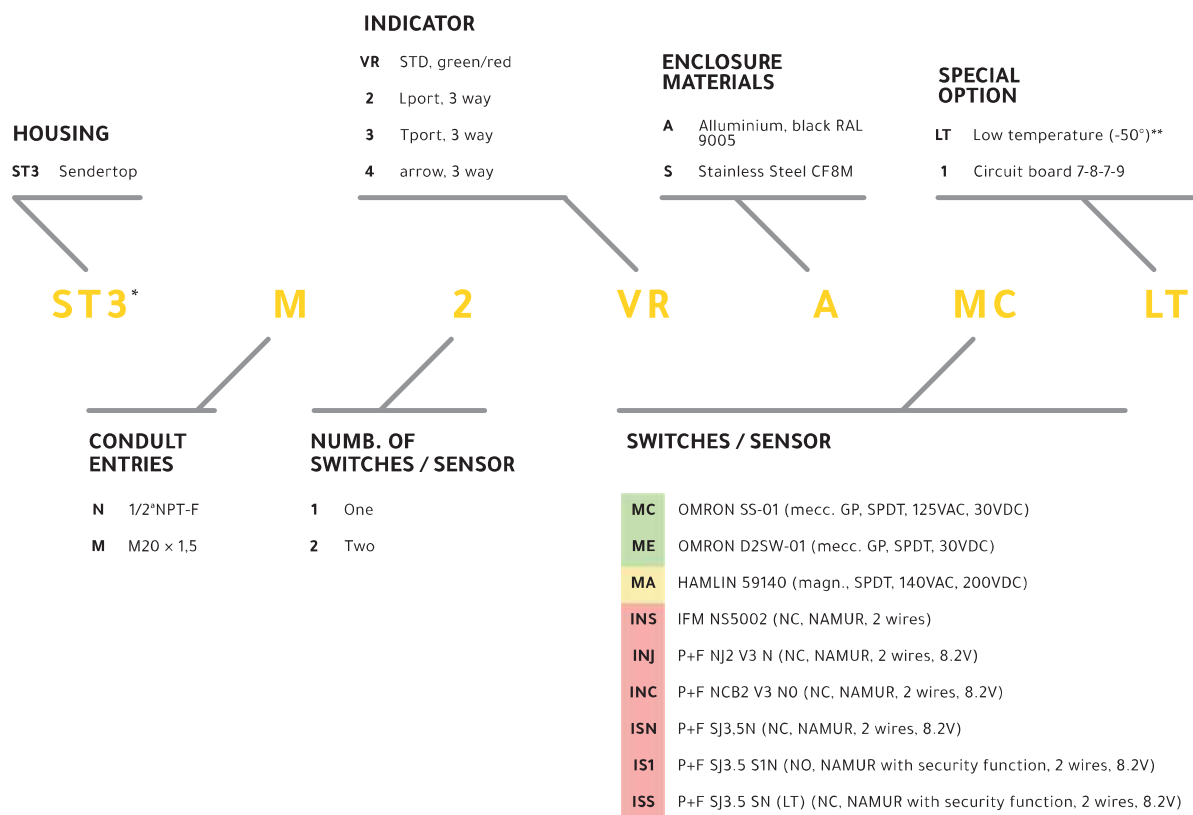
TECHNICAL SPECIFICATION



DATASHEET
OF THE INCLUDED
SWITCHES/ SENSORS
AVAILABLE UPON
REQUEST



HOW TO ORDER



*Used with the signal coming from the Barrier
 ** Refer to LGM ENGINEERING sales office

ST3 INCLUDED SWITCHES/SENSORS

SENDERTOP offers one of the widest ranges of switches in the market, providing the best switch or sensor solution for each specific application

MC - OMRON SS-01

RATING:
0.1A@125VAC
0.1A @ 30VDC
GOLD PLATED
TYPE: ELECTRO MECHANICAL
BRAND: OMRON



ME - OMRON D2SW-01

RATING:
0.1A@30VDC
G PLATED
TYPE: ELECTRO MECHANICAL
BRAND: OMRON



MA - HAMLIN 59140

RATING:
0.25A@175VDC
0.18A@120VAC
TYPE: MAGNETIC PROXIMITY SWITCHES
BRAND: HAMLIN



INS - IFM NS 5002

RATING:
7.5...30VDC
TYPE: INDUCTIVE SENSOR
2 WIRES
NAMUR
NORMALLY CLOSED
BRAND: IFM



INJ - P+F NJ2 V3N

RATING:
8.2V
TYPE: INDUCTIVE SENSOR
NORMALLY CLOSED
NAMUR
2 WIRES
BRAND: P+F



INC - P+F NCB2 V3 N0

RATING: 8.2V
TYPE: INDUCTIVE SENSOR
NAMUR
2 WIRES
NORMALLY CLOSED
BRAND: P+F



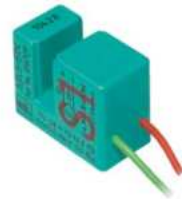
ISN - P+F S J3, 5N

RATING:
8.2V
TYPE: INDUCTIVE SENSOR
NORMALLY CLOSED
NAMUR
2 WIRES
BRAND: P+F



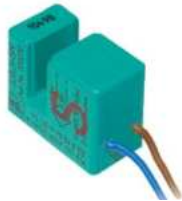
IS1 - P+F SJ 3, 5S1N

RATING:
8.2V
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN
NAMUR WITH SAFETY FUNCTION
2 WIRES
BRAND: P+F



ISS - P+F SJ 3, 5SN

RATING:
8.2V
TYPE: INDUCTIVE SENSOR
NORMALLY CLOSED
NAMUR WITH SAFETY FUNCTION
2 WIRES
BRAND: P+F



SENDERTOP STR

WEATHER PROOF /
ATEX EEXia INTRINSICALLY SAFE

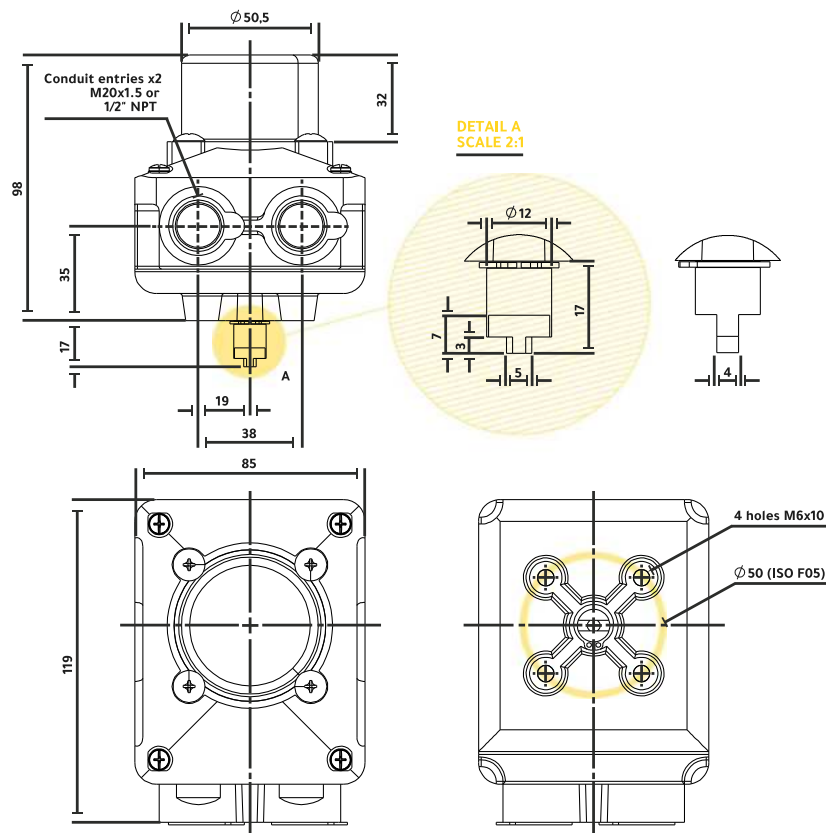




SENDERTOP STR is the engineered resin box limit switch suitable for multipurpose application in safe and intrinsically safe areas

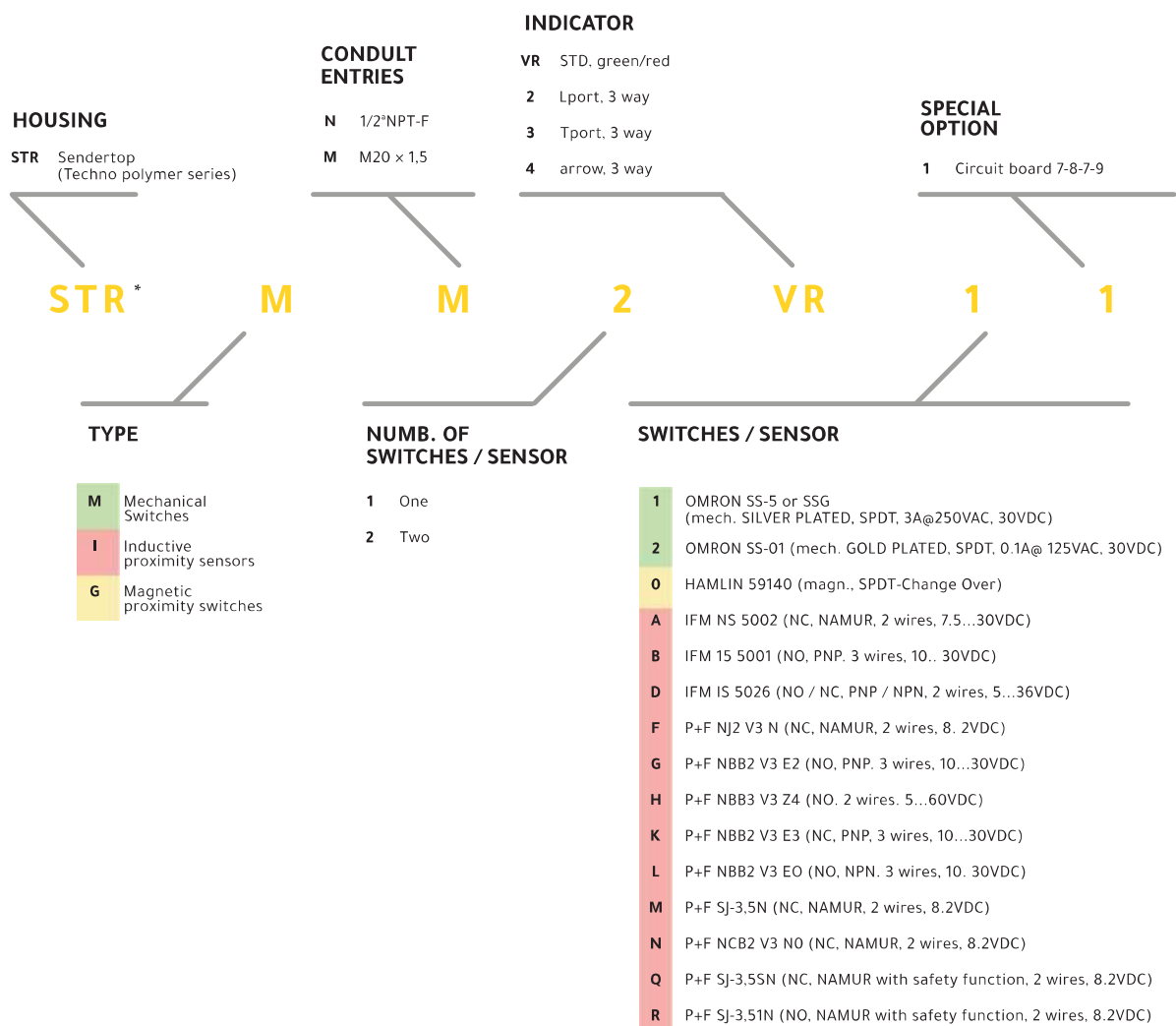


TECHNICAL SPECIFICATION



DATASHEET
OF THE INCLUDED
SWITCHES/ SENSORS
AVAILABLE UPON
REQUEST

HOW TO ORDER



*Bracket included as standard

STR INCLUDED SWITCHES/SENSORS

SENDERTOP offers one of the widest ranges of switches in the market, providing the best switch or sensor solution for each specific application

1 - OMRON SS-5 or SSG

RATING:
5A@125 VAC
3A@ 250 VAC
SPDT SILVER PLATED
TYPE: ELECTRO MECHANICAL
BRAND: OMRON



2 - OMRON SS-01

RATING:
0,1A@ 125VAC
0,1A @ 30VDC
GOLD PLATED
TYPE: ELECTRO MECHANICAL
BRAND: OMRON



0 - HAMLIN 59140

RATING:
0,25A@175VDC
0,18A@120VAC
TYPE: MAGNETIC PROXIMITY SWITCHES
BRAND: HAMLIN



A - IFM NS 5002

RATING:
8,2 VDC NOMINAL
TYPE: INDUCTIVE SENSOR
2 WIRES
NAMUR
NORMALLY CLOSED
BRAND: IFM



B - IFM IS 5001

RATING:
10.30VDC
TYPE: INDUCTIVE SENSOR
3 WIRES
NORMALLY OPEN, PNP
BRAND: IFM



D - IFM IS 5026

RATING:
5...36VDC
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN, NORMALLY CLOSED,
PNP/NPN
2 WIRES
BRAND: IFM



F - P+F NJ2 V3N

RATING:
8,2V
TYPE: INDUCTIVE SENSOR
NORMALLY CLOSED
NAMUR
2 WIRES
BRAND: P+F



G - P+F NBB2 V3 E2

RATING:
10...30VDC
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN
PNP
3 WIRES
BRAND: P+F



H - P+F NBB3 V3 Z4

RATING:
5...60VDC
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN
2 WIRES
BRAND: P+F



K - P+F NBB2 V3 E2 3G-3D

RATING:
10...30VDC
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN
PNP
3 WIRES
BRAND: P+F



L - P+F NBB2 V3 E0

RATING:
10...30VDC
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN
NPN
BRAND: P+F



M - P+F SJ3, 5N

RATING:
8,2V
TYPE: INDUCTIVE SENSOR
NORMALLY CLOSED
NAMUR
2 WIRES
BRAND: P+F



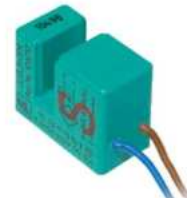
N - P+F NCB2 V3 N0

RATING: 8,2V
TYPE: INDUCTIVE SENSOR
NAMUR
2 WIRES
NORMALLY CLOSED
BRAND: P+F



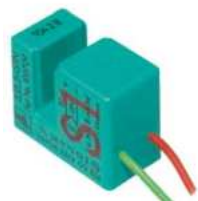
Q - P+F SJ-3, 5SN

RATING:
8,2V
TYPE: INDUCTIVE SENSOR
NORMALLY CLOSED
NAMUR WITH SAFETY FUNCTION
2 WIRES
BRAND: P+F



R - P+F SJ-3, 5S1N

RATING:
8,2V
TYPE: INDUCTIVE SENSOR
NORMALLY OPEN
NAMUR WITH SAFETY FUNCTION
2 WIRES
BRAND: P+F



ACCESSORIES, BRACKETS & MOUNTING KITS

LGM ENGINEERING mounting kits series have been designed to mount almost any device on a NAMUR pattern actuator VDI/VDE 3845. For linear application LGM ENGINEERING is able to design and customize specific linear or universal mounting kit for rotary and linear applications.

TYPE	MATERIAL	DESCRIPTION	CODE
KIT BRACKETS	PAINTED STEEL	KIT MOUNTING BRACKETS FOR ST1/ST2/ST3, SUITABLE DIMENSIONS: 30x80 and 30x130mm (screws included)	XM051287+SCREWS
KIT BRACKETS	AISI 304	KIT MOUNTING BRACKETS FOR ST1/ST2/ST3 SUITABLE FIXING DIMENSIONS: 30x80 and 30x130mm (screws included)	XM051290+SCREWS
KIT BRACKETS	AISI 316	KIT MOUNTING BRACKETS FOR ST1/ST2/ST3 SUITABLE FIXING DIMENSIONS: 20mm/30mm (screws included)	AKB-00626.R0.316/2200/20
3 WAY VISUAL INDICATOR	POLYCARBONATE & ABS	3 WAY VISUAL INDICATOR L-PORTS FOR ST1 & ST3	ST13-3V-VIS-L
3 WAY VISUAL INDICATOR	POLYCARBONATE & ABS	3 WAY VISUAL INDICATOR T-PORTS FOR ST1 & ST3	ST13-3V-VIS-T
3 WAY VISUAL INDICATOR	POLYCARBONATE & ABS	3 WAY VISUAL INDICATOR L-PORTS FOR ST2	ST2-3V-VIS-L
3 WAY VISUAL INDICATOR	POLYCARBONATE & ABS	3 WAY VISUAL INDICATOR T-PORTS FOR ST2	ST2-3V-VIS-T
ARROW VISUAL INDICATOR	POLYCARBONATE & ABS	ARROW VISUAL INDICATOR FOR ST13	ST13-AR
ARROW VISUAL INDICATOR	POLYCARBONATE & ABS	ARROW VIASUAL INDICATOR FOR ST2	ST2-AR
CABLES GLANDS	ENGINEERED RESIN NICHEL PLATED BRASS/ AISI 316	CABLE GLANDS SUITABLE FOR SAFE & HAZARDOUS AREAS	ON REQUEST



AUTOMATION & INSTRUMENTATION

With years of extensive knowledge & experience, LGM ENGINEERING has provided products and services worldwide for each industrial valve actuation and control application. LGM ENGINEERING is capable of designing and translate any end user specifications or AVLS to turn into reality each engineering plan. Due to that reason, LGM ENGINEERING offers a wide range of precision control and valve accessory products self-produced or in partnership with prestigious international brands.

VALVES FOR PROCESS INDUSTRY

- Valve actuation accessories
- Solenoid valves
- Piston valves
- Valves for process industry
- Medium pressure valves
- High e low pressure valves
- Air operated valves
- Hydrogen valves

CONTROLLERS

- Valve positioners
- I/P and E/P converters

MEASUREMENT

- Valve position sensors
- Transmitters and switches
- Positioners

AIR TREATMENT EQUIPMENT

- Air regulators filters
- Volume boosters
- Oil removal Filters
- Oil Fog Lubricators

ANCILLARIES

- Fittings & double ferrule fittings
- Dust excluders & much more
- Flow regulators
- Quick Exhausts and much more



SENDERTOP REFERENCE LIST

SENDERTOP has been chosen from the major OEM and plants to operate within major international projects in various industries.

END USER	MODEL SUPPLIED	END DESTINATION	APPLICATION
KUZEY MARMARA	ST3M2VRAINJ	TURKEY	OIL & GAS
ORLEN	ST2MEM2VRA0-LT	POLAND	OIL & GAS
P&R HOLDING	ST3M2VRAINJ	SWITZERLAND	PHARMACEUTICAL
RIEDHAMMER	ST1MM2VRA1	GERMANY	CERAMIC
ANDRITZ	ST3M1VRAISN	GERMANY	PULP & PAPER
SNAM	ST2HSEN2VRAM	GERMANY	OIL & GAS
ENI NEXT CHEM	ST2MEM2VRA0	GERMANY	CHEMICAL





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