



СВИДЕТЕЛЬСТВО О ТИПОВОМ ОДОБРЕНИИ
TYPE APPROVAL CERTIFICATE

Изготовитель
Manufacturer

IMI International s.r.o.

DIČ: CZ25692089

Адрес
Address

Central Trade Park, Evropska 852, 664 42 Modrice, Czech Republic

Изделие*
Product*

Пневматические и гидравлические датчики давления типа: 18 D
Pneumatic and hydraulic pressure switches type: 18 D

Код номенклатуры
Code of nomenclature

15110102

На основании освидетельствования и проведенных испытаний удостоверяется, что вышеупомянутое(ые) изделие(я) удовлетворяет(ют) требованиям Российского морского регистра судоходства.
This is to certify that on the basis of the survey and tests carried out the above mentioned item(s) complies(ly) with the requirements of Russian Maritime Register of Shipping.

часть XV "Правил классификации и постройки морских судов, изд. 2017 и раздела 12 части IV Правил технического наблюдения за постройкой судов и изготовлением материалов и изделий для судов, изд. 2016.
part XV "Rules for the classification and construction of sea-going ships, 2017 and Section 12 of Part IV of Rules for technical supervision during construction of ships and manufacture of materials and products for ships, 2016.

Настоящее Свидетельство о типовом одобрении действительно до
This Type Approval Certificate is valid until

04.09.2022

Настоящее Свидетельство о типовом одобрении теряет силу в случаях, установленных в Правилах технического наблюдения за постройкой судов и изготовлением материалов и изделий для судов.

This Type Approval Certificate becomes invalid in cases stipulated in Rules for the Technical Supervision during Construction of Ships and Manufacture of Shipboard Materials and Products.

Дата выдачи
Date of issue

04.09.2017

№ 17.00188.273

Российский морской регистр судоходства
Russian Maritime Register of Shipping

М.П.
L.S.

(подпись
signature)

Сычев А.И. / Sychev A.I.
(фамилия, инициалы)
name

*Дополнительную информацию смотри на обороте.
Additional information see overleaf.

Технические данные
Technical data

Пневматические датчики давления типа: 18 D

Pneumatic pressure switches type: 18 D

Модель ; Model;	Диапазон давления (бар); Pressure range (bar);	Перепад давления (бар); нижний диапазон; Switching pressure difference (bar), lower range;	Перепад давления (бар); верхний диапазон; Switching pressure difference (bar), upper range;	Максимальное давление (бар). Overpressure (bar).
0880241	0,2 to 2,0	0,2	0,35	50,0
0880341	0,5 to 8,0	0,35	0,85	80,0
0880441	1,0 to 16,0	0,4	1,2	80,0
0880641	1,0 to 30,0	1,0	5,0	80,0

Допустимая температура окружающей и рабочей среды: от -10°C to +70°C; для 0880241: от 0 до +70°C.

Permissible ambient and media temperature: from -10°C to +70°C; for 0880241: from 0 to +70°C

Рабочая среда / Medium: нейтральные, газообразные и жидкие жидкости, негорючие / neutral, gaseous and liquid fluids, non-combustible.

Гидравлические датчики давления типа: 18 D

Hydraulic pressure switches type: 18 D

Модель ; Model;	Диапазон давления (бар); Pressure range (bar);	Перепад давления (бар); нижний диапазон; Switching pressure difference (bar), lower range;	Перепад давления (бар); верхний диапазон; Switching pressure difference (bar), upper range;	Максимальное давление (бар). Overpressure (bar).
0882141	5,0 to 70,0	10,5	15,0	600,0
0882241	10,0 to 160,0	11,0	17,0	600,0
0882341	25,0 to 250,0	13,0	21,0	600,0

Допустимая температура окружающей и рабочей среды: от -10°C to +70°C

Permissible ambient and media temperature: from -10°C to +70°C

Рабочая среда / Medium: нейтральные самосмазывающиеся текучие среды, например: гидравлическое масло, смазочное масло, легкий мазут / neutral, self lubricating fluids, e.g. hydraulic oil, lube oil, light fuel oil.

Техническая документация и дата ее одобрения Российским морским регистром судоходства
Technical documentation and the date of its approval by Russian Maritime Register of Shipping

Техническая документация одобрена письмом РС: No. 273-322.3-19-259530 от 20.12.2013,

Technical documentation approved by RS letter: No. 273-322.3-19-259530 of 20.12.2013

Образец изделия испытан под техническим наблюдением Российского морского регистра судоходства.
Product's specimen has been tested under the technical supervision of Russian Maritime Register of Shipping.

Акт № 17.00187.273

Report No.

от 22.08.2017

of

Область применения и ограничения

Application and limitations

для судовых пневматических и гидравлических систем.
for ship's pneumatic and hydraulic system.

Вид документа, выдаваемого на изделие

Type of document issued for product

Изделие должно поставляться с копией настоящего Свидетельства о типовом одобрении.

The product shall be delivered with a copy of this Type Approval Certificate.





- > 0,2 ... 30 bar
Port size: G1/4
- > Approved by:
GL Germanischer Lloyd,
Lloyd's Register of
Shipping, BV Bureau
Veritas, DNV Det Norske
Veritas, ABS American
Bureau of Shipping,
RMRS Russian Maritime
Register of Shipping,
PRS Polski Rejestr.
Statkon RINA Registro

Italiano Navale

- > Microswitch with gold plated contacts
- > High number of switching cycles
- > Vibration resistant to 4 g
- > Microswitch approved by UL and CSA
- > Intrinsically safe operation

**Technical features****Medium:**

For neutral, gaseous and liquid fluids, non-combustible

Operation:

Diaphragm

Operating pressure range:

0,2 ... 30 bar (2 ... 435 psi)

Operating viscosity:1000 mm²/s maximum**Repeatability:**±3% of final value
(depending on regulating pressure)**Switching cycles:**

Max. 100/min.

Switching element:

Microswitch with gold plated contacts

Port size:

G1/4

Mounting position:

Optional

Degree of protection:

IP65

Ambient/Media temperature:

0 ... +70°C (+32 ... +158°F)

Air supply must be dry enough to avoid ice formation at temperatures below +2°C (+35°F).

Materials:

Sensor: aluminium anodised

Sealing: NBM, FPM

Technical data - Fixed switching pressure difference

Symbol	Pressure range *1)	Switching pressure difference		Over pressure *2)	Switching cycles	Materials pressure sensor		Weight (kg)	Drawing No.	Model *
	(bar)	lower range (bar)	upper range (bar)			Housing	Sealing			
	0,2 ... 2	0,2	0,35	50	100	AL anodised	FPM *3)	0,2	1	0880241
	0,5 ... 8	0,35	0,85	80	100	AL anodised	NBR	0,2	2	0880341 *4)
	1 ... 16	0,4	1,2	80	100	AL anodised	NBR	0,2	2	0880441 *4)
	1 ... 30	1	5	80	100	AL anodised	NBR	0,2	2	0880641 *4)

* Plug (DIN EN 175301-803, form A) in scope of delivery

*1) Setpoints should be ideally in the middle of the switching pressure range. Reference pressure = atmospheric pressure.
Switching pressure must not exceed the indicated values

*2) Maximum values

*3) Static seal: O-ring (NBR)

*4) Permissible ambient- and media temperature -10 ... +70°C (+14 ... +158°F)

Application categories acc.:

GL: A, B, C, D and H (up to +70°C)

LR: ENV1, ENV2, ENV3 and ENV4

DNV: Temperature A, B

Humidity B

Vibration A, B

Protection A, B

These EN-standards are comparitively identical to the following German standards:

IEC 730, IEC 947 as well as VDE 0631, VDE 0660.

The relevant applicable EN-standards for pressure switches

EN 60730-2-6

EN 60947-4-1

EN 60947-5-1

- With the CE-mark Norgren-Herion declares that the low voltage requirement has been complied with and that there is proof for fulfilling the EN-standards.
- Norgren is in the position to issue an EN-declaration of conformity.



Accessories

Pressure port reducing nipple



Page 3

0574767 (brass)

0550083 (stainless steel)

Surge damper

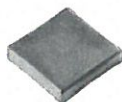


Page 3

0574773 (brass)

0553258 (stainless steel)

Cover



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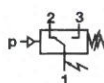
0554737

Connector
DIN EN 175301-803



0570110 (Form A)

Switching function



Connector
DIN EN 175301-803,
form A
Microswitch SPDT
Terminals 1 - 3:
Contacts close
on rising pressure.
Terminals 1 - 2:
Contacts open
on rising pressure.

Switching capacity

Commutator with gold plated contacts

Current type	Load type *2)	U min [V]	Max. permissible persistent current I _{max} [A] at U *1) (UL & CSA)				Electrical life-time
			DIN EN 175301-803, form A 30 V	48 V	125 V	250 V	
a.c.	Ohmic, inductive	6	0,1	0,1	0,1	0,1	≥ 2 x 10 ⁵ Switching cycles
d.c.	Ohmic, inductive	6	0,1	—	—	—	

Reference number: 20/min, Reference temperature: +20°C.

I_{min} = 1 mA at 24 V d.c. or 5 mA at 6 V d.c.

*1) Higher currents (5 A max) will cause a reduction of the durability of the micro-switch contacts. Furthermore additional measures has to be taken to fulfil the EMV regulation 2004/108/EG by the manufacturer

*2) Spark quenching/overload protection will be necessary using inductive loads.

Recommended circuit

Spark quenching and EMV intrinsically safe

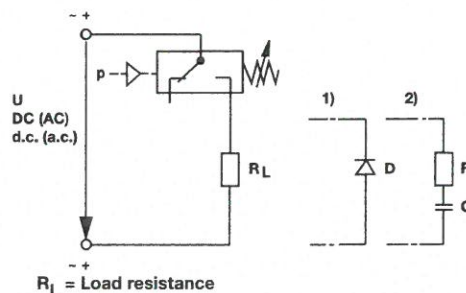
1. Quick diode (D) with $t_v \leq 200$ ns, parallel to inductive load.

2. RC link in parallel to load in parallel to switching contact.

Dimensioning principles:

R_L in $\Omega \approx 0,2 \times R_{Load}$ in Ω

C in $[\mu F] \approx I_{Load}$ in [A]

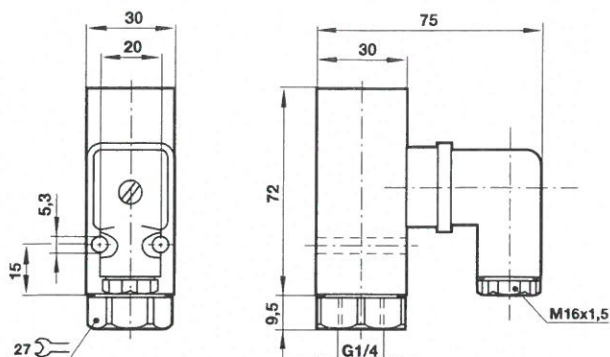




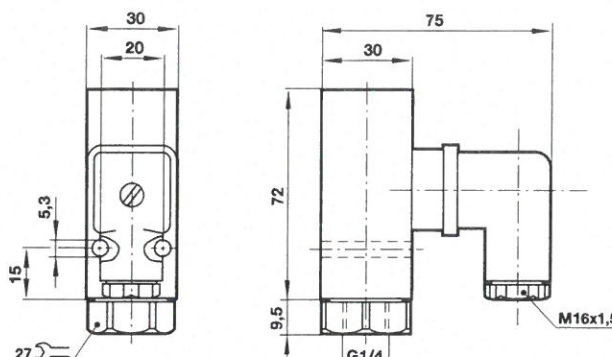
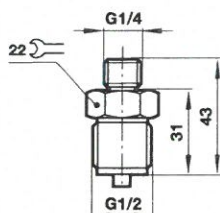
Dimensions

Dimensions in mm
Projection/First angle

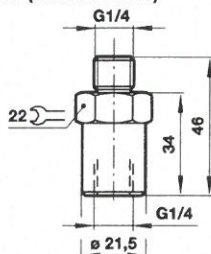
1



2

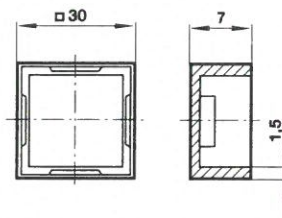
Pressure port reducing
nippleModel:
0574767 (brass)
0550083 (stainless steel)

Surge damper

Model:
0574773 (brass)
0553258 (stainless steel)

Cover

Model: 0554737 (plastic)



Warning

These products are intended for use in industrial compressed air and fluid systems only. Do not use these products where pressures and temperatures can exceed those listed under »**Technical features/data**«. Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult IMI NORGREN.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes. The system designer is warned to consider the failure modes of all



101



- > 5 ... 250 bar
Port size: G1/4
- > Approved by: GL
Germanischer Lloyd,
Lloyd's Register of
Shipping, BV Bureau
Veritas, DNV Det Norske
Veritas, ABS American
Bureau of Shipping,
RMRS Russian Maritime
Register of Shipping,
PRS Polski Rejestr.
Statkon RINA Registro

Italiano Navale

- > Microswitch with gold plated contacts
- > High number of switching cycles
- > Vibration resistant to 4 g
- > Microswitch approved by UL and CSA
- > Intrinsically safe operation

**Technical features****Medium:**

For neutral, self lubricating fluids,
e.g. hydraulic oil, lube oil,
light fuel oil

Operation:

Softseal piston

Operating pressure range:

5 ... 250 bar (72 ... 3625 psi)

Operating viscosity:

1000 mm²/s max.

Repeatability:

±3% of final value
(depending on regulating pressure)

Switching cycles:

Max. 100/min.

Switching element:

Microswitch with gold plated
contacts

Port size:

G1/4

Mounting position:

Optional

Degree of protection:

IP65

Ambient/Media temperature:

-10 ... +70°C (+14 ... +158°F)

Air supply must be dry enough to
avoid ice formation at temperatures
below +2°C (+35°F)

Materials:

Housing:

aluminium anodised/steel

Sealing: teflon/perbunan

Fixed switching pressure difference

Symbol	Pressure range *1) (bar)	Switching pressure difference		Over pressure *2) (bar)	Switching cycles (1/min)	Materials pressure sensor		Weight (kg)	Drawing No.	Model *
		lower range (bar)	upper range (bar)			Housing	Sealing			
	5 ... 70	10,5	15	600	100	AL anodised/steel	PTFE/NBR	0,2	2	0882141
	10 ... 160	11	17	600	100	AL anodised/steel	PTFE/NBR	0,2	2	0882241
	25 ... 250	13	21	600	100	AL anodised/steel	PTFE/NBR	0,2	2	0882341

* Plug (DIN EN 175301-803, form A) in scope of delivery

*1) Setpoints should be ideally in the middle of the switching pressure range. Reference pressure = atmospheric pressure.
Switching pressure must not exceed the indicated values

*2) Maximum values

AL: Aluminium; NBR: Perbunan; PTFE = Teflon

Application categories acc.:

GL: A, B, C, D and H (up to +70°C)

LR: ENV1, ENV2, ENV3 and ENV4

DNV: Temperature A, B

Humidity B

Vibration A, B

Protection A, B

These EN-standards are comparitively identical to the following German standards:

IEC 730, IEC 947 as well as VDE 0631, VDE 0660.

- With the CE-mark Norgren-Herion declares that the low voltage requirement has been complied with and that there is proof for fulfilling the EN-standards.
- Norgren is in the position to issue an EN-declaration of conformity.

The relevant applicable EN-standards for pressure switches

EN 60730-2-6

EN 60947-4-1

EN 60947-5-1



Accessories

Pressure port reducing nipple



Page 3

0574767 (brass)
0550083 (stainless steel)

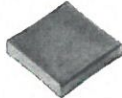
Surge damper



Page 3

0574773 (brass)
0553258 (stainless steel)

Cover



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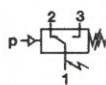
0554737

Connector DIN EN 175301-803



0570110 (Form A)

Switching function



Connector
DIN EN 175301-803,
form A
Microswitch SPDT
Terminals 1 - 3:
Contacts close
on rising pressure.
Terminals 1 - 2:
Contacts open
on rising pressure.

Switching capacity

Commutator with gold plated contacts

Current type	Load type *2)	U min [V]	Max. permissible persistent current I _{max} [A] at U *1) (UL & CSA)				Electrical life-time
			DIN EN 175301-803, form A 30 V	48 V	125 V	250 V	
a.c.	Ohmic, inductive	6	0,1	0,1	0,1	0,1	≥ 2 x 10 ⁵ Switching cycles
d.c.	Ohmic, inductive	6	0,1	—	—	—	

Reference number: 20/min, Reference temperature: +20°C.

I_{min} = 1 mA at 24 V d.c. or 5 mA at 6 V d.c.

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*2) Spark quenching/overload protection will be necessary using inductive loads.

Recommended circuit

Spark quenching and EMV intrinsically safe

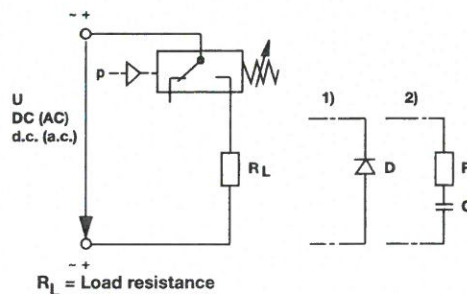
1. Quick diode (D) with $t_v \leq 200$ ns, parallel to inductive load.

2. RC link in parallel to load in parallel to switching contact.

Dimensioning principles:

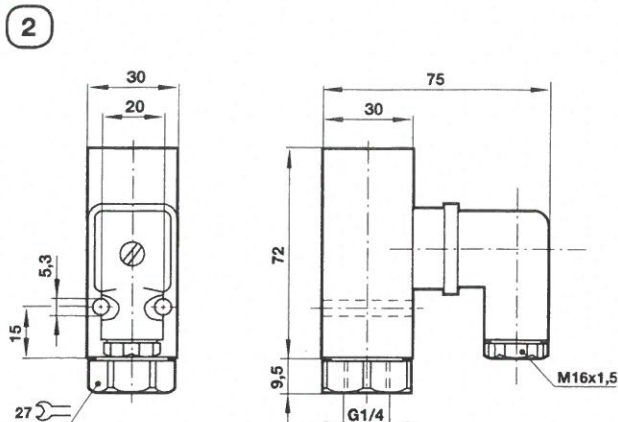
R_L in $\Omega \approx 0,2 \times R_{Load}$ in Ω

C in $\mu F \approx I_{Load}$ in [A]



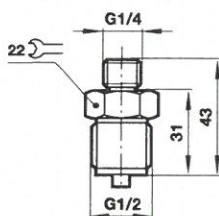
Dimensions

Dimensions in mm
 Projection/First angle



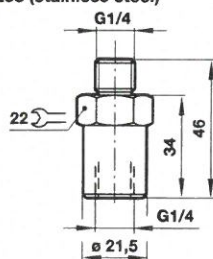
Pressure port reducing nipple

Model:
 0574767 (brass)
 0550083 (stainless steel)



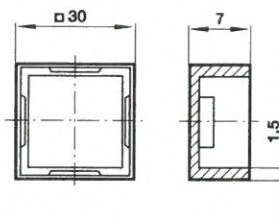
Surge damper

Model:
 0574773 (brass)
 0553258 (stainless steel)



Cover

Model: 0554737 (plastic)



Warning

These products are intended for use in industrial compressed air and fluid systems only. Do not use these products where pressures and temperatures can exceed those listed under »**Technical features/data**«. Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult IMI NORGRN.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.
 The system designer is warned to consider the failure modes of all

component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.