

Adding Position Indicator to Manoeuvring Group

		USE OF ELESA POSITION INDICATORS With hole (Ø max shaft) and max mechanical measurement	
			
GROUP WITH SCREW	HANDWHEEL	art. meccanico DD51 Hole Ø14 L.33 (999.9) standard	art. meccanico DD52R Foro Ø20 L.37 (9999.9) standard
TR 10	Ø80 foro Ø6	ELESA DD51	-
TR 12	Ø100 foro Ø8	ELESA DD51	-
TR 14	Ø100 foro Ø8	ELESA DD51	-
TR 16	Ø125 foro Ø14	ELESA DD51	ELESA DD52R #
TR 18	Ø125 foro Ø14	ELESA DD51	ELESA DD52R #
TR 20	Ø125 foro Ø14	ELESA DD51	ELESA DD52R
TR 22	Ø125 foro Ø14	ELESA DD51	ELESA DD52R
TR 24	Ø160 foro Ø16	-	ELESA DD52R
TR 25	Ø160 foro Ø16	-	ELESA DD52R
TR 26	Ø160 foro Ø16	-	ELESA DD52R
TR 28	Ø160 foro Ø16	-	ELESA DD52R
TR 30	Ø160 foro Ø16	-	ELESA DD52R
TR 32	Ø160 foro Ø16	-	ELESA DD52R
TR 35	Ø200 foro Ø20	-	ELESA DD52R
TR 36	Ø200 foro Ø20	-	ELESA DD52R
TR 40	Ø200 foro Ø20	-	ELESA DD52R (special)
TR 45	Ø200 foro Ø20	-	ELESA DD52R (special)
TR 46	Ø200 foro Ø20	-	ELESA DD52R (special)
TR 50	Ø250 foro Ø24	-	-
TR 55	Ø250 foro Ø24	-	-
TR 60	Ø250 foro Ø24	-	-

The above indicators have the following specifications:
 "AN" Horizontal indicator - "AR" Vertical indicator and for ordering please consult the following pages.

Position indicators usable as standard on Excellent groups (special, on request, for Compact groups)

(special) = Position indicator in special use, ask for feasibility when ordering.

- Photo of standard Elesa position indicator applied to our Manoeuvring Group (can also be fitted on single trapezoidal screws).

Position indicator "AN" for horizontal movements



Position indicators "AR" for vertical movements



- Elesa items available on request:

art.MPI-15

Position indicators with magnetic sensor



art.DE51

Absolute, electronic, optical position indicators with direct control



art.DD50

Digital position indicators with direct control "mini series" (max hole Ø10)



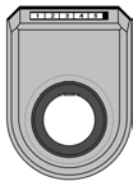
As well as the complementary items detailed in this catalogue we can also supply other Elesa products like those shown above: art.MPI-15, art.DE51, art.DD50, for which we suggest evaluating their use on our Manoeuvring Groups or for movements on a single trapezoidal screw. For further information please visit website www.elesa.it

Choosing position indicators DD51 (Ø14) and DD52R (Ø20) in reference to use

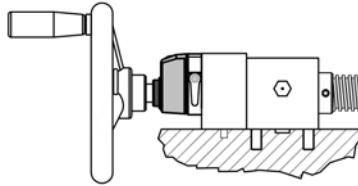
HORIZONTAL MOVEMENTS "AN"

D - S = Direction of rotation with increasing numbering

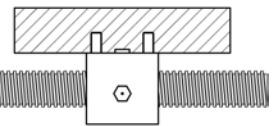
INDICATOR "AN-D"
(seen from front)



"D"
CLOCKWISE

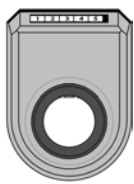


WITH RIGHT TR SCREW

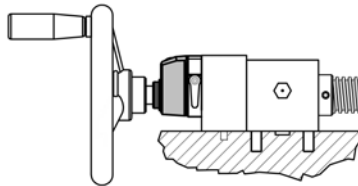


WITH LEFT TR SCREW

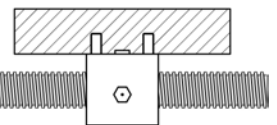
INDICATOR "AN-S"
(seen from front)



"S"
ANTI-CLOCKWISE



WITH RIGHT TR SCREW

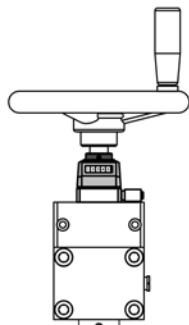


WITH LEFT TR SCREW

VERTICAL MOVEMENTS "AR"

D - S = Direction of rotation with increasing numbering

"D"
CLOCKWISE



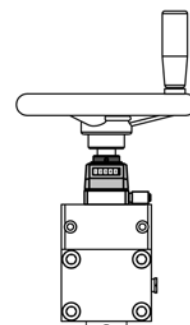
WITH LEFT TR SCREW

WITH RIGHT TR SCREW

INDICATOR "AR-D"
(seen from above)



"S"
ANTI-CLOCKWISE



WITH LEFT TR SCREW

WITH RIGHT TR SCREW

INDICATOR "AR-S"
(seen from above)



For a purely economic choice we suggest, whenever possible, using our groups with a right threaded trapezoidal screw choosing indicator "D" or else, if absolutely necessary as a technical requirement, choosing "S" (for left thread).

art.SMA ACCESSORY SUPPORT BRACKET 10/60

• **MATERIAL:** anticorrosive anodized aluminium alloy 100 (6082) UNI 9006/4
The accessory support bracket **art.SMA** is a standard component ready for the application and integration of accessories like position indicators with locking flange and handwheel for manual movements of all our Manoeuvring Groups. The best performance is obtained with the following combination of accessories :

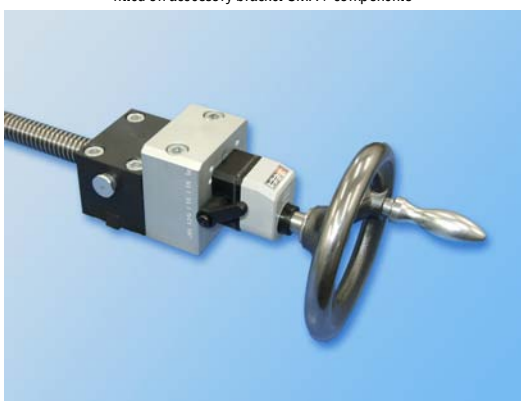
- 1) Handwheel with screw locking flange.
- 2) Handwheel with screw locking flange and position indicator.

(on request, and for sufficient quantities, it is possible to add a **vernier scale** to the bracket).

The accessory support bracket has to be mounted using threaded holes on the base in front of the fixed support using the hex cap screws supplied.

- For the **dimensions of the SMA accessory support bracket SMA, codification** and other **technical data** please see pages 52/55.

Position indicator DD51-AN ...
fitted on accessory bracket SMA + components



art.PMA ACCESSORY BRIDGE 10/60

• **MATERIAL:** R50 nitrided steel.
Is an indispensable item only in cases in which the application of bracket **SMA** is not possible in that the "fixed support" is at the edge of the slide, as shown in the Manoeuvring Group diagrams on the previous pages. It is fitted to the machine table by lateral arms using Hex. cap screws.

- For the **dimensions of the accessory bridge PMA, codification** and other **technical data** please see pages 52/55.

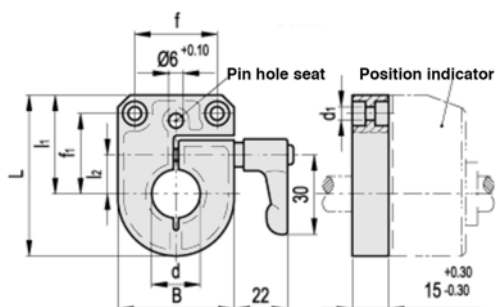
Position indicator DD52R-AN...
fitted on accessory bracket SMA , Bridge PMA + components.



art.BSA51 art.BSA52 LOCKING BASES



• **MATERIAL:** die cast zinc alloy, epoxy resin coating, in black, matte finish.
For applications on our Maneuvring Groups with, or without, digital position indicators **DD52R** and **DD51**, we recommend the use of **Shaft locking Bases BSA51** and **BSA52**. Fitted with recovery handle type **GN302**, the locking bases **BSA51** and **BSA52** allow the simple and quick locking of the trapezoidal screws (or shafts) after they have been positioned. They are supplied with a Ø6 mm hole for the positioning reference pin of the indicator, can be fitted with the handle on the left or right side, and are fitted to the **Accessory Support Bracket SMA** using M4 screws.



Locking Base on accessory bracket SMA + components



art.BSA51 LOCKING BASE (for indicator DD51)

CODE	ARTICLE	d	B	L	d ₁	f	f ₁	l ₁	l ₂	WEIGHT Kg
30CSCMIA008	BSA51-8	Ø8	33	47	4,5	21	23,5	30,5	11	0,084
30CSCMIA010	BSA51-10	Ø10	33	47	4,5	21	23,5	30,5	11	0,083
30CSCMIA012	BSA51-12	Ø12	33	47	4,5	21	23,5	30,5	11	0,082
30CSCMIA014	BSA51-14	Ø14	33	47	4,5	21	23,5	30,5	11	0,081

art.BSA52 LOCKING BASE (for indicator DD52R)

CODE	ARTICLE	d	B	L	d ₁	f	f ₁	l ₁	l ₂	WEIGHT Kg
30CSCMIA112	BSA52-12	Ø12	48	66,5	5,5	34	33,6	43,1	16	0,165
30CSCMIA114	BSA52-14	Ø14	48	66,5	5,5	34	33,6	43,1	16	0,164
30CSCMIA115	BSA52-15	Ø15	48	66,5	5,5	34	33,6	43,1	16	0,163
30CSCMIA116	BSA52-16	Ø16	48	66,5	5,5	34	33,6	43,1	16	0,162
30CSCMIA120	BSA52-20	Ø20	48	66,5	5,5	34	33,6	43,1	16	0,160

art.DD51

elesa

PA

PA-T

+80°
0°

Digital position indicators with direct control (max shaft Ø14 readout 999.9)

Base and containment casing:

Polyamide-based (PA) technopolymer, resistant to solvents, oil, grease and other chemical agents. Base colour: black.

The ultrasonic welding of the base to the containment casing, in addition to avoiding dust penetration it also prevents detachment in use.

Case colour:

- **C3** grey RAL 7035, glossy finish. We normally supply the indicator in grey; however if this colour is not available it could be supplied in **C2** orange RAL 2004 (alternative) glossy finish.

Window:

Transparent polyamide (PA-T) based technopolymer, moulded to the case with perfect seal. Resistant to solvents, oil, grease and other chemical agents.

Internal gasket:

O-ring front sealing in NBR synthetic rubber assembled between the case and the bush.

Rear gasket: Foam polyethylene, included in supply.

Bush:

In burnished steel with Ø14 mm H7 reamed hole, fitting to command shaft (TR screw shank) by grub screw, with hexagonal slot and flat end. The Ø14 hole can be reduced by using suitable **bushes as shown at the side**.

Readout:

Four rolling numerators (three black and one red). The red wheel indicates decimal places which are flanked by a graduated scale for further accuracy of reading. **The display indicates the movement in mm** of the mobile part (or parts) made by the trapezoidal screw starting from initial position (0).

Rotation direction:

- **D:** clockwise. Increasing values with clockwise rotation of the bush.
- **S:** anticlockwise. Increasing values with anticlockwise rotation of the bush.

Weight: 65 grams.

Special, available on request (For sufficient quantities.)

- Bushes in stainless steel AISI 303.
- Waterproof digital position indicators to IP 67 standards.

Features and applications:

They are also designed for motorised movements respecting the maximum speed for each indicator model (see maximum speeds shown in the table).

Ergonomics and design: compact roller numerator, large ergonomic numbers easily read from magnified display.

Fitting instructions:

We recommend fitting the position indicator with our **Accessory support bracket SMA** (see pages 53-54) that is ready for use on our **Manoeuvring Groups** (Compact, Excellent, Technology K e Rotary nut). If required, it is also possible to add a **Locking Base BSA51** to the **SMA bracket** to lock the trapezoidal screw in the desired position.

For custom applications not using the above accessories, it is possible to fit the indicator by making a hole Ø 6x10 mm deep in the machine body with inter-axis 22 mm from the command shaft to seat the reference pin on the back of the indicator.

- 1) Move the command shaft to the initial "0" reference position.
- 2) Fit the indicator, with numerator zeroed, to the command shaft and check that the rear pin is seated in the locating hole.
- 3) Fit the bush to the command shaft tighten the grub screw with socket slot at the end.

All the handwheels listed on the previous pages can be used on our Manoeuvring Groups for manual movements with, or without, position indicators.

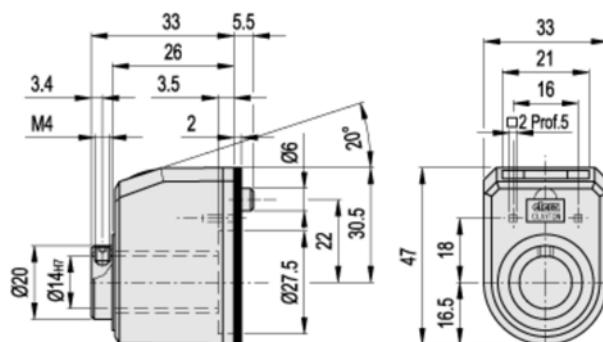


DD51-AN...

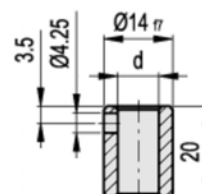


DD51-AR...

Indicators usable on our trapezoidal screws with similar pitch and having a turned shank of **Ø max 14 mm** and above all on our Manoeuvring Groups that are ready for adding these position indicators, interchangeable with indicator **DD52R** on the following page remembering not to exceed the 14 mm H7 diameter.



REDUCTION BUSHES RB51 in burnished steel (on request, and for sufficient quantities, we can supply reduction bushes in other dimensions or in stainless steel AISI 303).



CODE	ARTICLE	d H7
30CSCMIA206	RB51-6	Ø6
30CSCMIA208	RB51-8	Ø8
30CSCMIA210	RB51-10	Ø10
30CSCMIA212	RB51-12	Ø12



- Digital position indicators with direct control DD51-AN
- For HORIZONTAL movements using our trapezoidal screws.



(shaft max Ø14 readout 999.9)

elisa



USABLE ON TR SCREWS	PITCH FROM INDICATOR "AN" WITH READOUT PER TURN mm	NUMERATOR INCREASING WITH CLOCKWISE ROTATION "D" CODE	ARTICLE "D"	NUMERATOR INCREASING WITH ANTICLOCKWISE ROTATION "S" CODE	ARTICLE "S"	MAXIMUM SPEED (TURNS PER MINUTE) *
TR 10x2	002.0	30CSMI002ZR	DD51-AN-002.0-D-C3	30CSMI002ZL	DD51-AN-002.0-S-C3	1250
TR 10x3	003.0	30CSMI003ZR	DD51-AN-003.0-D-C3	30CSMI003ZL	DD51-AN-003.0-S-C3	830
TR 12x3	003.0	30CSMI003ZR	DD51-AN-003.0-D-C3	30CSMI003ZL	DD51-AN-003.0-S-C3	830
TR 14x3	003.0	30CSMI003ZR	DD51-AN-003.0-D-C3	30CSMI003ZL	DD51-AN-003.0-S-C3	830
TR 14x4	004.0	30CSMI004ZR	DD51-AN-004.0-D-C3	30CSMI004ZL	DD51-AN-004.0-S-C3	625
TR 16x4	004.0	30CSMI004ZR	DD51-AN-004.0-D-C3	30CSMI004ZL	DD51-AN-004.0-S-C3	625
TR 18x4	004.0	30CSMI004ZR	DD51-AN-004.0-D-C3	30CSMI004ZL	DD51-AN-004.0-S-C3	625
TR 20x4	004.0	30CSMI004ZR	DD51-AN-004.0-D-C3	30CSMI004ZL	DD51-AN-004.0-S-C3	625
TR 22x5	005.0	30CSMI005ZR	DD51-AN-005.0-D-C3	30CSMI005ZL	DD51-AN-005.0-S-C3	500

Position indicators DD51-AN/AR can be supplied on request with 6, 8, 10, 12, or 20 mm pitch for special applications.

* The maximum rotation speed of the command shaft is based upon laboratory tests in standard conditions.

** Check availability with *Bimeccanica*

The position indicators having a very large pitch are not only used on screws having an equal pitch but also on those threaded half right and half left (bidirectional) normally fitted on our **Compact, Excellent, Technology K and Rotary nut Manoeuvring Groups**.

Having to check the variation in distance between the two carriages (or mobile parts) during the positioning stage or whilst working **it is appropriate to use indicators with twice the pitch of the Dx/Sx trapezoidal screw.**

EXAMPLE:

For Compact or Excellent Steel Bidirectional Tr 25x5 Manoeuvring Groups you have to use a position indicator with a pitch of 10 in that the movement of the mobile parts is effectively 10mm.

The **DD51** position indicator, even if it has **measuring scale of 999**, can be used on longer distances in that having a continuous cycle it will go past the maximum and continue with the same sense of rotation with counting starting again from zero; naturally you need to add 1000 mm to the value shown, or multiples of 1000 mm, to have the effective measurement of movement.

The same also applies for the **DD52R** position indicator but as it has a measuring scale of 9999.9, and with trapezoidal screws that normally are no longer than 6,000 mm, one cycle is certainly sufficient.

Horizontal Manoeuvring Groups with position indicator DD51-AN



- Digital position indicators with direct control DD51-AR
- For VERTICAL movements using our trapezoidal screws.



(shaft max Ø14 readout 999.9)

elasa



USABLE ON TR SCREWS	PITCH FROM INDICATOR "AR" WITH READOUT PER TURN mm	NUMERATOR INCREASING WITH CLOCKWISE ROTATION "D" CODE	ARTICLE "D"	NUMERATOR INCREASING WITH ANTICLOCKWISE ROTATION "S" CODE	ARTICLE "S"	MAXIMUM SPEED (TURNS PER MINUTE) *
TR 10x2	002.0	30CSMI002VR	DD51-AR-002.0-D-C3	30CSMI002VL	DD51-AR-002.0-S-C3	1250
TR 10x3	003.0	30CSMI003VR	DD51-AR-003.0-D-C3	30CSMI003VL	DD51-AR-003.0-S-C3	830
TR 12x3	003.0	30CSMI003VR	DD51-AR-003.0-D-C3	30CSMI003VL	DD51-AR-003.0-S-C3	830
TR 14x3	003.0	30CSMI003VR	DD51-AR-003.0-D-C3	30CSMI003VL	DD51-AR-003.0-S-C3	830
TR 14x4	004.0	30CSMI004VR	DD51-AR-004.0-D-C3	30CSMI004VL	DD51-AR-004.0-S-C3	625
TR 16x4	004.0	30CSMI004VR	DD51-AR-004.0-D-C3	30CSMI004VL	DD51-AR-004.0-S-C3	625
TR 18x4	004.0	30CSMI004VR	DD51-AR-004.0-D-C3	30CSMI004VL	DD51-AR-004.0-S-C3	625
TR 20x4	004.0	30CSMI004VR	DD51-AR-004.0-D-C3	30CSMI004VL	DD51-AR-004.0-S-C3	625
TR 22x5	005.0	30CSMI005VR	DD51-AR-005.0-D-C3	30CSMI005VL	DD51-AR-005.0-S-C3	500

Position indicators DD51-AN/AR can be supplied on request with 6, 8, 10, 12, or 20 mm pitch for special applications.

* The maximum rotation speed of the command shaft is based upon laboratory tests in standard conditions.

** Check availability with *Bimeccanica*

The position indicators having a very large pitch are not only used on screws having an equal pitch but also on those threaded half right and half left (bidirectional) normally fitted on our **Compact, Excellent, Tecnology K and Rotary nut Manoeuvring Groups**.

Having to check the variation in distance between the two carriages (or mobile parts) during the positioning stage or whilst working **it is appropriate to use indicators with twice the pitch of the Dx/Sx trapezoidal screw.**

EXAMPLE:

For Compact or Excellent Steel Bidirectional Tr 25x5 Manoeuvring Groups you have to use a position indicator with a pitch of 10 in that the movement of the mobile parts is effectively 10mm.

The **DD51** position indicator, even if it has **measuring scale of 999**, can be used on longer distances in that having a continuous cycle it will go past the maximum and continue with the same sense of rotation with counting starting again from zero; naturally you need to add 1000 mm to the value shown, or multiples of 1000 mm, to have the effective measurement of movement.

The same also applies for the **DD52R** position indicator but as it has a measuring scale of 9999.9, and with trapezoidal screws that normally are no longer than 6,000 mm, one cycle is certainly sufficient.

Vertical Manoeuvring Groups with position indicator DD51-AR



- Digital position indicators with direct control DD52R-AN
- For HORIZONTAL movements using our trapezoidal screws.



(shaft max Ø20 readout 9999.9)

elesa



USABLE ON TR SCREWS	PITCH FROM INDICATOR "AN" WITH READOUT PER TURN mm	NUMERATOR INCREASING WITH CLOCKWISE ROTATION "D" CODE	ARTICLE "D"	NUMERATOR INCREASING WITH ANTICLOCKWISE ROTATION "S" CODICE	ARTICLE "S"	MAXIMUM SPEED (TURNS PER MINUTE) *
TR 16x4	0004.0	30CSCMI104ZR	DD52R-AN-0004.0-D-C3	30CSCMI104ZL	DD52R-AN-0004.0-S-C3	625
TR 18x4	0004.0	30CSCMI104ZR	DD52R-AN-0004.0-D-C3	30CSCMI104ZL	DD52R-AN-0004.0-S-C3	625
TR 20x4	0004.0	30CSCMI104ZR	DD52R-AN-0004.0-D-C3	30CSCMI104ZL	DD52R-AN-0004.0-S-C3	625
TR 22x5	0005.0	30CSCMI105ZR	DD52R-AN-0005.0-D-C3	30CSCMI105ZL	DD52R-AN-0005.0-S-C3	500
TR 24x5	0005.0	30CSCMI105ZR	DD52R-AN-0005.0-D-C3	30CSCMI105ZL	DD52R-AN-0005.0-S-C3	500
TR 25x5	0005.0	30CSCMI105ZR	DD52R-AN-0005.0-D-C3	30CSCMI105ZL	DD52R-AN-0005.0-S-C3	500
TR 26x5	0005.0	30CSCMI105ZR	DD52R-AN-0005.0-D-C3	30CSCMI105ZL	DD52R-AN-0005.0-S-C3	500
TR 28x5	0005.0	30CSCMI105ZR	DD52R-AN-0005.0-D-C3	30CSCMI105ZL	DD52R-AN-0005.0-S-C3	500
TR 30x6	0006.0	30CSCMI106ZR	DD52R-AN-0006.0-D-C3	30CSCMI106ZL	DD52R-AN-0006.0-S-C3	415
TR 32x6	0006.0	30CSCMI106ZR	DD52R-AN-0006.0-D-C3	30CSCMI106ZL	DD52R-AN-0006.0-S-C3	415
TR 35x6	0006.0	30CSCMI106ZR	DD52R-AN-0006.0-D-C3	30CSCMI106ZL	DD52R-AN-0006.0-S-C3	415
TR 36x6	0006.0	30CSCMI106ZR	DD52R-AN-0006.0-D-C3	30CSCMI106ZL	DD52R-AN-0006.0-S-C3	415
TR 40x7	0007.0	SPECIAL	SPECIAL	SPECIAL	SPECIAL	350
TR 45x8	0008.0	SPECIAL**	SPECIAL**	SPECIAL**	SPECIAL**	315
TR 46x8	0008.0	SPECIAL**	SPECIAL**	SPECIAL**	SPECIAL**	315

Position indicators DD52R-AN/AR can be supplied on request with 2, 3, 9 (special), 10, 12, or 20 mm pitch for special applications.

* The maximum rotation speed of the command shaft is based upon laboratory tests in standard conditions.

** Check availability with Bimeccanica

The position indicators having a very large pitch are not only used on screws having an equal pitch but also on those threaded half right and half left (bidirectional) normally fitted on our **Compact, Excellent, Technology K and Rotary nut Manoeuvring Groups**.

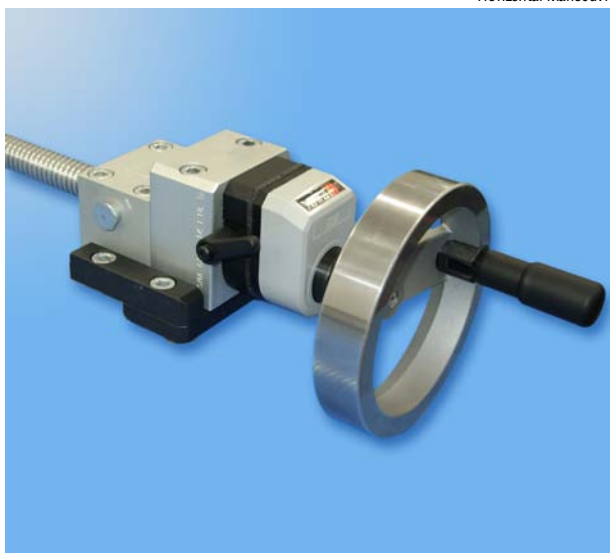
Having to check the variation in distance between the two carriages (or mobile parts) during the positioning stage or whilst working **it is appropriate to use indicators with twice the pitch of the Dx/Sx trapezoidal screw.**

EXAMPLE:

For Compact or Excellent Steel Bidirectional Tr 25x5 Manoeuvring Groups you have to use a position indicator with a pitch of 10 in that the movement of the mobile parts is effectively 10mm.

The **DD52R** indicator having a measuring scale of 9999.9 mm, used with trapezoidal screws that normally do not exceed 6,000 mm, is able to cover the distance to be measured in a single cycle.

Horizontal Manoeuvring Groups with position indicator DD52R-AN



- Digital position indicators with direct control DD52R-AR
- For VERTICAL movements using our trapezoidal screws.



(shaft max Ø20 readout 9999.9)

elesa



USABLE ON TR SCREWS	PASSO PITCH FROM INDICATOR "AR" WITH READOUT PER TURN mm	NUMERATOR INCREASING WITH CLOCKWISE ROTATION "D" CODE	ARTICLE "D"	NUMERATOR INCREASING WITH ANTICLOCKWISE ROTATION "S" CODE	ARTICLE "S"	MAXIMUM SPEED (TURNS PER MINUTE) *
TR 16x4	0004.0	30CSCMI104VR	DD52R-AR-0004.0-D-C3	30CSCMI104VL	DD52R-AR-0004.0-S-C3	625
TR 18x4	0004.0	30CSCMI104VR	DD52R-AR-0004.0-D-C3	30CSCMI104VL	DD52R-AR-0004.0-S-C3	625
TR 20x4	0004.0	30CSCMI104VR	DD52R-AR-0004.0-D-C3	30CSCMI104VL	DD52R-AR-0004.0-S-C3	625
TR 22x5	0005.0	30CSCMI105VR	DD52R-AR-0005.0-D-C3	30CSCMI105VL	DD52R-AR-0005.0-S-C3	500
TR 24x5	0005.0	30CSCMI105VR	DD52R-AR-0005.0-D-C3	30CSCMI105VL	DD52R-AR-0005.0-S-C3	500
TR 25x5	0005.0	30CSCMI105VR	DD52R-AR-0005.0-D-C3	30CSCMI105VL	DD52R-AR-0005.0-S-C3	500
TR 26x5	0005.0	30CSCMI105VR	DD52R-AR-0005.0-D-C3	30CSCMI105VL	DD52R-AR-0005.0-S-C3	500
TR 28x5	0005.0	30CSCMI105VR	DD52R-AR-0005.0-D-C3	30CSCMI105VL	DD52R-AR-0005.0-S-C3	500
TR 30x6	0006.0	30CSCMI106VR	DD52R-AR-0006.0-D-C3	30CSCMI106VL	DD52R-AR-0006.0-S-C3	415
TR 32x6	0006.0	30CSCMI106VR	DD52R-AR-0006.0-D-C3	30CSCMI106VL	DD52R-AR-0006.0-S-C3	415
TR 35x6	0006.0	30CSCMI106VR	DD52R-AR-0006.0-D-C3	30CSCMI106VL	DD52R-AR-0006.0-S-C3	415
TR 36x6	0006.0	30CSCMI106VR	DD52R-AR-0006.0-D-C3	30CSCMI106VL	DD52R-AR-0006.0-S-C3	415
TR 40x7	0007.0	SPECIAL	SPECIAL	SPECIAL	SPECIAL	350
TR 45x8	0008.0	SPECIAL**	SPECIAL**	SPECIAL**	SPECIAL**	315
TR 46x8	0008.0	SPECIAL**	SPECIAL**	SPECIAL**	SPECIAL**	315

Position indicators DD52R-AN/AR can be supplied on request with 2, 3, 9 (special), 10, 12, or 20 mm pitch for special applications.

* The maximum rotation speed of the command shaft is based upon laboratory tests in standard conditions.

** Check availability with Bimeccanica

The position indicators having a very large pitch are not only used on screws having an equal pitch but also on those threaded half right and half left (bidirectional) normally fitted on our **Compact, Excellent, Technology K and Rotary nut Manoeuvring Groups**.

Having to check the variation in distance between the two carriages (or mobile parts) during the positioning stage or whilst working it is appropriate to use indicators with twice the pitch of the Dx/Sx trapezoidal screw.

EXAMPLE:

For Compact or Excellent Steel Bidirectional Tr 25x5 Manoeuvring Groups you have to use a position indicator with a pitch of 10 in that the movement of the mobile parts is effectively 10mm.







The DD52R indicator having a measuring scale of 9999.9 mm, used with trapezoidal screws that normally do not exceed 6,000 mm, is able to cover the distance to be measured in a single cycle.

FOR OTHER APPLICATIONS SEE ADDITIONAL ACCESSORIES IN THE ELESA CATALOGUE "151" OR VISIT WEBSITE www.elesa.it

Vertical Manoeuvring Groups with position indicator DD52R-AR



Combining position indicator with Manoeuvring Group

 		USE OF FIAMA POSITION INDICATORS With hole (Ø max shaft) and max mechanical measurement, or with batteries.							
									
		art. mechanical OP5A Hole Ø20 L.51 (999.9) on request	art. mechanical OP10 Hole Ø20 L.50 (9999.9) on request	art. battery EP7 Hole Ø20 (Ø14) L.36 (9999.9) STANDARD	art. battery EP20 Hole Ø20 L.57 (99999.9) on request	art. mechanical OP7 Hole Ø25 L.36 (9999.9) STANDARD	art. mechanical OP12 Hole Ø25 L.58 (9999.9) on request	art. battery EP25 Hole Ø25 L.57 (99999.9) STANDARD	art. mechanical OP9 Hole Ø30/35 L.53 (9999.9) STANDARD
GROUP WITH SCREW	HANDWHEEL								
TR 10	Ø80 hole Ø6	-	-	-	-	-	-	-	-
TR 12	Ø100 hole Ø8	-	-	-	-	-	-	-	-
TR 14	Ø100 hole Ø8	-	-	-	-	-	-	-	-
TR 16	Ø125 hole Ø14	-	-	-	-	-	-	-	-
TR 18	Ø125 hole Ø14	-	-	-	-	-	-	-	-
TR 20	Ø125 hole Ø14	OP5A	OP10	EP7	EP20	-	-	-	-
TR 22	Ø125 hole Ø14	OP5A	OP10	EP7	EP20	-	-	-	-
TR 24	Ø160 hole Ø16	OP5A	OP10	EP7	EP20	-	-	-	-
TR 25	Ø160 hole Ø16	OP5A	OP10	EP7	EP20	-	-	-	-
TR 26	Ø160 hole Ø16	OP5A	OP10	EP7	EP20	-	-	-	-
TR 28	Ø160 hole Ø16	OP5A	OP10	EP7	EP20	-	-	-	-
TR 30	Ø160 hole Ø16	OP5A	OP10	EP7	EP20	OP7	-	-	-
TR 32	Ø160 hole Ø16	OP5A	OP10	EP7	EP20	OP7	-	-	-
TR 35	Ø200 hole Ø20	OP5A	OP10	EP7	EP20	OP7	OP12	EP25	-
TR 36	Ø200 hole Ø20	OP5A	OP10	EP7	EP20	OP7	OP12	EP25	-
TR 40	Ø200 hole Ø20	OP5A (special)	OP10 (special)	EP7	EP20	OP7	OP12 (special)	EP25	-
TR 45	Ø200 hole Ø20	OP5A	OP10	EP7	EP20	OP7	OP12	EP25	OP9
TR 46	Ø200 hole Ø20	OP5A	OP10	EP7	EP20	OP7	OP12	EP25	OP9
TR 50	Ø250 hole Ø24	-	-	-	-	OP7	OP12	EP25	OP9
TR 55	Ø250 hole Ø24	-	-	-	-	OP7 (special)	OP12 (special)	EP25	OP9 (special)
TR 60	Ø250 hole Ø24	-	-	-	-	OP7 (special)	OP12 (special)	EP25	OP9 (special)

The indicators listed above have the following specific: "A" horizontal indicator - "B" vertical indicator and for ordering please refer to the following pages.

The hole shown for each position indicator can be reduced using "reduction bushes" in order to be able to use the indicator on smaller shafts.

- (special) = Specially made position indicator, check feasibility at time of order.

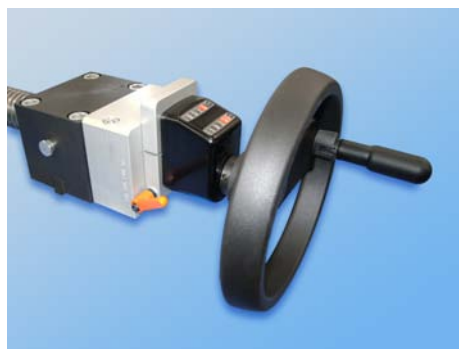
- The *Fiama* EP7, EP20 and EP25 position indicators are battery powered and are **programmable for all pitches**, in a similar way to an electronic reference display with Encoder.

- Photos of standard *Fiama* position indicators applied on our Manoeuvring Groups or single trapezoidal screws.

OP5A-A Position indicator for horizontal movements



OP12-A Position indicator for horizontal movements



OP7-B Position indicator for vertical movements



OP12-B Position indicator for vertical movements



• Fiama items available on request:

art.F18/F20

Reference displays with magnetic band



art.MT + art.P...

Transducers with magnetic band



art.EP25L

Electronic position indicator for through shaft (max hole Ø25)



art.RINV-OP

Flanged angular transmissions combined with position indicators.



art.66/...

Angular transmissions with:
n.1 input (male or female)
n.1 output (male or female)



art.66/...

Angular transmissions with:
n.1 input (male or female)
n.2 outputs (female/female or male/male)



art.FAP-V

Flexible transmission drive shafts.



Apart from the complementary accessories detailed in this catalogue it is possible to supply **other Fiama products** like those shown above: **art.F18/F20**, **art.MT**, **art.P...**, **art.EP25L**, **art.RINV-OP**, **art.66/...**, **art.FAP/V**, for which we recommend evaluating their use on our Manoeuvring Groups or for movement with a single trapezoidal screw. For additional information please visit website www.fiama.it



Choice of position indicators Ø25 Ø30 Ø35 + specials Ø20 and Ø25

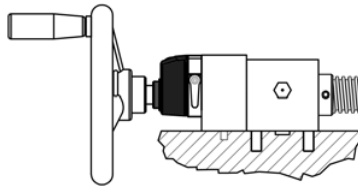
HORIZONTAL MOVEMENTS "A"

DX - SX = Direction of rotation with increasing numbering

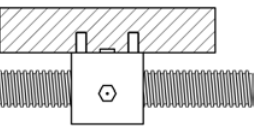
INDICATOR "A-DX"
(seen from front)



"DX"
CLOCKWISE



WITH RIGHT TR

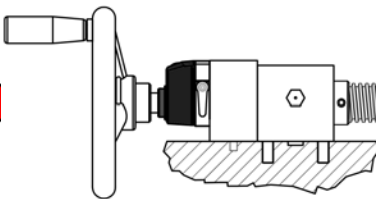


WITH LEFT TR SCREW

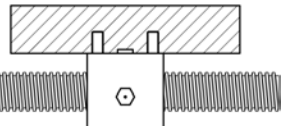
INDICATOR "A-SX"
(seen from front)



"SX"
ANTI-CLOCKWISE



WITH RIGHT TR SCREW

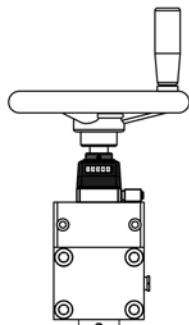


WITH LEFT TR SCREW

VERTICAL MOVEMENTS "B"

DX - SX = Direction of rotation with increasing numbering

"DX"
CLOCKWISE



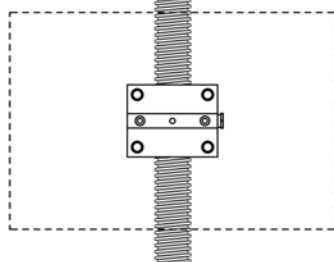
INDICATOR "B-DX"
(seen from above)



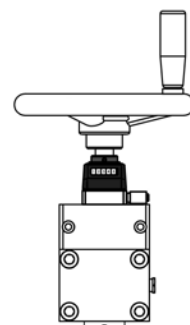
WITH LEFT TR SCREW



WITH RIGHT TR SCREW



"SX"
ANTI-CLOCKWISE



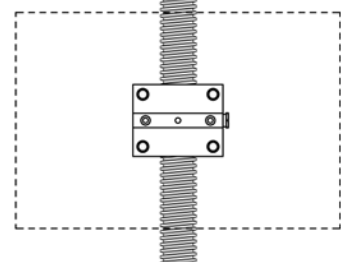
INDICATOR "B-SX"
(seen from above)



WITH LEFT TR SCREW



WITH RIGHT TR SCREW



For a purely economic choice we suggest, whenever possible, using our groups with a right threaded trapezoidal screw choosing indicator "Dx" or else, if absolutely necessary as a technical requirement, choosing "Sx" (for left thread).

art.SMA ACCESSORY SUPPORT BRACKET 10/60

- MATERIAL:** anticorrosive anodized aluminium alloy 100 (6082) UNI 9006/4

The accessory support bracket **art.SMA** is a standard component ready for the application and integration of accessories like position indicators with locking flange and handwheel for manual movements of all our Manoeuvring Groups. The best performance is obtained with the following combination of accessories :

- 1) Handwheel with screw locking flange.
- 2) Handwheel with screw locking flange and position indicator.

(on request, and for sufficient quantities, it is possible to add a **vernier scale** to the bracket).

The accessory support bracket has to be mounted using threaded holes on the base in front of the fixed support using the hex cap screws supplied.

- For the **dimensions of the SMA accessory support bracket SMA**, **codification** and other **technical data** please see pages 52/55.

Position indicator fitted to Accessory Bracket SMA,
Locking Flange FL-B+ components



art.PMA ACCESSORY BRIDGE 10/60

- MATERIAL:** R50 nitrided steel.

Is an indispensable item only in cases in which the application of bracket **SMA** is not possible in that the "fixed support" is at the edge of the slide, as shown in the Manoeuvring Group diagrams on the previous pages. It is fitted to the machine table by lateral arms using Hex. cap screws.

- For the **dimensions of the accessory bridge PMA**, **codification** and other **technical data** please see pages 52/55.

Position indicator fitted to Accessory Bracket SMA,
Locking Flange FBV, Bridge PMA + components



art.FBV 7095F... SCREW LOCKING FLANGE (for art.SMA)

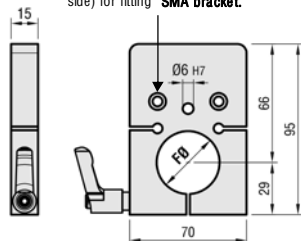
- > **MATERIAL:** anticorrosive anodized aluminium alloy 100 (6082) UNI 9006/4

- > **MATERIAL:** Locking handle in die cast zinc alloy coated with epoxy resin.

The screw Locking Flange **art.FBV 7095F..** is an accessory ready for fitting to **accessory support bracket SMA** and is fundamental for locking the trapezoidal screw in the desired position. This accessory can be fitted with the handle on the left or right by turning it on itself.

It can be used with the handwheel alone or with the addition of a position indicator in which case the Locking Flange may have a different shape on the basis of the indicator chosen. The **SMA** bracket is ready for fitting our Locking Flange **FBV 7095F..** and also for other products of the same family as the position indicators presented in this catalogue.

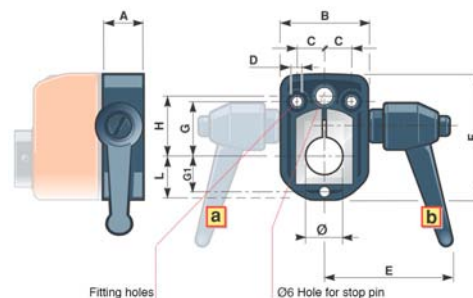
2 countersunk holes for M5
Hex cap screws (one each
side) for fitting **SMA** bracket.



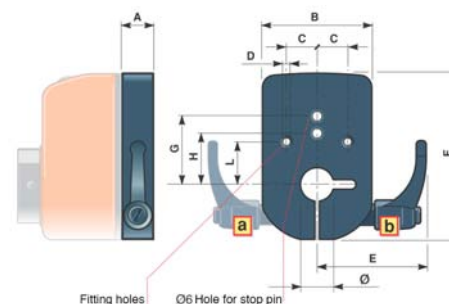
CODE	ARTICLE	FØ HOLE	WEIGHT Kg
30CSAF0020	FBV 7095F20	Ø20	0,265
30CSAF0025	FBV 7095F25	Ø25	0,260
30CSAF0030	FBV 7095F30	Ø30	0,255
30CSAF0035	FBV 7095F35	Ø35	0,255

art.FL-B SHAFT LOCKING FLANGE

FIAMA



art.FL-B	Ø	A	B	C	D	E	F	G	G1	H	L
OP7	25	15	48	18	4,2	60	66	25	19,5	30	24
For ordering:		Cod. 30CSCMFF25					Art. FL-B OP7F25				



art.FL-B	Ø	A	B	C	D	E	F	H	L
OP5A	20	18	52	18	4.5	57.5	74	30	25
For ordering:		Cod. 30CSCMFF20				Art.FL-B OP5F20			

art.OP7 **FIAMA**

**Digital position indicators with direct control
(max shaft Ø25 readout 9999.9)**

This is a 5 digit indicator to adjust and directly read a motion obtained by drive shaft rotation. Usable on our trapezoidal screws with similar pitch having turned shank of **Ømax 25 mm** and above all on our Manoeuvring Groups from TR32-TR60 in that they are prepared for these indicators. The coupling of numbers with a rubber joint allows, especially in high ratios, better scrolling and manoeuvring speed.

- **Base and containment casing:**
Self-extinguishing technopolymer case. Protection IP64 Temperature max 80°C
- **Case colour:**
Black RAL 9005 (grey or orange on request).
- **Window and readout:**
5 numerators (red for decimal places. Readout to 9999.9).
Decimal measurement, inch measurement, special ratios.
Reading with 18° inclined view (or frontal on request; lens to improve reading, number height 7mm).
- **Bush:**
Standard shaft hole Ø25 (OP7F25), other smaller holes using reduction bushes.
- **Special, on request:**
 - Locating pin (c) Ø10,5/Ø12 mm.
 - Version "I" with metal parts in stainless steel.
- **Fitting instructions:**
Insert the indicator along the shaft slot taking care to ensure that the anchoring pin sits in the Ø6 hole, prepared. Position the instrument on the start point (zero) and lock with the grub screw.

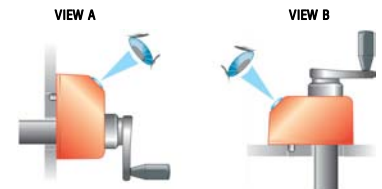
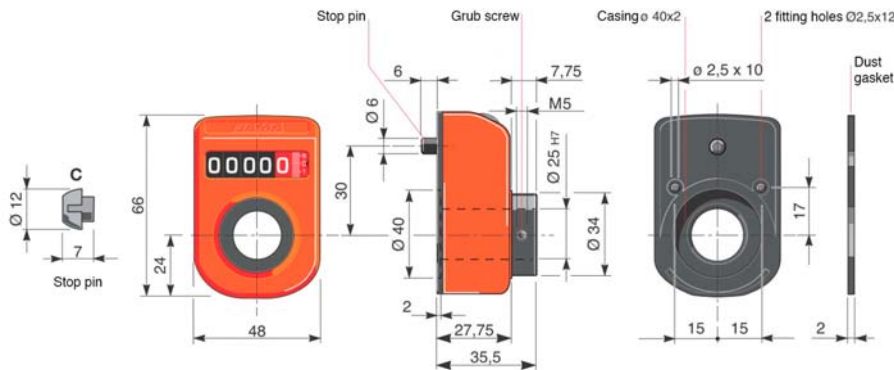


OP7 Digital position indicator

Horizontal indicator (view "A")



Vertical indicator (view "B")



USE ON TR SCREWS	PITCH (mm) FROM INDICATOR WITH READOUT PER TURN	HORIZONTAL USE "VIEW A"		VERTICAL USE "VIEW B"		MAXIMUM SPEED (TURNS PER MINUTE)
		NUMERATOR INCREASING WITH CLOCKWISE ROTATION ARTICLE "DX"	NUMERATOR INCREASING WITH ANTICLOCKWISE ROTATION ARTICLE "SX"	NUMERATOR INCREASING WITH CLOCKWISE ROTATION ARTICOLO "DX"	NUMERATOR INCREASING WITH ANTICLOCKWISE ROTATION ARTICOLO "SX"	
TR 30x6	0006.0	OP7A60DXF25G	OP7A60SXF25G	OP7B60DXF25G	OP7B60SXF25G	250
TR 32x6	0006.0	OP7A60DXF25G	OP7A60SXF25G	OP7B60DXF25G	OP7B60SXF25G	250
TR 35x6	0006.0	OP7A60DXF25G	OP7A60SXF25G	OP7B60DXF25G	OP7B60SXF25G	250
TR 36x6	0006.0	OP7A60DXF25G	OP7A60SXF25G	OP7B60DXF25G	OP7B60SXF25G	250
TR 40x7	0007.0	OP7A70DXF25G	OP7A70SXF25G	OP7B70DXF25G	OP7B70SXF25G	-
TR 45x8	0008.0	OP7A80DXF25G	OP7A80SXF25G	OP7B80DXF25G	OP7B80SXF25G	150
TR 46x8	0008.0	OP7A80DXF25G	OP7A80SXF25G	OP7B80DXF25G	OP7B80SXF25G	150
TR 50x8	0008.0	OP7A80DXF25G	OP7A80SXF25G	OP7B80DXF25G	OP7B80SXF25G	150
TR 55x9	0009.0	SPECIAL	SPECIAL	SPECIAL	SPECIAL	-
TR 60x9	0009.0	SPECIAL	SPECIAL	SPECIAL	SPECIAL	-
SCREWS PITCH 10	0010.0	OP7A100DXF25G	OP7A100SXF25G	OP7B100DXF25G	OP7B100SXF25G	100
SCREWS PITCH 12	0012.0	OP7A120DXF25G	OP7A120SXF25G	OP7B120DXF25G	OP7B120SXF25G	100
SCREWS PITCH 20	0020.0	OP7A200DXF25G	OP7A200SXF25G	OP7B200DXF25G	OP7B200SXF25G	80

art.OP9 **FIAMA**

Digital position indicators with direct control (max shaft Ø30 and Ø35 readout 9999.9)

This is a 5 digit indicator to adjust and directly read a motion obtained by drive shaft rotation. Usable on our trapezoidal screws with similar pitch having turned shank of **Ø max 30** or else **Ø 35 mm** and above all on our Manoeuvring Groups from TR45-TR60 in that they are prepared for these indicators.

- **Base and containment casing:**
Self-extinguishing technopolymer case. Protection IP64 Temperature max 80°C
- **Case colour:**
Black RAL 9005 (grey or orange on request).
- **Window and readout:**
5 numerators (red for decimal places. Readout to 9999.9).
Decimal measurement, inch measurement, special ratios.
Reading with 18° indined view (or frontal on request; lens to improve reading, number height 7mm).
- **Bush:**
Standard shaft hole Ø 30 (OP9F30) and Ø35 (OP9F35), other smaller holes using reduction bushes.
- **Special, on request:**
 - Locating pin (c) Ø10,5/Ø12 mm.
 - Version "I" with metal parts in stainless steel.
- **Fitting instructions:**

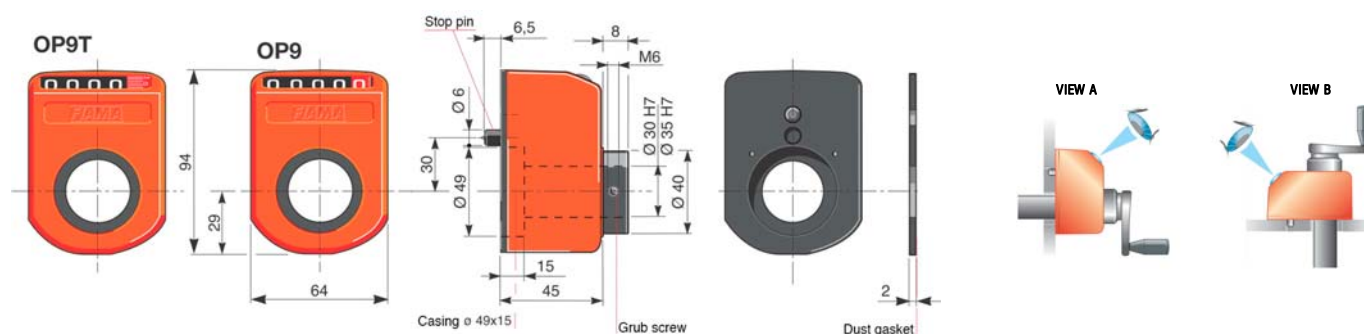
Insert the indicator along the shaft slot taking care to ensure that the anchoring pin sits in the Ø6 hole, prepared. Position the instrument on the start point (zero) and lock with the grub screw.



OP9/Ø30 Digital position indicator



OP9/Ø35 Digital position indicator



art.OP9 hole Ø30

USE ON TR SCREWS	PITCH (mm) FROM INDICATOR WITH READOUT PER TURN	HORIZONTAL USE "VIEW A"		VERTICAL USE "VIEW B"		MAXIMUM SPEED (TURNS PER MINUTE)
		NUMERATOR INCREASING WITH CLOCKWISE ROTATION ARTICLE "DX"	NUMERATOR INCREASING WITH ANTICLOCKWISE ROTATION ARTICLE "SX"	NUMERATOR INCREASING WITH CLOCKWISE ROTATION ARTICLE "DX"	NUMERATOR INCREASING WITH ANTICLOCKWISE ROTATION ARTICLE "SX"	
TR 45x8	0008.0	OP9A80DXF30GI30	OP9A80SXF30GI30	OP9B80DXF30GI30	OP9B80SXF30GI30	80
TR 46x8	0008.0	OP9A80DXF30GI30	OP9A80SXF30GI30	OP9B80DXF30GI30	OP9B80SXF30GI30	80
TR 50x8	0008.0	OP9A80DXF30GI30	OP9A80SXF30GI30	OP9B80DXF30GI30	OP9B80SXF30GI30	80
TR 55x9	0009.0	SPECIAL	SPECIAL	SPECIAL	SPECIAL	-
TR 60x9	0009.0	SPECIAL	SPECIAL	SPECIAL	SPECIAL	-
SCREWS PITCH 10	0010.0	OP9A100DXF30GI30	OP9A100SXF30GI30	OP9B100DXF30GI30	OP9B100SXF30GI30	60
SCREWS PITCH 12	0012.0	OP9A120DXF30GI30	OP9A120SXF30GI30	OP9B120DXF30GI30	OP9B120SXF30GI30	60

art.OP9 hole Ø35

TR 45x8	0008.0	OP9A80DXF35GI30	OP9A80SXF35GI30	OP9B80DXF35GI30	OP9B80SXF35GI30	80
TR 46x8	0008.0	OP9A80DXF35GI30	OP9A80SXF35GI30	OP9B80DXF35GI30	OP9B80SXF35GI30	80
TR 50x8	0008.0	OP9A80DXF35GI30	OP9A80SXF35GI30	OP9B80DXF35GI30	OP9B80SXF35GI30	80
TR 55x9	0009.0	SPECIAL	SPECIAL	SPECIAL	SPECIAL	-
TR 60x9	0009.0	SPECIAL	SPECIAL	SPECIAL	SPECIAL	-
SCREWS PITCH 10	0010.0	OP9A100DXF35GI30	OP9A100SXF35GI30	OP9B100DXF35GI30	OP9B100SXF35GI30	60
SCREWS PITCH 12	0012.0	OP9A120DXF35GI30	OP9A120SXF35GI30	OP9B120DXF35GI30	OP9B120SXF35GI30	60

INDICATORI DI POSIZIONE DIGITALI "OP5A - OP10 - OP12" FORNIBILI SU RICHIESTA

art.OP5A **FIAMA**

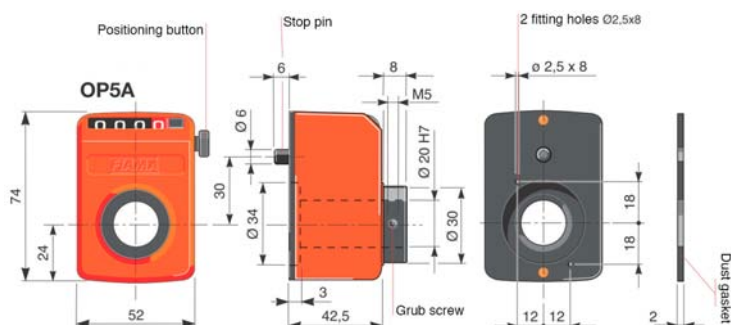
Digital position indicators with direct control (max shaft Ø20 readout 999.9) with reset.

This is a digital indicator with a 4 digit numerator and a small wheel on the side that allows positioning or zeroing.

- **Pitches DX and SX available:** 2, 3, 4, 5, 6, 8, 10, 12.
- **Example of codification for ordering:**
OP5A A 60 DX F20 G AZZ = OP5A (model) + A (view) + 60 (pitch 6) + DX (thread) + F20 (hole) + G (black colour) + **AZZ** (resetting)



Digital position indicator
OP5A



Positioning and zeroing wheel

VIEW A



VIEW B



art.OP10 **FIAMA**

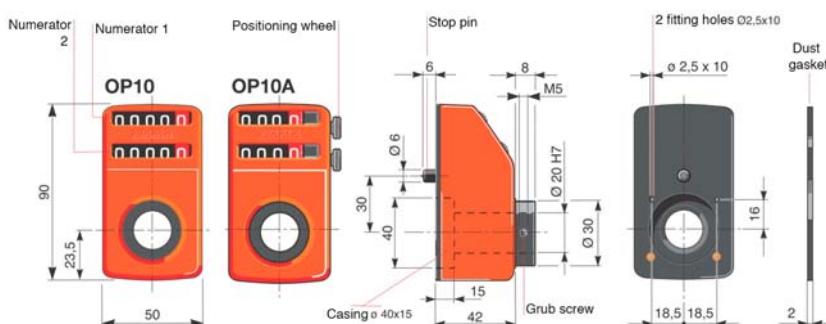
Digital position indicators with direct control (max shaft Ø20 readout 9999.9) with 2 numerators and resets.

This is a digital positioning indicator with two 5 digit numerators and is available in version with one (OP10A1) or two (OP10A2) wheels on the side that allow positioning zeroing.

- **Pitches available:** 2, 3, 4, 5, 6, 8, 10.
- **Combinations of numerators available:**
Dx/Dx = adding/adding
Sx/Sx = subtracting/subtracting
Dx/Sx = adding/subtracting (in reference to numerators 1 and 2)
Sx/Dx = subtracting/adding (in reference to numerators 1 and 2)
- **Version OP10A:**
 Same characteristics of indicator OP10 but with one or two wheels on side for positioning/zeroing on numerators 1 and 2.
- **Example of codification for ordering:**
OP10 A 60 DX SX F20 G = OP10 (model) + A (view) + 60 (pitch 6) + DX (towards num.1) + SX (towards num.2) + F20 (hole) + G (black colour).
Optional: + AZZ (with 1 reset) or + 2AZZ (with double resets).



Digital position indicator
OP10



Indicator **OP10A** with 1
positioning and zeroing
wheel



Indicator **OP10A** with 2
positioning and zeroing
wheels

VIEW A



VIEW B



- 1** NUMERATOR 1
- 2** NUMERATOR 2

art.EP7 **FIAMA**

**Electronic position indicators with direct control
(shaft Ø20 readout 9999.9 - on request Ø14)**

The EP7 electronic position indicator, **powered by internal battery, integrated in the same case as the position sensor and display unit** constituting a device used for measuring linear movements, easy to install, applicable for various types of industrial machines.

The display has five digits plus sign (range of readout -9999.9/+9999.9) with numbers 7,5 mm high, that allow excellent legibility, even at a distance. With the three front buttons it is possible to program the value shown on the display for every turn of the hollow shaft (**possibility of imposing all the steps desired by the operator**), measurement direction, the number of decimal place to view, and activating functions of reference reset, absolute/relative reference, mm/inches conversion and display in degrees. The display shows symbols for all the functions activated. The electronics are housed in an elegant and robust case made of self-extinguishing plastic material. The drive shaft is made of stainless steel.

The power supply is internal with ½ AA 3.6V battery delle which has a life of about 4 years. An indication of low battery appears when it is time to change the battery. It is easily changed without loss of configuration parameters when the shaft remains stationary.

- **Power supply:** ½ AA battery, tension 3,6Volts (lithium-thionyl chloride)
- **Battery life:** About 4 years of continuous use.
- **Weight:** 110 gr
- **Hollow shaft diameter:** Ø20 mm (optional Ø14)
- **Max. rotational speed:** 400 RPM continuous
1000 RPM for brief periods
- **Accuracy:** 4000 impulses/revolution
- **Readout:** -9999,9/+9999,9
- **Display:** LCD, digit height 7,5 mm
- **Keyboard:** 3 buttons for programming and activating functions.
- **Available functions:** Reset/preset, absolute/incremental measurement, conversion mm/inches, visualisation in degrees, 3 distinct origins for tool changing.
- **Working temperature:** 0-50 °C
- **Relative humidity:** 35-85%
- **Degree of protection:** IP54
- **Electromagnetic compatibility:** 2004/108/EC

- For horizontal movements - For vertical movements

CODE	ARTICLE	CODE	ARTICLE
30CSCMF900Z	EP7AGF20	30CSCMF900V	EP7BGF20



Electronic position indicator EP7 view A



Electronic position indicator EP7 view B

VIEW A



VIEW B

