

### Fotocellule cilindriche

### M12 serie DM

*M12 cylindrical photoelectric sensors DM series*



### Caratteristiche principali

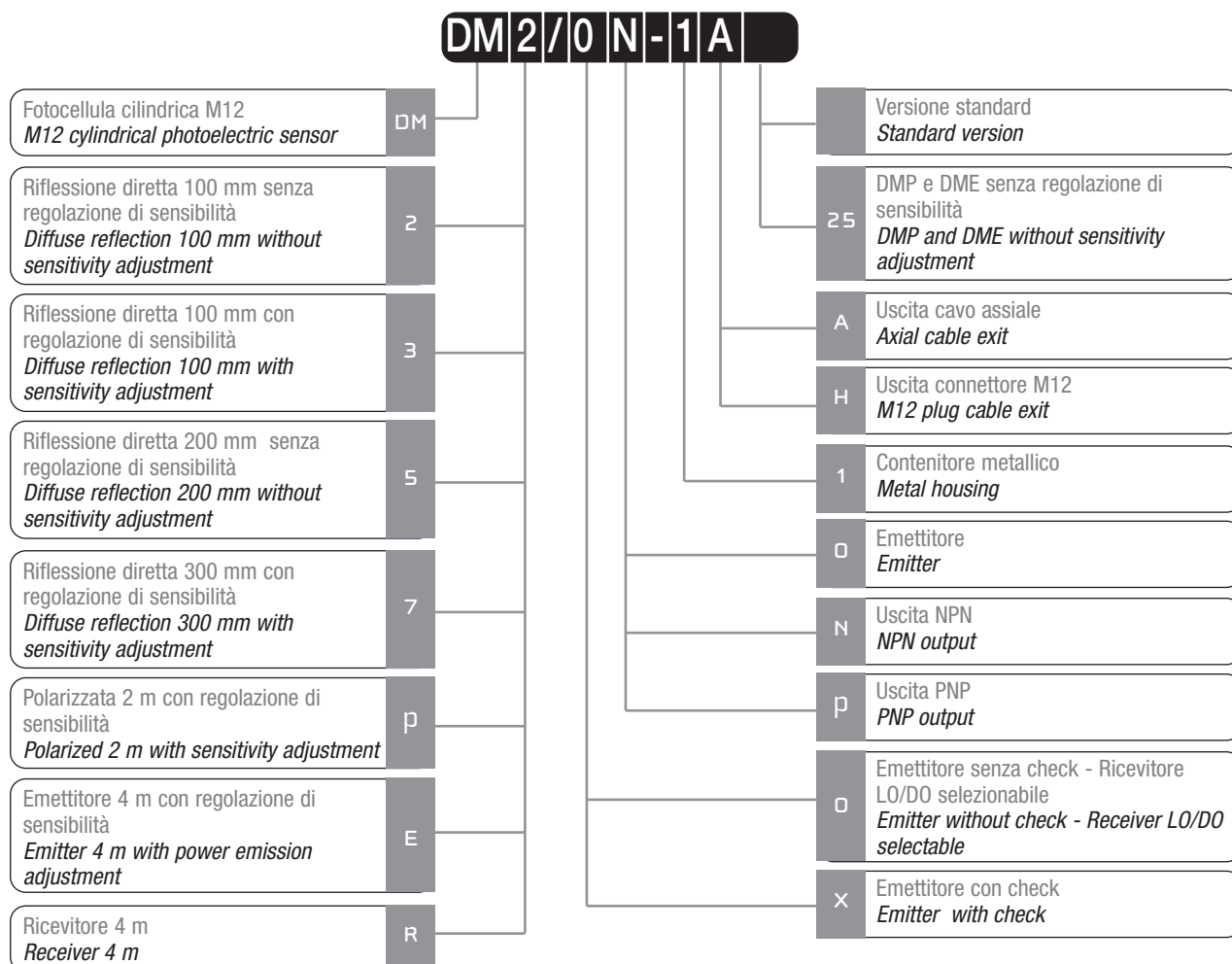
#### Main features

- > Modelli a diffusione diretta, polarizzati e barriera  
> *Models diffuse reflection, polarized and through-beam*
- > Regolazione della sensibilità mediante pulsante teach-in o cablaggio  
> *Local and remote teach-in function*
- > Configurabilità Light-on / Dark-on  
> *Light-on / Dark-on selectable outputs*
- > Grado di protezione IP67  
> *IP67 protection degree*
- > Indicatore LED multifunzione su tutti i modelli  
> *Multifunction LED status indicator*
- > Totalmente protetti contro danneggiamenti di tipo elettrico  
> *Complete protection against electrical damages*
- > Approvazioni: CE e cULus listed  
> *Approvals: CE and cULus listed*



Disponibili, su richiesta, modelli ATEX, cat. 3  
*ATEX models, cat. 3, available on request*

### Descrizione del codice - Code structure



### Modelli disponibili - Available models

| Funzione / Model                    | Portata Distance | Regolazione / Adjusting | 4 fili / 4 wires LO / DO NPN |                 | 4 fili / 4 wires LO / DO PNP |                 |
|-------------------------------------|------------------|-------------------------|------------------------------|-----------------|------------------------------|-----------------|
|                                     |                  |                         | Cavo Cable                   | Connettore Plug | Cavo Cable                   | Connettore Plug |
| Tasteggio diretto<br>Direct diffuse | 100 mm           | No                      | DM2/ON-1A                    | DM2/ON-1H       | DM2/OP-1A                    | DM2/OP-1H       |
|                                     | 100 mm           | Si / Yes                | DM3/ON-1A                    | DM3/ON-1H       | DM3/OP-1A                    | DM3/OP-1H       |
|                                     | 200 mm           | No                      | DM5/ON-1A                    | DM5/ON-1H       | DM5/OP-1A                    | DM5/OP-1H       |
|                                     | 300 mm           | Si / Yes                | DM7/ON-1A                    | DM7/ON-1H       | DM7/OP-1A                    | DM7/OP-1H       |
| Polarizzata / Polarized             | 2 m              | Si / Yes                | DMP/ON-1A                    | DMP/ON-1H       | DMP/OP-1A                    | DMP/OP-1H       |
| Emettitore / Emitter                | 4 m              | Si / Yes                | DME/OO-1A                    | DME/OO-1H       | DME/OO-1A                    | DME/OO-1H       |
| Ricevitore / Receiver               |                  | No                      | DMR/ON-1A                    | DMR/ON-1H       | DMR/OP-1A                    | DMR/OP-1H       |

### Specifiche (In accordo con IEC EN 60947-5-2) - Specifications (According to IEC EN 60947-5-2)

| Modello / Model                                                             | DM2/0*-1*                                                                                                     | DM3/0*-1*             | DM5/0*-1*             | DM7/0*-1*             | DMP/0*-1*                      | DMR/0*-1*                                                                                   | DME/*0-1*             |
|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-----------------------|--------------------------------|---------------------------------------------------------------------------------------------|-----------------------|
|                                                                             | Riflessione diretta / <i>Diffuse reflection</i>                                                               |                       |                       |                       | Polarizzato / <i>Polarized</i> | Barriera / <i>Through-beam</i>                                                              |                       |
| Distanza di rilevazione nominale<br><i>Nominal sensing distance</i>         | 100 mm <sup>(1)</sup>                                                                                         | 100 mm <sup>(1)</sup> | 200 mm <sup>(1)</sup> | 300 mm <sup>(2)</sup> | 2 m <sup>(3)</sup>             | 4 m                                                                                         |                       |
| Emissione / <i>Emission</i>                                                 | Infrarosso / <i>Infrared</i> (880 nm)                                                                         |                       |                       |                       | Rosso / <i>Red</i> (660 nm)    | Infrarossa / <i>Infrared</i> (880 nm)                                                       |                       |
| Tolleranza / <i>Tolerance</i>                                               | +15% / -5%                                                                                                    |                       |                       |                       |                                |                                                                                             |                       |
| Corsa differenziale / <i>Differential travel</i>                            | ≤ 10%                                                                                                         |                       |                       |                       |                                |                                                                                             | ≤20%                  |
| Ripetibilità / <i>Repeat accuracy</i>                                       | 5%                                                                                                            |                       |                       |                       |                                |                                                                                             |                       |
| Tensione di alimentazione / <i>Operating voltage</i>                        | 10-30 Vcc / <i>Vdc</i>                                                                                        |                       |                       |                       |                                |                                                                                             |                       |
| Ondulazione residua / <i>Ripple</i>                                         | ≤10%                                                                                                          |                       |                       |                       |                                |                                                                                             |                       |
| Corrente assorbita / <i>No-load current</i>                                 | ≤20 mA                                                                                                        |                       |                       |                       |                                |                                                                                             |                       |
| Corrente di uscita / <i>Load current</i>                                    | 100 mA                                                                                                        |                       |                       |                       |                                |                                                                                             |                       |
| Corrente di perdita / <i>Leakage current</i>                                | ≤10 µA                                                                                                        |                       |                       |                       |                                |                                                                                             |                       |
| Caduta di tensione in uscita<br><i>Output voltage drop</i>                  | 2 V max. IL=100 mA                                                                                            |                       |                       |                       |                                |                                                                                             |                       |
| Tipo uscita / <i>Output type</i>                                            | NPN o / <i>or</i> PNP - LO / DO selezionabile / <i>selectable</i>                                             |                       |                       |                       |                                |                                                                                             |                       |
| Frequenza di commutazione<br><i>Switching frequency</i>                     | 400 Hz                                                                                                        |                       |                       |                       |                                | 250 Hz                                                                                      |                       |
| Tempo di risposta / <i>Response time</i>                                    | 1,1 ms                                                                                                        |                       |                       |                       |                                | 2 ms                                                                                        |                       |
| Ritardo alla disponibilità<br><i>Time delay before availability</i>         | 150 ms                                                                                                        |                       |                       |                       |                                |                                                                                             |                       |
| Protezioni elettriche alimentazione<br><i>Supply electrical protections</i> | Inversione di polarità, sovratensioni impulsive<br><i>Polarity reversal, transient</i>                        |                       |                       |                       |                                |                                                                                             |                       |
| Protezioni elettriche uscita<br><i>Output electrical protections</i>        | Al cortocircuito (autoripristinante)<br><i>Short circuit (autoreset)</i>                                      |                       |                       |                       |                                |                                                                                             |                       |
| Limiti di temperatura<br><i>Temperature range</i>                           | -25°C...+70°C                                                                                                 |                       |                       |                       |                                |                                                                                             |                       |
| Deriva termica / <i>Temperature drift</i>                                   | 10% Sr                                                                                                        |                       |                       |                       |                                |                                                                                             |                       |
| Grado di protezione / <i>Protection degree</i>                              | IP67(EN60529) <sup>(4)</sup>                                                                                  |                       |                       |                       |                                |                                                                                             |                       |
| Ingresso di check<br><i>Check input</i>                                     | No                                                                                                            |                       |                       |                       |                                | Ingresso disaccoppiato alimentazione 10..30 Vcc<br><i>Decoupled input supply 10..30 Vdc</i> |                       |
| Interferenza alla luce esterna<br><i>Interference to external light</i>     | 3000 lux (lampada ad incandescenza / <i>Incandescent lamp</i> )<br>10000 lux (luce solare / <i>sunlight</i> ) |                       |                       |                       |                                |                                                                                             |                       |
| Indicatori LED / <i>LED indicators</i>                                      | Giallo / <i>Yellow</i>                                                                                        |                       |                       |                       |                                |                                                                                             |                       |
| Regolazione sensibilità<br><i>Sensitivity adjustment</i>                    | No                                                                                                            | Si / Yes<br>(Tech-in) | No                    | Si / Yes<br>(Tech-in) | Si / Yes<br>(Tech-in)          | No                                                                                          | Si / Yes<br>(Trimmer) |
| Materiale contenitore / <i>Housing material</i>                             | Ottone nichelato / <i>Nickel-plated brass</i>                                                                 |                       |                       |                       |                                |                                                                                             |                       |
| Materiale ottica / <i>Optic material</i>                                    | Plastico / <i>Plastic</i>                                                                                     |                       |                       |                       |                                |                                                                                             |                       |
| Coppia serraggio / <i>Tightening torque</i>                                 | 10 Nm                                                                                                         |                       |                       |                       |                                |                                                                                             |                       |
| Peso (appross.) / <i>Weight (approx.)</i>                                   | 54 g (cavo / <i>cab</i> le), 18 g (connettore / <i>plug</i> )                                                 |                       |                       |                       |                                |                                                                                             |                       |

<sup>(1)</sup> Con target bianco 100x100 mm / With 100x100 mm white paper

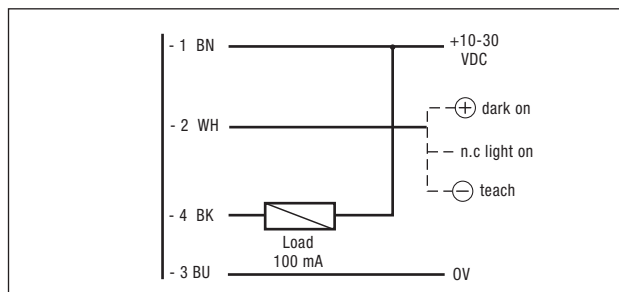
<sup>(2)</sup> Con target bianco 200x200 mm / With 200x200 mm white paper

<sup>(3)</sup> Con riflettore RL 110 / With RL 110 reflector

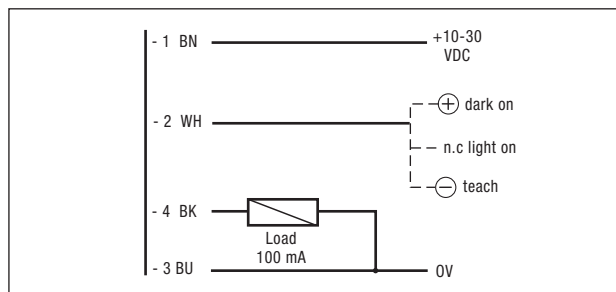
<sup>(4)</sup> Protezione garantita solo con il cavo a connettore correttamente montato / Protection guaranteed only with plug cable well mounted

### Schemi elettrici delle connessioni - Electrical diagrams of the connections

DM2/0N-\*\* DM3/0N-\*\*  
DM5/0N-\*\* DM7/0N-\*\*

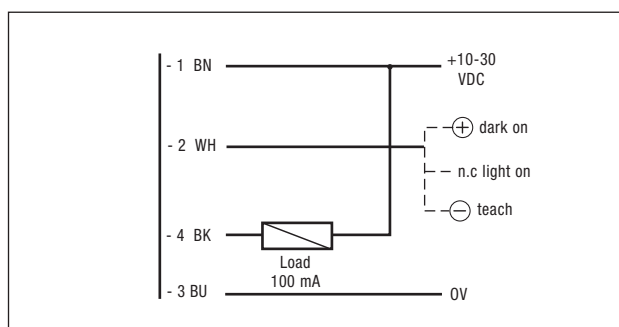


DM2/0P-\*\* DM3/0P-\*\*  
DM5/0P-\*\* DM7/0P-\*\*

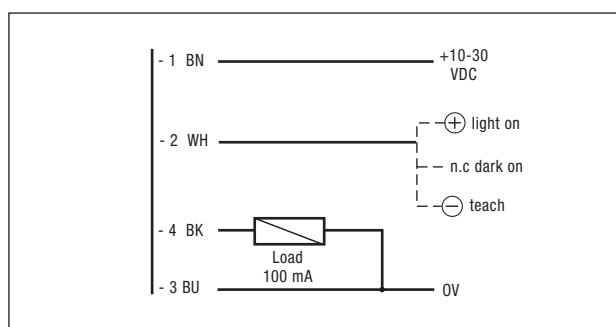


NB.: I modelli DM2,5/0N-\*\* e DM2,5/0P-\*\* sono senza regolazione di sensibilità  
NB.: Models DM2,5/0N-\*\* and DM2,5/0P-\*\* without sensitivity adjustment

DMP/0N-\*\*

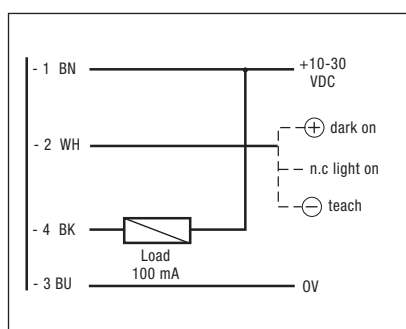


DMP/0P-\*\*

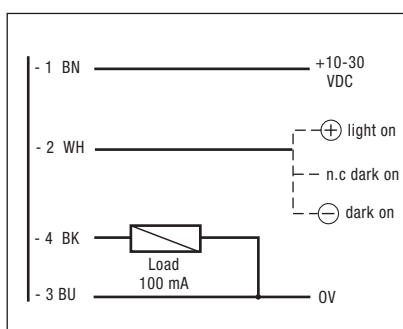


NB.: I modelli DMP/0N-\*\*25 e DMP/0P-\*\*25 sono senza regolazione di sensibilità  
NB.: Models DMP/0N-\*\*25 and DMP/0P-\*\*25 without sensitivity adjustment

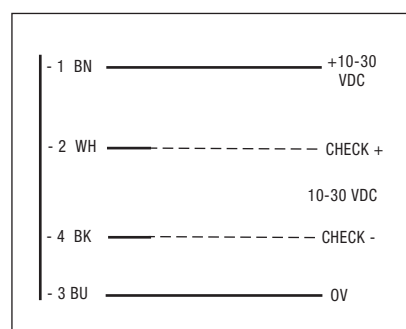
DMR/0N-1\*



DMR/0P-1\*



DME/X0-1\*



NB.: I modelli DME/00-\*\* sono senza check / Models DME/00-\*\* without check

Note: In caso di carico misto, resistivo e capacitivo, la massima capacità ammessa (C) è di 0,1  $\mu$ F per tensione e corrente di uscita massime.

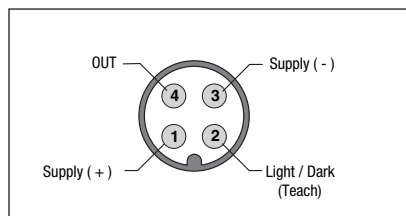
Note: In case of combined load, resistive and capacitive, the maximum admissible capacity (C) is 0,1  $\mu$ F for maximum output voltage and current.

### Legenda Key

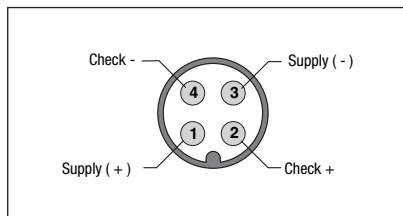
BN → marrone/brown  
BK → nero/black  
PK → rosa/pink  
BU → blu/blue  
WH → bianco/white  
GY → grigio/gray

### Connettore - Plug

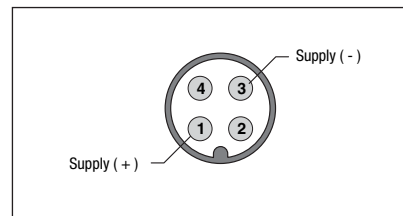
M12 Tasteggio diretto / *Diffuse reflection*  
Polarizzata / *Polarized*  
Ricevitore / *Receiver*



M12 Emittitore con check  
*Emitter with check*

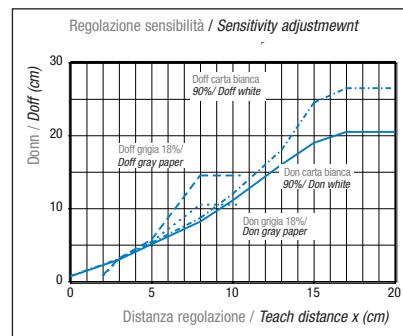
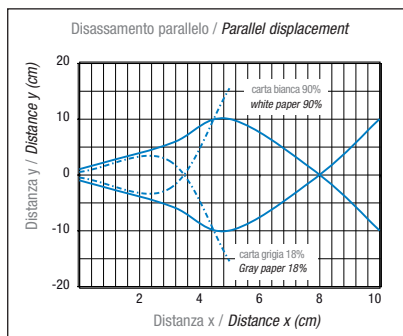
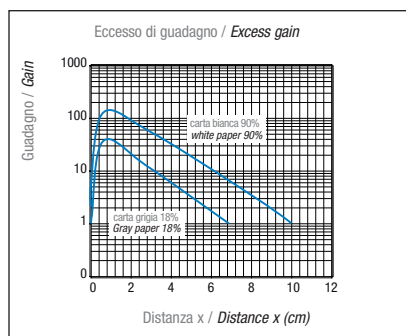


M12 Emittitore senza check  
*Emitter without check*

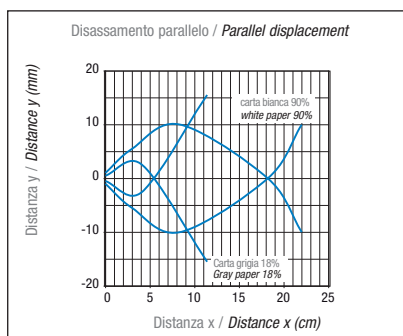
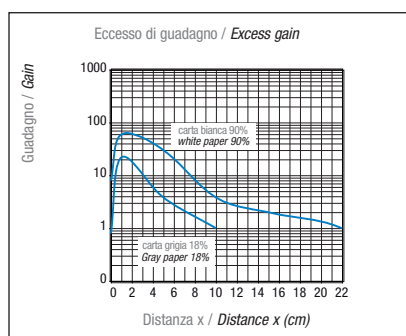


### Curva di risposta - Response diagram

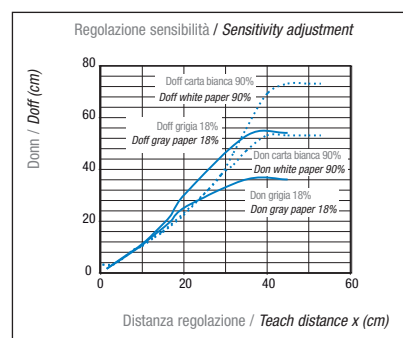
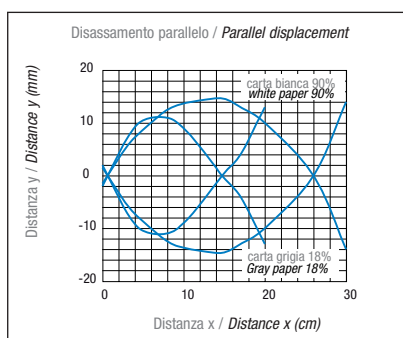
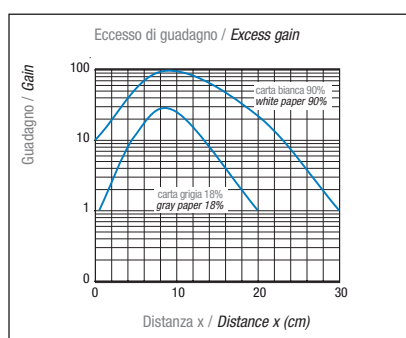
DM2/\*\*\_\*\* DM3/\*\*\_\*\*



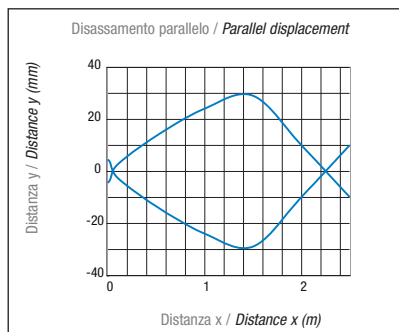
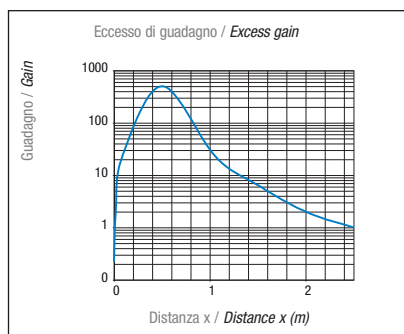
DM5/\*\*\_\*\*



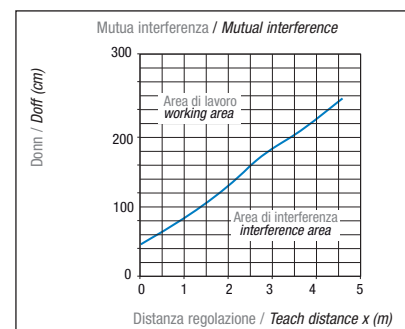
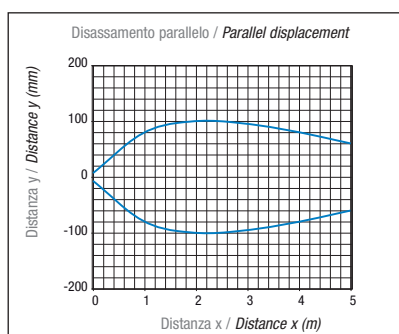
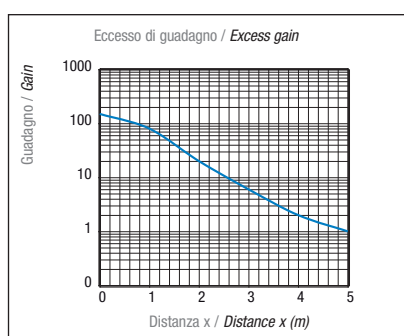
DM7/\*\*\_\*\*



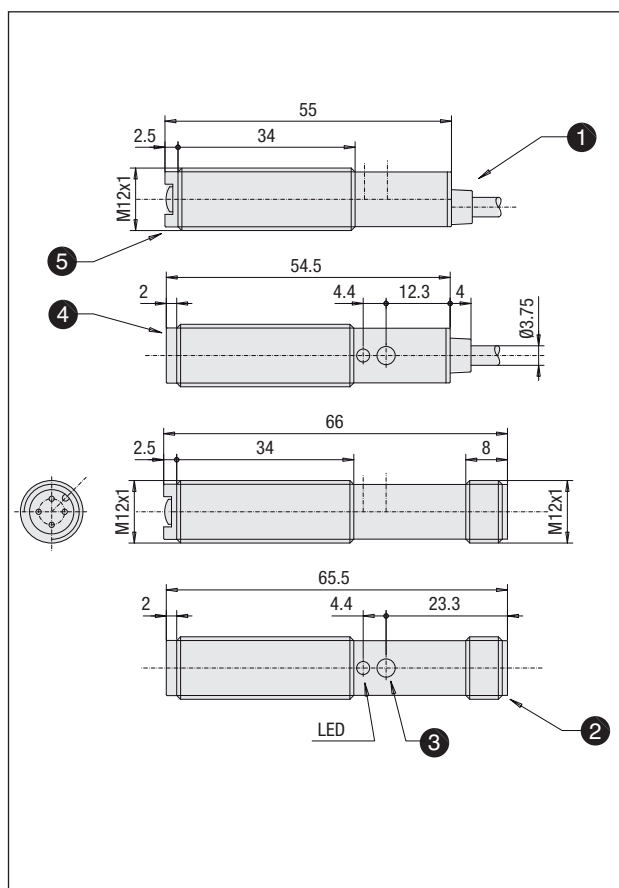
### DMP/\*\*\_\*\*



### DME/\*\*\_\*\* DMR/\*\*\_\*\*



## Dimensioni - Dimensions



### Legenda / Key

- ① Uscita cavo, 4x0,14 mm<sup>2</sup>, Ø 3,75 mm, PVC, 2 m  
Cable exit, 4x0,14 mm<sup>2</sup>, Ø 3,75 mm, PVC, 2 m
- ② Uscita connettore M12 metallico  
M12 metal plug cable exit
- ③ Pulsante di teach-in  
Teach-in button
- ④ Ottica scanner  
Diffuse reflection optic
- ⑤ Ottica reflex  
Retro-reflective optic