

# ARGO

v1.1



ON / OFF Barriers



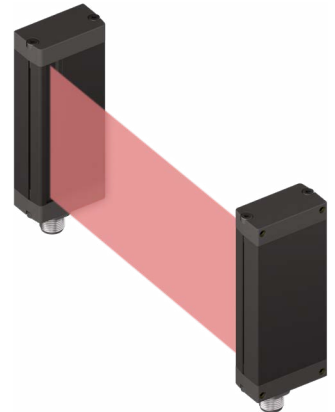
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## 1.1 ON / OFF Barriers

Argo system, consisting of an emitter (TX) and a receiver (RX), generates a dense net of rays scanning the area in several directions. The interruption of a single beam causes switching of the output.

Detection of objects with a rectangular section is extremely effective: laminates, washers, or objects with thickness of a tenth of a millimeter can be easily detected laterally.

The detection area cover heights from 35 mm to 3,000 mm, with installation ranges from 50 mm to 30 m.



## 1.2 Advantages

- **High resolution:** starting from 1mm in diameter.
- **Exceptional response speed:** low response times down to 0.4ms.
- **Reliability in any environment:** high immunity to sunlight, optical and electrical disturbances. The aluminum case ensures appropriate protection for use in harsh environments.
- **Customized solutions:** wide range of options to configure the sensor to your specific needs.

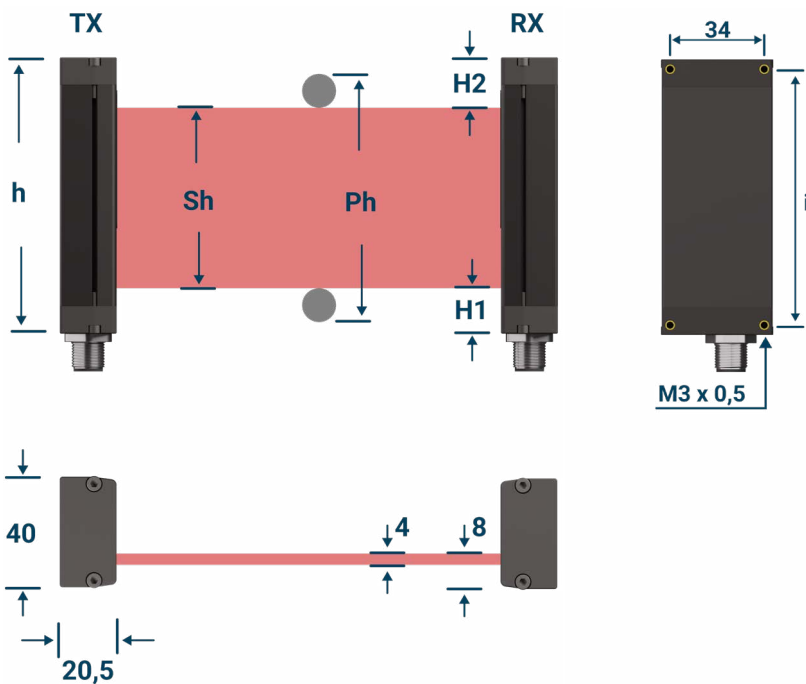
## 1.3 Applications

- Automated warehouses
- Triggers in packaging systems
- Part ejection control
- Part counting at the end of production lines
- Material presence control at the exit of painting plants, rolling mills, wire drawing machines and similar

**NB: Argo series barriers are not safety barriers.**

## 1.4 Technical Specifications

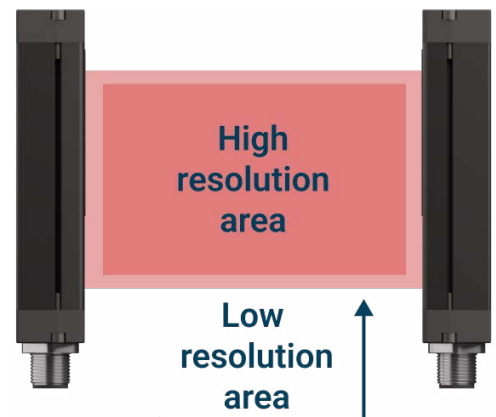
<b>Resolution:</b>	from 0.9 to 25 mm
<b>Body dimension:</b>	from 100 to 3140 mm
<b>Modularity:</b>	from 20, 80, 96 mm based on model
<b>Protected height:</b>	from 35 to 3115 mm
<b>Response time:</b>	from 0.4ms to 75 ms based on model
<b>Installation range:</b>	from 50 mm to 30 m
<b>Outputs:</b>	2 push/pull in counterfase, 80mA All outputs are protected from short-circuit
<b>Light immunity:</b>	200 Klux until L1, 50 Klux above L1



### Legend

- h** Body dimension
- Sh** Sensitive height
- Ph** Height of the area where the object is detectable
- H1** Distance between outside and the first beam
- H2** Distance between outside and the last beam
- i** Distance between fixing holes:  $h - 7\text{mm}$

Although the object is detectable throughout the entire area identified as **Ph**, it is necessary to bear in mind that the zone of maximum sensitivity is located in the center of the detection area and covers approximately 95% of the height and width of the mentioned area.



## 2.1 Details of all Available Models

## Resolution 1mm

Model	h	Sh	Ph	H1	H2	i	Maximum response time (<=L2)	Maximum response time (>L2)
	Tol.: ±0,5mm	mm	mm	mm	mm	Tol.: ±0,5mm	ms	ms
ARH 01-40 Lx SEb	100	35	37	*	*	93	0,5	1,2
ARH 01-50 Lx SEb	100	45	47	*	*	93	0,6	1,4
ARH 01-60 Lx SEb	100	55	57	*	*	93	0,7	1,6
ARH 01-70 Lx SEb	100	65	67	*	*	93	0,8	1,9
ARH 01-80 Lx SEb	100	76	78	12	12	93	0,8	2,1
ARH 01-160 Lx SEb	180	156	158	12	12	173	1,5	4,0
ARH 01-240 Lx SEb	260	236	238	12	12	253	2,1	6,0
ARH 01-320 Lx SEb	340	316	318	12	12	333	2,8	7,9
ARH 01-400 Lx SEb	420	396	398	12	12	413	3,4	9,8
ARH 01-480 Lx SEb	500	476	478	12	12	493	4,0	11,7
ARH 01-560 Lx SEb	580	556	558	12	12	573	4,7	13,6
ARH 01-640 Lx SEb	660	636	638	12	12	653	5,3	15,6
ARH 01-720 Lx SEb	740	716	718	12	12	733	6,0	17,5
ARH 01-800 Lx SEb	820	796	798	12	12	813	6,6	19,4
ARH 01-880 Lx SEb	900	876	878	12	12	893	7,2	21,3
ARH 01-960 Lx SEb	980	956	958	12	12	973	7,9	23,2
ARH 01-1040 Lx SEb	1060	1036	1038	12	12	1053	8,5	25,2
ARH 01-1120 Lx SEb	1140	1116	1118	12	12	1133	9,2	27,1
ARH 01-1200 Lx SEb	1220	1196	1198	12	12	1213	9,8	29,0
ARH 01-1280 Lx SEb	1300	1276	1278	12	12	1293	10,4	30,9
ARH 01-1360 Lx SEb	1380	1356	1358	12	12	1373	11,1	32,8
ARH 01-1440 Lx SEb	1460	1436	1438	12	12	1453	11,7	34,8
ARH 01-1520 Lx SEb	1540	1516	1518	12	12	1533	12,4	36,7
ARH 01-1600 Lx SEb	1620	1596	1598	12	12	1613	13,0	38,6

\* variable based on the position of the detection area

Range (Lx)	
L03	from 50 to 300mm
L08	from 100 to 800mm
L2	from 300 to 2000mm
L4	from 500 to 4000mm

Resolution 2mm

Model	h	Sh	Ph	H1	H2	i	Maximum response time (<=L2)	Maximum response time (>L2)
	Tol.: ±0,5mm	mm	mm	mm	mm	Tol.: ±0,5mm	ms	ms
ARGO 02-40 Lx SEb	100	35	39	*	*	93	0,6	1,2
ARGO 02-50 Lx SEb	100	45	49	*	*	93	0,7	1,4
ARGO 02-60 Lx SEb	100	55	59	*	*	93	0,8	1,6
ARGO 02-70 Lx SEb	100	65	69	*	*	93	0,9	1,9
ARGO 02-80 Lx SEb	100	75	79	13	12	93	1,0	2,1
ARH 02-100 Lx SEb	120	95	99	13	12	113	1,0	2,6
ARH 02-120 Lx SEb	140	115	119	13	12	133	1,2	3,1
ARH 02-140 Lx SEb	160	135	139	13	12	153	1,3	3,6
ARH 02-160 Lx SEb	180	155	159	13	12	173	1,5	4,0
ARH 02-180 Lx SEb	200	175	179	13	12	193	1,6	4,5
ARH 02-200 Lx SEb	220	195	199	13	12	213	1,8	5,0
ARH 02-220 Lx SEb	240	215	219	13	12	233	2,0	5,5
ARH 02-240 Lx SEb	260	235	239	13	12	253	2,1	6,0
ARH 02-260 Lx SEb	280	255	259	13	12	273	2,3	6,4
ARH 02-280 Lx SEb	300	275	279	13	12	293	2,4	6,9
ARH 02-300 Lx SEb	320	295	299	13	12	313	2,6	7,4
ARH 02-320 Lx SEb	340	315	319	13	12	333	2,8	7,9
ARH 02-400 Lx SEb	420	395	399	13	12	413	3,4	9,8
ARH 02-480 Lx SEb	500	475	479	13	12	493	4,0	11,7
ARH 02-560 Lx SEb	580	555	559	13	12	573	4,7	13,6
ARH 02-640 Lx SEb	660	635	639	13	12	653	5,3	15,6
ARH 02-720 Lx SEb	740	715	719	13	12	733	6,0	17,5
ARH 02-800 Lx SEb	820	795	799	13	12	813	6,6	19,4
ARH 02-880 Lx SEb	900	875	879	13	12	893	7,2	21,3
ARH 02-960 Lx SEb	980	955	959	13	12	973	7,9	23,2
ARH 02-1040 Lx SEb	1060	1035	1039	13	12	1053	8,5	25,2
ARH 02-1120 Lx SEb	1140	1115	1119	13	12	1133	9,2	27,1
ARH 02-1200 Lx SEb	1220	1195	1199	13	12	1213	9,8	29,0
ARH 02-1280 Lx SEb	1300	1275	1279	13	12	1293	10,4	30,9
ARH 02-1360 Lx SEb	1380	1355	1359	13	12	1373	11,1	32,8
ARH 02-1440 Lx SEb	1460	1435	1439	13	12	1453	11,7	34,8
ARH 02-1520 Lx SEb	1540	1515	1519	13	12	1533	12,4	36,7
ARH 02-1600 Lx SEb	1620	1595	1599	13	12	1613	13,0	38,6
ARH 02-1680 Lx SEb	1700	1675	1679	13	12	1693	13,6	40,5
ARH 02-1760 Lx SEb	1780	1755	1759	13	12	1773	14,3	42,4
ARH 02-1840 Lx SEb	1860	1835	1839	13	12	1853	14,9	44,4
ARH 02-1920 Lx SEb	1940	1915	1919	13	12	1933	15,6	46,3
ARH 02-2000 Lx SEb	2020	1995	1999	13	12	2013	16,2	48,2
ARH 02-2080 Lx SEb	2100	2075	2079	13	12	2093	16,8	50,1
ARH 02-2160 Lx SEb	2180	2155	2159	13	12	2173	17,5	52,0
ARH 02-2240 Lx SEb	2260	2235	2239	13	12	2253	18,1	54,0
ARH 02-2320 Lx SEb	2340	2315	2319	13	12	2333	18,8	55,9
ARH 02-2400 Lx SEb	2420	2395	2399	13	12	2413	19,4	57,8
ARH 02-2480 Lx SEb	2500	2475	2479	13	12	2493	20,0	59,7
ARH 02-2560 Lx SEb	2580	2555	2559	13	12	2573	20,7	61,6
ARH 02-2640 Lx SEb	2660	2635	2639	13	12	2653	21,3	63,6
ARH 02-2720 Lx SEb	2740	2715	2719	13	12	2733	22,0	65,5
ARH 02-2800 Lx SEb	2820	2795	2799	13	12	2813	22,6	67,4
ARH 02-2880 Lx SEb	2900	2875	2879	13	12	2893	23,2	69,3
ARH 02-2960 Lx SEb	2980	2955	2959	13	12	2973	23,9	71,2
ARH 02-3040 Lx SEb	3060	3035	3039	13	12	3053	24,5	73,2
ARH 02-3120 Lx SEb	3140	3115	3119	13	12	3133	25,2	75,1

\* variable based on the position of the detection area

Range (Lx)	
L03	from 50 to 300mm
L08	from 100 to 800mm
L2	from 300 to 2000mm
L4	from 500 to 4000mm
L5	from 500 to 5000mm

Resolution 4mm

Model	h	Sh	Ph	H1	H2	i	Maximum response time (<=L2)	Maximum response time (>L2)
	Tol.: ±0,5mm	mm	mm	mm	mm	Tol.: ±0,5mm	ms	ms
ARGO 04-40 Lx	100	35	43	*	*	93	0,4	0,7
ARGO 04-50 Lx	100	45	53	*	*	93	0,5	0,8
ARGO 04-60 Lx	100	55	63	*	*	93	0,5	0,9
ARGO 04-70 Lx	100	65	73	*	*	93	0,6	1,0
ARGO 04-80 Lx	100	69	77	16	15	93	0,6	1,2
ARH 04-100 Lx	120	95	103	16	15	113	0,6	1,4
ARH 04-120 Lx	140	115	123	16	15	133	0,7	1,6
ARH 04-140 Lx	160	135	143	16	15	153	0,8	1,9
ARH 04-160 Lx	180	155	163	16	15	173	0,8	2,1
ARH 04-180 Lx	200	175	183	16	15	193	0,9	2,4
ARH 04-200 Lx	220	195	203	16	15	213	1,0	2,6
ARH 04-220 Lx	240	215	223	16	15	233	1,1	2,8
ARH 04-240 Lx	260	235	243	16	15	253	1,2	3,1
ARH 04-260 Lx	280	255	263	16	15	273	1,2	3,3
ARH 04-280 Lx	300	275	283	16	15	293	1,3	3,6
ARH 04-300 Lx	320	295	303	16	15	313	1,4	3,8
ARH 04-320 Lx	340	315	323	16	15	333	1,5	4,0
ARH 04-400 Lx	420	395	403	16	15	413	1,8	5,0
ARH 04-480 Lx	500	475	483	16	15	493	2,1	6,0
ARH 04-560 Lx	580	555	563	16	15	573	2,4	6,9
ARH 04-640 Lx	660	635	643	16	15	653	2,8	7,9
ARH 04-720 Lx	740	715	723	16	15	733	3,1	8,8
ARH 04-800 Lx	820	795	803	16	15	813	3,4	9,8
ARH 04-880 Lx	900	875	883	16	15	893	3,7	10,8
ARH 04-960 Lx	980	955	963	16	15	973	4,0	11,7
ARH 04-1040 Lx	1060	1035	1043	16	15	1053	4,4	12,7
ARH 04-1120 Lx	1140	1115	1123	16	15	1133	4,7	13,6
ARH 04-1200 Lx	1220	1195	1203	16	15	1213	5,0	14,6
ARH 04-1280 Lx	1300	1275	1283	16	15	1293	5,3	15,6
ARH 04-1360 Lx	1380	1355	1363	16	15	1373	5,6	16,5
ARH 04-1440 Lx	1460	1435	1443	16	15	1453	6,0	17,5
ARH 04-1520 Lx	1540	1515	1523	16	15	1533	6,3	18,4
ARH 04-1600 Lx	1620	1595	1603	16	15	1613	6,6	19,4
ARH 04-1680 Lx	1700	1675	1683	16	15	1693	6,9	20,4
ARH 04-1760 Lx	1780	1755	1763	16	15	1773	7,2	21,3
ARH 04-1840 Lx	1860	1835	1843	16	15	1853	7,6	22,3
ARH 04-1920 Lx	1940	1915	1923	16	15	1933	7,9	23,2
ARH 04-2000 Lx	2020	1995	2003	16	15	2013	8,2	24,2
ARH 04-2080 Lx	2100	2075	2083	16	15	2093	8,5	25,2
ARH 04-2160 Lx	2180	2155	2163	16	15	2173	8,8	26,1
ARH 04-2240 Lx	2260	2235	2243	16	15	2253	9,2	27,1
ARH 04-2320 Lx	2340	2315	2323	16	15	2333	9,5	28,0
ARH 04-2400 Lx	2420	2395	2403	16	15	2413	9,8	29,0
ARH 04-2480 Lx	2500	2475	2483	16	15	2493	10,1	30,0
ARH 04-2560 Lx	2580	2555	2563	16	15	2573	10,4	30,9
ARH 04-2640 Lx	2660	2635	2643	16	15	2653	10,8	31,9
ARH 04-2720 Lx	2740	2715	2723	16	15	2733	22,0	65,5
ARH 04-2800 Lx	2820	2795	2803	16	15	2813	22,6	67,4
ARH 04-2880 Lx	2900	2875	2883	16	15	2893	23,2	69,3
ARH 04-2960 Lx	2980	2955	2963	16	15	2973	23,9	71,2
ARH 04-3040 Lx	3060	3035	3043	16	15	3053	24,5	73,2
ARH 04-3120 Lx	3140	3115	3123	16	15	3133	25,2	75,1

\* variable based on the position of the detection area

Range (Lx)	
L03	from 50 to 300mm
L08	from 100 to 800mm
L2	from 300 to 2000mm
L4	from 500 to 4000mm
L6	from 500 to 6000mm
L9	from 500 to 9000mm

## Resolution 8mm

Model	h	Sh	Ph	H1	H2	i	Maximum response time (<=L2)	Maximum response time (>L2)
	Tol.: ±0,5mm	mm	mm	mm	mm	Tol.: ±0,5mm	ms	ms
ARGO 08-80 Lx	100	69	85	16	15	93	0,6	1,2
ARH 08-100 Lx	120	89	105	16	15	113	0,6	1,4
ARH 08-120 Lx	140	109	125	16	15	133	0,6	1,4
ARH 08-140 Lx	160	129	145	16	15	153	0,8	1,9
ARH 08-160 Lx	180	149	165	16	15	173	0,8	2,1
ARH 08-180 Lx	200	169	185	16	15	193	0,9	2,4
ARH 08-200 Lx	212	180	196	16	16	205	0,8	2,1
ARH 08-240 Lx	260	228	244	16	16	253	1,2	3,1
ARH 08-300 Lx	308	276	292	16	16	301	1,8	5,0
ARH 08-400 Lx	404	372	388	16	16	397	2,1	6,0
ARH 08-500 Lx	500	468	484	16	16	493	2,4	6,9
ARH 08-600 Lx	596	564	580	16	16	589	2,8	7,9
ARH 08-700 Lx	692	660	676	16	16	685	3,1	8,8
ARH 08-800 Lx	788	756	772	16	16	781	3,4	9,8
ARH 08-900 Lx	884	852	868	16	16	877	3,7	10,8
ARH 08-1000 Lx	980	948	964	16	16	973	4,0	11,7
ARH 08-1050 Lx	1076	1044	1060	16	16	1069	4,4	12,7
ARH 08-1150 Lx	1172	1140	1156	16	16	1165	4,7	13,6
ARH 08-1250 Lx	1268	1236	1252	16	16	1261	5,0	14,6
ARH 08-1350 Lx	1364	1332	1348	16	16	1357	5,3	15,6
ARH 08-1450 Lx	1460	1428	1444	16	16	1453	5,6	16,5
ARH 08-1550 Lx	1556	1524	1540	16	16	1549	6,0	17,5
ARH 08-1650 Lx	1652	1620	1636	16	16	1645	6,3	18,4
ARH 08-1750 Lx	1748	1716	1732	16	16	1741	6,6	19,4
ARH 08-1850 Lx	1844	1812	1828	16	16	1837	6,9	20,4
ARH 08-1950 Lx	1940	1908	1924	16	16	1933	7,2	21,3
ARH 08-2000 Lx	2036	2004	2020	16	16	2029	7,6	22,3
ARH 08-2100 Lx	2132	2100	2116	16	16	2125	7,9	23,2
ARH 08-2200 Lx	2228	2196	2212	16	16	2221	8,2	24,2
ARH 08-2300 Lx	2324	2292	2308	16	16	2317	8,5	25,2
ARH 08-2400 Lx	2420	2388	2404	16	16	2413	8,8	26,1
ARH 08-2500 Lx	2516	2484	2500	16	16	2509	9,2	27,1
ARH 08-2600 Lx	2612	2580	2596	16	16	2605	9,5	28,0
ARH 08-2700 Lx	2708	2676	2692	16	16	2701	9,8	29,0
ARH 08-2800 Lx	2804	2772	2788	16	16	2797	10,1	30,0
ARH 08-2900 Lx	2900	2868	2884	16	16	2893	10,4	30,9
ARH 08-3000 Lx	2996	2964	2980	16	16	2989	10,8	31,9
ARH 08-3100 Lx	3092	3060	3076	16	16	3085	11,1	32,8

Range (Lx)	
L08	from 100 to 800mm
L2	from 300 to 2000mm
L4	from 500 to 4000mm
L6	from 500 to 6000mm
L9	from 500 to 9000mm



Resolution 12mm

Model	h	Sh	Ph	H1	H2	i	Maximum response time (<=L2)	Maximum response time (>L2)
	Tol.: ±0,5mm	mm	mm	mm	mm	Tol.: ±0,5mm	ms	ms
ARGO 12-100 Lx	116	72	96	22	22	109	0,4	0,7
ARH 12- 200 Lx	212	168	192	22	22	205	0,5	1,2
ARH 12- 300 Lx	308	264	288	22	22	301	0,7	1,6
ARH 12- 400 Lx	404	360	384	22	22	397	0,8	2,1
ARH 12- 500 Lx	500	456	480	22	22	493	1,0	2,6
ARH 12- 600 Lx	596	552	576	22	22	589	1,2	3,1
ARH 12- 700 Lx	692	648	672	22	22	685	1,3	3,6
ARH 12- 800 Lx	788	744	768	22	22	781	1,5	4,0
ARH 12- 900 Lx	884	840	864	22	22	877	1,6	4,5
ARH 12-1000 Lx	980	936	960	22	22	973	1,8	5,0
ARH 12-1050 Lx	1076	1032	1056	22	22	1069	2,0	5,5
ARH 12-1150 Lx	1172	1128	1152	22	22	1165	2,1	6,0
ARH 12-1250 Lx	1268	1224	1248	22	22	1261	2,3	6,4
ARH 12-1350 Lx	1364	1320	1344	22	22	1357	2,4	6,9
ARH 12-1450 Lx	1460	1416	1440	22	22	1453	2,6	7,4
ARH 12-1550 Lx	1556	1512	1536	22	22	1549	2,8	7,9
ARH 12-1650 Lx	1652	1608	1632	22	22	1645	2,9	8,4
ARH 12-1750 Lx	1748	1704	1728	22	22	1741	3,1	8,8
ARH 12-1850 Lx	1844	1800	1824	22	22	1837	3,2	9,3
ARH 12-1950 Lx	1940	1896	1920	22	22	1933	3,4	9,8
ARH 12-2000 Lx	2036	1992	2016	22	22	2029	3,6	10,3
ARH 12-2100 Lx	2132	2088	2112	22	22	2125	3,7	10,8
ARH 12-2200 Lx	2228	2184	2208	22	22	2221	3,9	11,2
ARH 12-2300 Lx	2324	2280	2304	22	22	2317	4,0	11,7
ARH 12-2400 Lx	2420	2376	2400	22	22	2413	4,2	12,2
ARH 12-2500 Lx	2516	2472	2496	22	22	2509	4,4	12,7
ARH 12-2600 Lx	2612	2568	2592	22	22	2605	4,5	13,2
ARH 12-2700 Lx	2708	2664	2688	22	22	2701	4,7	13,6
ARH 12-2800 Lx	2804	2760	2784	22	22	2797	4,8	14,1
ARH 12-2900 Lx	2900	2856	2880	22	22	2893	5,0	14,6
ARH 12-3000 Lx	2996	2952	2976	22	22	2989	5,2	15,1
ARH 12-3100 Lx	3092	3048	3072	22	22	3085	5,3	15,6

Range (Lx)	
L08	from 100 to 800mm
L2	from 300 to 2000mm
L4	from 500 to 4000mm
L6	from 500 to 6000mm
L9	from 500 to 9000mm

## Resolution 25mm

Model	h	Sh	Ph	H1	H2	i	Maximum response time (<=L2)	Maximum response time (>L2)
	Tol.: ±0,5mm	mm	mm	mm	mm	Tol.: ±0,5mm	ms	ms
ARGO 25-100 Lx	116	72	122	22	22	109	0,4	0,7
ARH 25- 200 Lx	212	168	218	22	22	205	0,5	1,2
ARH 25- 300 Lx	308	264	314	22	22	301	0,4	0,9
ARH 25- 400 Lx	404	360	410	22	22	397	0,5	1,2
ARH 25- 500 Lx	500	456	506	22	22	493	0,6	1,4
ARH 25- 600 Lx	596	552	602	22	22	589	0,7	1,6
ARH 25- 700 Lx	692	648	698	22	22	685	0,8	1,9
ARH 25- 800 Lx	788	744	794	22	22	781	0,8	2,1
ARH 25- 900 Lx	884	840	890	22	22	877	0,9	2,4
ARH 25-1000 Lx	980	936	986	22	22	973	1,0	2,6
ARH 25-1050 Lx	1076	1032	1082	22	22	1069	1,1	2,8
ARH 25-1150 Lx	1172	1128	1178	22	22	1165	1,2	3,1
ARH 25-1250 Lx	1268	1224	1274	22	22	1261	1,2	3,3
ARH 25-1350 Lx	1364	1320	1370	22	22	1357	1,3	3,6
ARH 25-1450 Lx	1460	1416	1466	22	22	1453	1,4	3,8
ARH 25-1550 Lx	1556	1512	1562	22	22	1549	1,5	4,0
ARH 25-1650 Lx	1652	1608	1658	22	22	1645	1,6	4,3
ARH 25-1750 Lx	1748	1704	1754	22	22	1741	1,6	4,5
ARH 25-1850 Lx	1844	1800	1850	22	22	1837	1,7	4,8
ARH 25-1950 Lx	1940	1896	1946	22	22	1933	1,8	5,0
ARH 25-2000 Lx	2036	1992	2042	22	22	2029	1,9	5,2
ARH 25-2100 Lx	2132	2088	2138	22	22	2125	2,0	5,5
ARH 25-2200 Lx	2228	2184	2234	22	22	2221	2,0	5,7
ARH 25-2300 Lx	2324	2280	2330	22	22	2317	2,1	6,0
ARH 25-2400 Lx	2420	2376	2426	22	22	2413	2,2	6,2
ARH 25-2500 Lx	2516	2472	2522	22	22	2509	2,3	6,4
ARH 25-2600 Lx	2612	2568	2618	22	22	2605	2,4	6,7
ARH 25-2700 Lx	2708	2664	2714	22	22	2701	2,4	6,9
ARH 25-2800 Lx	2804	2760	2810	22	22	2797	2,5	7,2
ARH 25-2900 Lx	2900	2856	2906	22	22	2893	2,6	7,4
ARH 25-3000 Lx	2996	2952	3002	22	22	2989	2,7	7,6
ARH 25-3100 Lx	3092	3048	3098	22	22	3085	2,8	7,9

Range (Lx)	
L08	from 300 to 800mm
L2	from 300 to 2000mm
L4	from 500 to 4000mm
L6	from 500 to 6000mm
L9	from 500 to 9000mm
L15	from 500 to 15000mm
L30	from 1 to 30m

### 3.1 SE - Sensibility Adjustment

It is necessary in case of detection at the limit of resolution and in case of detection of transparencies. It can be ordered in three different positions: bottom (SEb), front (SEa), rear (SEp).



#### SEb - Bottom adjustment

The bottom adjustment is standard for Argo 01 and 02 series.



#### SEa - Front adjustment

The front adjustment replaces the bottom adjustment in case of customer's need.



#### SEp - Rear adjustment

The rear adjustment replaces the bottom adjustment in case of customer's need.

### 3.2 Timers

The timer keeps the output in the ON condition for the selected time. The standard timing is 20 ms.

The standard times available for timers are: 0.1, 0.2, 0.5, 1, 1.5, 2.5 seconds.

#### TF - Fixed timer

Non-adjustable timer customizable according to your needs.

In case of objects very close to each other, the standard timing could make detect only one object.

With the TF0 option you have a fixed output timing of 1ms.

This option can also be used to measure the length of the object in transit based on his travel time.



#### TE - External timer

Variable external timer via knob situated on the top cap of the receiver.



#### Ti - Internal timer

Variable internal timer with a cap on the aluminum case of the receiver



#### Tia - Internal front timer

Variable internal timer positioned on the lower cap of the receiver.

### 3.3 NF - Response time reduction

Option that allows to halve the response time of the sensor by removing the flash protection.

### 3.4 T - Test input






Option that simulates the interruption of the beams to check the correct operation of the plant. This can be activated from the outside.

### 3.5 CODE - Encoding between TX and RX

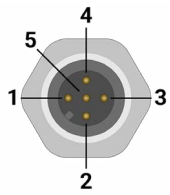
This option prevent interference between multiple nearby sensors, these systems use **DIP switch** coding for communication between the emitter and receiver.



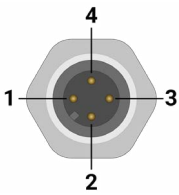
## 4.1 Available Connections

	<p style="text-align: center;"><b>M12</b></p> <p><b>RX:</b> M12 male, 5 or 4 pins.  <b>TX:</b> M12 male, 2 or 4 pins.</p> <p><i>The choice of connector depends on the required functions.</i></p>
	<p style="text-align: center;"><b>CavM12</b></p> <p><b>RX:</b> cable M12 male, 5 or 4 pins, 30cm.  <b>TX:</b> cable M12 male, 4 pins, 30cm.</p> <p><i>The choice of connector depends on the required functions.</i></p>
	<p style="text-align: center;"><b>CavM8</b></p> <p><b>RX:</b> cable M8 male, 5 or 4 pins, 30cm.  <b>TX:</b> cable M8 male, 4 pins, 30cm.</p> <p><i>The choice of connector depends on the required functions.</i></p>
	<p style="text-align: center;"><b>CavA - CavB</b></p> <p>Connection via front cable (CavA) or bottom cable (CavB).  The length of the cable is customizable according to customer requirements.</p>
	<p style="text-align: center;"><b>MExx</b></p> <p><b>RX B:</b> M12 male, 5 or 4 pins.  <b>TX A - RX A</b> interconnection made via cable with an M12 female connector, 4 or 2 pins, of length xx cm.</p> <p>This is the optimal solution for short distances between TX and RX.</p> <p><i>The choice of connector depends on the required functions.</i></p>

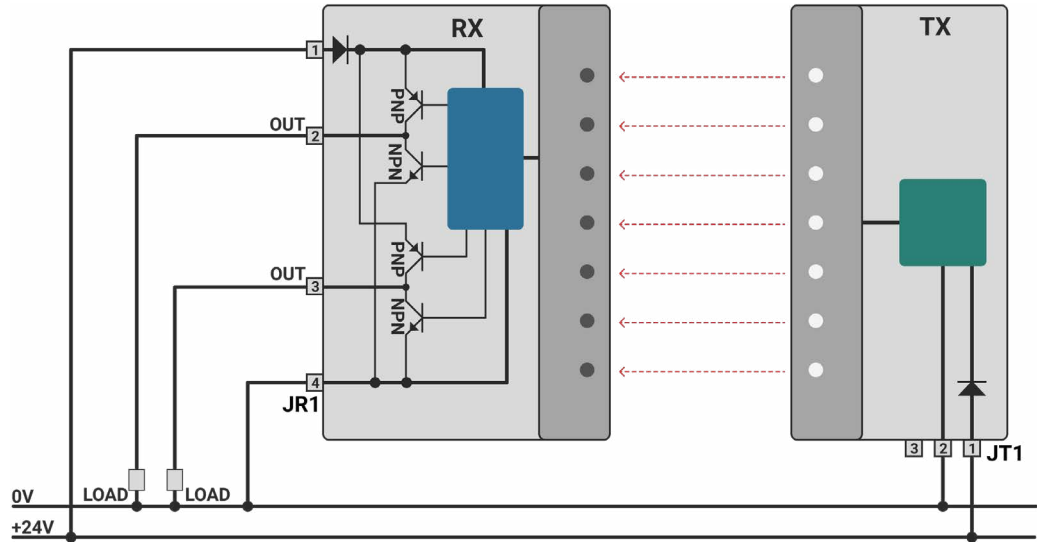
## 4.2 Electrical Connection



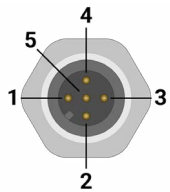
Pin	Colour	RX
1	Brown	+24Vdc
2	White	Out 1
3	Blue	0 Vdc
4	Black	Out 2
5	Grey	CODE



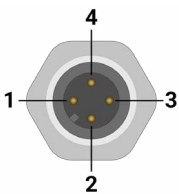
Pin	Colour	TX
1	Brown	+ 24 Vdc
2	White	TEST
3	Blue	0 Vdc
4	Black	CODE



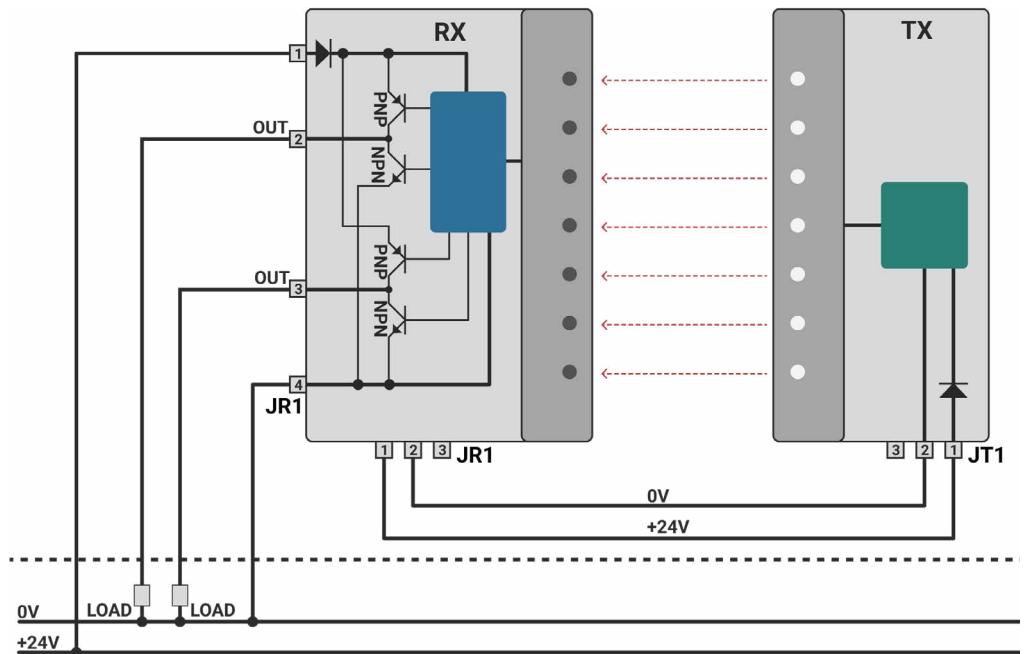
### 4.2.1 MExx



Pin	Colour	RX
1	Brown	+24Vdc
2	White	Out 1
3	Blue	0 Vdc
4	Black	Out 2
5	Grey	CODE



Pin	Colour	TX
1	Brown	+ 24 Vdc
2	White	TEST
3	Blue	0 Vdc
4	Black	CODE



### 5.1 Common Technical Characteristics

Supply voltage	24Vdc +/- 20%
Power consumption	200mA max, without load
Protection level	IP65
External protection	Polycarbonate, Glass
Status LED	The YELLOW LED on the TX indicates that the device is powered on; The RED/GREEN LED on the RX indicates whether the detection area is free (GREEN) or occupied (RED)
Output PN	2 x NPN / PNP 80mA max, protected against short circuits
Light immunity	200 Klux until L1, 50 Klux above L1; ARH 25: > 200Klux
Flash immunity	200Hz until L1, 100Hz above L1

### 5.2 Identification Code

<b>ARH 04-80</b>	<b>L05</b>	<b>SEa</b>	<b>Ti 0,5</b>	<b>ME100</b>
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<b>MODEL</b>					
<i>Check available models</i>					
<b>RANGE</b>					
<i>Lx</i>					
<b>OPTIONS</b>					
<b>SEb</b>	Bottom Sensibility Adjustment				
<b>SEa</b>	Front Sensibility Adjustment				<i>Sensitivity</i>
<b>SEp</b>	Rear Sensibility Adjustment				
<b>TFx</b>	Fixed Timer				
<b>TEx</b>	External Timer				<i>Timer</i>
<b>Tix</b>	Internal Timer				
<b>Tiax</b>	Internal Front Timer				
<b>NF</b>	No Flash				
<b>T</b>	Test input				
<b>CODE</b>	Code				
<b>CONNECTION</b>					
<b>M12</b>	RX M12 5-4pins, TX M12 4-2pins				
<b>CavM12</b>	RX cable M12 30cm 5-4pins TX cable M12 30cm 4-2pins				
<b>CavM8</b>	RX cable M8 30cm 5-4pins, TX cable M8 30cm 4-2pins				
<b>CavA</b>	Front cable xxcm				
<b>CavB</b>	Bottom cable xxcm				
<b>MExx</b>	RX M12 5pins, interconnection M12 cable xx cm, TX M12 4pins				

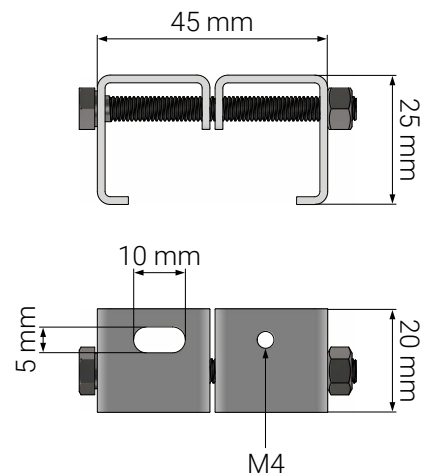
## 6.1 KPL02 Mounting Bracket Kit

Mounting bracket kit for barriers, particularly suitable for barriers larger than 500mm. The barrier can be locked using the supplied screw and fixed laterally or using an additional M4 screw to fix the barrier at the back.

For best stability, it is recommended to position the brackets near the lower and upper caps.

The KPL02 kit contains:

- 4 PL02 stainless steel brackets
- 4 hexagonal head screws 5 x 50
- 4 M5 nuts



## 6.2 Connecting Cables

Available cables:

Code	Length	Description
CAV-F4P-M12D-5m	5m	Cable M12 4 pin, female, straight, PVC, unshielded
CAV-F4P-M12D-10m	10m	
CAV-F4P-M12D-15m	15m	
CAV-F4P-M12D-20m	20m	
CAV-F4P-M12D-25m	25m	
CAV-F4P-M12D-30m	30m	
CAV-F5P-M12DS-5m	5m	Cable M12 5 pin, female, straight, PVC, shielded
CAV-F5P-M12DS-10m	10m	
CAV-F5P-M12DS-15m	15m	
CAV-F8P-M12D-5m	5m	Cable M12 8 pin, female, straight, PVC, unshielded
CAV-F8P-M12D-10m	10m	
CAV-F8P-M12D-15m	15m	



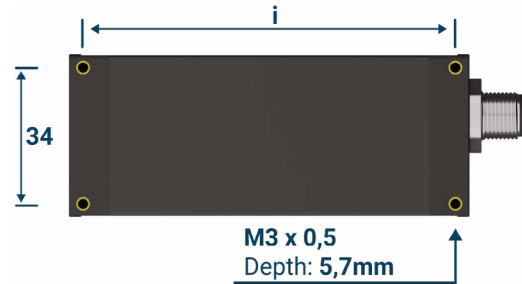
## 7.1 Mechanical Fixing

Argo series barriers are extremely easy to install. You can choose either threaded hole mounting or **KPL02** bracket mounting (sold separately).

### Threaded hole mounting:

Position the receiver and transmitter parallel to each other at the desired distance, within the limits indicated on the label. Secure each one to a sufficiently stable part of the machine using the four threaded holes provided on the caps.

The center-to-center distance "*i*" corresponds to  $h - 7 \text{ mm}$ .

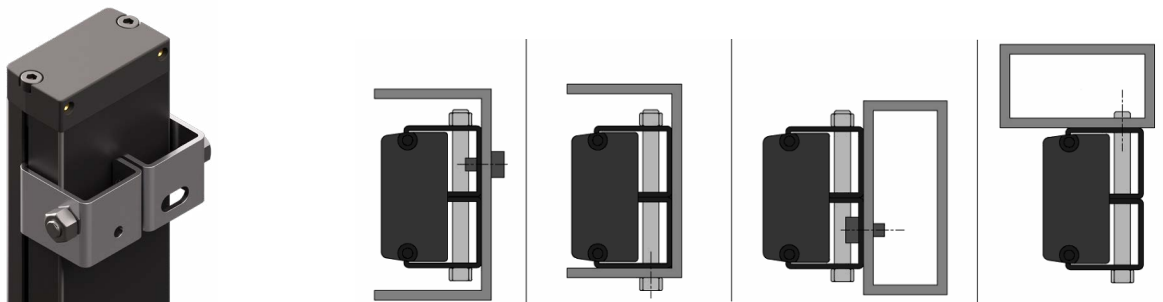


### KPL02 bracket mounting:

The KPL02 kit consists of two brackets for the receiver and two for the transmitter.

Once the brackets are secured to the two housings, place RX and TX at the desired distance, compatible with the limits indicated on the label.

Secure each one to a sufficiently stable part of the machine using the threaded holes or slots on the brackets.



## 7.2 Electrical Connection

Connect the barriers to the power supply using the connectors, or the cable, according to the connection diagram in the [Connections](#) section.

To simplify any connection, Argo system provides two counterphase push/pull outputs, each featuring both **PNP** and **NPN** transistors.

	Interrupted beams	Free beams
Out 1	24V	0V
Out 2	0V	24V

## 7.3 Regulations

### 7.3.1 SE - Sensibility Adjustment

Locate the trimmer on the transmitter based on the chosen code.

Adjust the trimmer until the green LED on the receiver turns on, increasing the margin necessary for vibration immunity and any possible dust deposit on the optical part.



SEb



SEa



SEp

### 7.3.2 Timer

Locate the trimmer on the transmitter based on the chosen code.

Turn the trimmer clockwise to increase the time the output remains active; turn it counterclockwise to decrease it.

In the *Ti* version, you need to remove the protective cap before you can adjust the trimmer.



TE



Ti



Tia

### 7.3.3 CODE

If two or more pairs of barriers are installed adjacent to each other, it is likely that they will interfere with each other, causing a system malfunction.

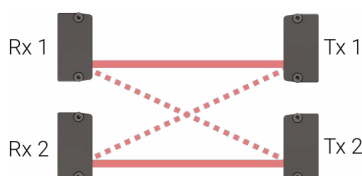
This problem can be solved by installing the barriers alternating a TX with a RX, or by using coding.

In fact, the encoded versions allow the operation of even interfering pairs of barriers.

By setting a switch on the transmitter and receiver to the same CODE:

- **CODE A** selected by connecting it to 0V or *not connecting it*,
- **CODE B** selected by connecting it to +24V,

even neighboring sensors won't disrupt each other. TX and RX with the same serial number *must* be set to the same code.

Interference  
without CODECorrect installation  
without CODEInstallation  
with CODE



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