

# 040 Series

Field Regulator  
Inlet Pressure up to 82 bar  
Nominal Diameter 1"



## Applications

- Small Off Takes
- Propane Tanks
- HP Industrial air or gas field regulator installations

## Brief information

**Operation:** Simple design and rugged construction make the 040 Series a top performer. Dependable and versatile, this regulator provides the answer to a range of regulation problems.

Made from the highest grade materials, the 040 Series allows full inlet pressure retention (up to 69 bar) in all major body and diaphragm case components.

**Application:** The 040 Series is a field regulator suitable for a wide range of uses for small off takes, propane tank installations and for high pressure industrial air or gas field regulator installations. All units are designed for natural, LPG and manufactured gases. The 040 Series can be installed in both horizontal and vertical pipelines. The 040 Series has positive lock up, and has been designed for high efficiency and sensitivity with maximum flow and minimum pressure differentials.

**Control:** A comprehensive range of springs is available, as described overleaf. The outlet pressure can be easily and accurately adjusted by turning the spring adjustment located under the top cap. The design of this mechanism provides virtually frictionless adjustment and eliminates "spring wind up". If required the units can be supplied as a monitor version.

<b>Technical Data:</b>	Maximum inlet pressure:	Up to 82 bar (1200 psig)
	Maximum outlet Pressure:	13.8 bar (200 psig)

## Versions Available:

Model	Body	Case	Description	Max Pi
041-C	Ductile	Ductile	Standard Regulator (Internal Control)	69 bar (1000psig)
041-CM	Ductile	Ductile	Monitor Regulator (External Control)	69 bar
040-S	Steel	Steel	Standard Regulator (Internal Control)	82 bar (1200psig)
040-SM	Steel	Steel	Monitor Regulator (External Control)	82 bar

**Servicing:** The 040 has been designed for ease of access, inspection and servicing of all internal components. A standard soft spares kit is available for all versions.

## Main features

- Sizes 1" screwed or flanged
- Temperature range -20°C to +60°C
- Threaded connections to BS EN 10226 (ISO 7) or NPT. Flanged to DIN, BS EN 1092-2 NP16 or ANSI 150/300/600 RF (other connection standards may be available upon request)
- Internal impulse as standard
- Spring loaded
- Excellent outlet pressure control

## Options

- Monitor version
- Pressure test nipple

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## Regulating Capacities

All capacities in SCM/H 0.6 s.g.

Spring	Po bar	Pin bar	3/4" 1"		3/4" Pipe		1" Pipe		3/4" Pipe			1" Pipe	
			3/4"	1"	3/16"	1/4"	3/16"	1/4"	5/16"	3/8"	1/2"	5/16"	3/8"
240-025-021-004 Yellow	0.34	0.69	9	20	30	20	30	40	44	54	44	59	74
		1.03	13	26	41	26	41	51	55	69	61	79	99
		1.38	15	31	47	31	51	58	68	81	72	96	137
		2.07	20	41	62	41	65	74	86	101	99	133	183
		2.76	24	51	84	51	85	96	101	125	139	159	249
		3.45	28	59	88	59	108	101	113	129	176	188	282
		5.17	40	84	105	84	150	119	127	151	241	232	367
		6.90	51	108	123	108	195	142	151	173	300	296	411
		8.62	61	127	137	130	221	160	171	-	368	345	-
	0.68	1.03	11	24	42	24	42	61	74	89	68	79	113
		1.38	14	31	55	31	55	76	91	116	85	102	159
		1.72	17	37	65	37	65	92	105	153	102	122	221
		3.45	28	59	99	59	108	144	163	204	176	221	334
		5.17	40	84	147	84	150	193	195	235	241	300	419
		6.90	51	108	195	108	195	228	236	269	300	381	503
		10.34	74	153	198	153	280	261	283	-	439	486	-
		13.79	93	198	255	201	362	311	321	-	510	580	-
		20.69	136	278	289	294	535	343	351	-	736	736	-
34.48	227	411	566	481	864	-	-	-	-	-	-		
240-025-021-014 Silver	1.03	1.38	13	27	45	27	45	59	75	98	61	82	113
		1.72	16	34	59	34	59	78	103	126	82	105	156
		3.45	28	59	102	59	105	147	153	212	170	215	321
		5.17	40	84	137	84	147	185	194	280	235	297	453
		6.90	51	108	170	108	195	222	246	310	300	391	520
		10.34	74	153	229	153	280	276	303	-	428	505	-
		13.79	93	201	276	201	362	320	351	-	552	612	-
		20.69	136	294	351	294	535	378	432	-	821	817	-
		27.59	181	388	354	388	694	398	-	-	923	-	-
	34.48	227	411	447	481	864	-	-	-	-	-	-	
	51.72	326	566	-	708	-	-	-	-	-	-	-	
	68.97	439	708	-	963	-	-	-	-	-	-	-	
	1.38	1.72	14	30	55	30	55	74	98	130	74	98	138
		2.07	18	38	68	38	68	93	119	164	96	122	187
		3.45	28	59	108	59	108	154	194	245	176	221	331
		5.17	40	84	140	84	150	197	232	310	241	306	483
		6.90	51	108	190	108	195	231	293	343	300	425	563
		10.34	74	153	241	153	280	293	365	-	428	579	-
13.79		93	201	283	201	362	348	428	-	552	704	-	
20.69		136	294	353	294	535	445	513	-	821	920	-	
27.59		181	388	402	388	694	484	-	-	923	-	-	
34.48	227	481	549	481	864	-	-	-	-	-	-		
51.72	326	566	-	708	-	-	-	-	-	-	-		
68.97	439	708	-	963	-	-	-	-	-	-	-		
1.72	2.07	16	34	62	34	62	85	113	160	91	116	167	
	3.45	28	59	108	59	108	163	187	253	176	221	331	
	5.17	40	84	150	84	150	221	256	347	241	306	500	
	6.90	51	108	195	108	195	278	326	399	300	425	595	
	10.34	74	153	258	153	280	348	416	-	428	595	-	
	13.79	93	201	326	201	362	368	375	-	552	733	-	
	20.69	136	294	422	294	535	471	552	-	821	963	-	
	27.59	181	388	459	388	694	527	-	-	923	-	-	
	34.48	227	447	535	481	864	-	-	-	-	-	-	
51.72	326	566	-	708	-	-	-	-	-	-	-		
68.97	439	708	-	963	-	-	-	-	-	-	-		
240-025-021-024 White	2.07	2.41	18	38	65	38	65	75	99	125	75	99	127
		2.76	22	47	79	47	79	92	125	153	92	125	161
		3.45	28	59	99	59	99	120	159	195	120	159	215
		5.17	40	84	142	84	142	174	224	253	178	241	326
		6.90	51	108	181	108	181	224	261	310	235	306	453
		10.34	74	153	261	153	261	316	362	-	351	467	-
		13.79	93	201	328	201	340	389	439	-	453	609	-
		20.69	136	294	430	294	496	513	552	-	665	892	-
		27.59	181	388	534	388	651	595	-	-	878	-	-
	2.76	3.10	22	46	82	46	82	93	136	167	93	136	170
		3.45	25	55	96	55	96	113	164	198	113	164	204
		5.17	40	84	147	84	147	181	231	328	183	244	354
		6.90	51	108	195	108	195	234	297	408	244	340	442
		10.34	74	153	280	153	280	331	402	-	368	510	-
		13.79	93	201	345	201	362	421	488	-	496	643	-
		20.69	136	294	471	294	535	552	620	-	736	845	-
		27.59	181	388	555	388	694	634	-	-	963	-	-
		34.48	227	481	640	481	864	-	-	-	-	-	-
51.72	326	566	-	708	-	-	-	-	-	-	-		
68.97	439	708	-	963	-	-	-	-	-	-	-		

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## Regulating Capacities

All capacities in SCMH 0.6 s.g.

Spring	Po bar	Pin bar	¾" Pipe		1" Pipe		¾" Pipe		1" Pipe		1" Pipe		
			1/8"	3/16"	1/4"	3/16"	1/4"	5/16"	3/8"	1/2"	5/16"	3/8"	1/2"
240-025-021-024 White	3.45	4.14	29	61	112	61	112	140	178	245	140	178	170
		5.17	38	81	149	81	149	190	252	351	195	252	204
		6.90	50	108	195	108	195	263	314	432	275	354	354
		10.34	74	153	280	153	280	377	430	-	411	538	442
		13.79	94	201	362	201	362	469	527	-	538	671	-
		20.69	136	294	496	294	535	620	660	-	793	872	-
		27.59	181	388	566	388	694	736	-	-	963	-	-
		34.48	227	481	694	481	864	-	-	-	-	-	-
		51.72	326	708	-	708	-	-	-	-	-	-	-
	68.97	439	821	-	821	-	-	-	-	-	-	-	
	4.14	4.48	28	61	110	61	110	151	193	258	156	193	252
		5.17	36	76	139	76	139	191	244	350	201	244	382
		6.90	50	108	195	108	195	263	362	457	289	362	474
		10.34	74	153	280	153	280	384	486	-	425	552	-
		13.79	94	201	362	201	362	493	600	-	566	711	-
		20.69	136	294	535	294	535	687	765	-	835	926	-
		27.59	181	388	978	388	978	807	-	-	963	-	-
		34.48	227	481	821	481	864	-	-	-	-	-	-
51.72		326	708	-	708	-	-	-	-	-	-	-	
68.97	439	821	-	963	-	-	-	-	-	-	-		
240-025-021-034 Light Brown	5.17	5.52	34	65	98	65	98	108	142	177	108	142	258
		6.21	41	82	120	82	120	133	178	201	133	178	350
		6.90	48	98	139	98	139	153	215	228	153	215	457
		10.34	71	153	207	153	207	231	340	-	231	340	-
		13.79	94	201	275	201	275	334	445	-	334	445	-
		20.69	136	294	402	294	402	486	681	-	486	579	-
		27.59	181	388	530	388	530	613	-	-	613	-	-
		34.48	227	481	651	481	651	-	-	-	-	-	-
		51.72	326	708	-	708	-	-	-	-	-	-	-
	68.97	439	821	-	963	-	-	-	-	-	-	-	
	6.90	7.59	47	99	167	99	167	178	224	-	178	224	177
		8.62	57	122	207	122	207	238	294	-	238	294	201
		10.34	71	153	258	153	258	320	388	-	320	388	228
		13.79	94	201	340	201	340	459	547	-	459	547	-
		20.69	136	294	498	294	498	671	701	-	671	701	-
		27.59	181	388	651	388	651	840	-	-	840	-	-
		34.48	227	481	816	481	816	-	-	-	-	-	-
		51.72	326	708	-	708	-	-	-	-	-	-	-
68.97		439	821	-	963	-	-	-	-	-	-	-	
8.62	9.31	56	119	215	119	215	269	323	-	269	323	-	
	10.34	66	142	258	142	258	340	425	-	340	425	-	
	13.79	94	201	362	201	362	538	641	-	538	641	-	
	20.69	136	294	535	294	535	647	808	-	647	808	-	
	27.59	181	388	694	388	694	793	-	-	793	-	-	
6.90	8.62	40	65	91	65	91	125	150	-	125	150	-	
	10.34	50	85	113	85	113	156	188	-	156	188	-	
	13.79	65	116	150	116	150	207	249	-	207	249	-	
	20.69	116	178	221	178	221	303	365	-	303	365	-	
	27.59	153	235	292	235	292	399	481	-	399	481	-	
	34.48	190	292	362	292	362	-	-	-	-	-	-	
	51.72	283	433	-	433	-	-	-	-	-	-	-	
68.97	371	572	-	572	-	-	-	-	-	-	-		
10.34	12.07	68	122	195	122	195	252	283	-	252	283	-	
	13.79	82	161	235	161	235	306	340	-	306	340	-	
	20.69	125	268	357	268	357	461	515	-	461	515	-	
	27.59	164	351	470	351	470	612	680	-	612	680	-	
	34.48	204	436	583	436	583	-	-	-	-	-	-	
	51.72	303	651	-	651	-	-	-	-	-	-	-	
	68.97	402	864	-	864	-	-	-	-	-	-	-	
13.79	15.52	88	198	300	198	300	413	481	-	413	481	-	
	20.69	130	283	442	283	442	609	699	-	609	699	-	
	27.59	176	382	583	382	583	807	934	-	807	934	-	
	34.48	218	467	731	467	731	-	-	-	-	-	-	
	51.72	323	694	-	694	-	-	-	-	-	-	-	

**Full Open Capacity:** The maximum capacity of the regulator can be calculated using:

$$Q = K \sqrt{P_o (P_i - P_o)} \quad \text{when } P_i / P_o < 1.894$$

$$Q = KP_i / 2 \quad \text{when } P_i / P_o > 1.894$$

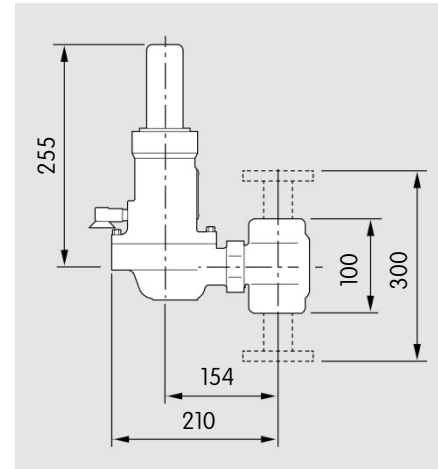
Where: Q = Maximum Flow Rate m<sup>3</sup> / hr (SG = 0.6)  
 K = Flow Constant (see overleaf)  
 P<sub>o</sub> = Outlet Pressure Absolute (Bar)  
 P<sub>i</sub> = Inlet Pressure Absolute (Bar)

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## Orifices – Maximum Inlet Pressure (bar)

SIZE		Yellow	Silver	Light Brown	Grey	Dark Green	"K" Factor
ins	mm						
1/8"	3.18	55	Max	Max	Max	Max	13.5
3/16"	4.76	34.5	Max	Max	Max	Max	30.3
1/4"	6.35	20.7	Max	Max	Max	Max	54.1
5/16"	7.94	13.8	55	Max	Max	Max	84.6
3/8"	9.53	6.9	34.5	Max	Max	Max	120
1/2"	12.70	6.9	20.7	41.4	Max	Max	213

Max inlet pressure depends upon model. See table on page 1



## Material Specifications

A summary of the material specification for the 040 is given for reference. All material has been selected to provide maximum durability and reliability in service.

Components	Specification
Body	Steel ASTM A216 GRD WCB or Ductile Iron BS 2789 GR 27/12
Cover Assembly	Steel ASTM A216 GRD WCB or Ductile Iron BS 2789 GR 27/12
Orifice	Brass or Stainless Steel
Valve Seat	Polyurethane, Viton or Nitrile (Buna N) in aluminium or stainless steel holder
Seals	Nitrile (Buna N) or Viton
Diaphragm	Nitrile (Buna N) or Viton (nylon reinforced)

## Quality:

Elster-Instromet is committed to a programme of continuous quality enhancement. All equipment designed and manufactured by the Elster-Instromet group benefits from the group's quality assurance standards which are approved to EN ISO9001:2000.

## Loading Springs

All springs are colour coded for ease of identification.

Part Number	Colour Code	Bar	PSIG
240-025-021-004	Yellow	0.2 – 0.83	3 - 12
240-025-021-014	Silver	0.69 – 1.72	10 – 25
240-025-021-024	White	1.38 – 4.14	20 – 60
240-025-021-034	Light Brown	3.45 – 8.6	50 – 125
240-025-021-044	Grey	6.90 – 13.79	100 – 200
*240-025-021-054	Dark Green	0.69 – 6.90	10 - 100

\* General purpose spring.

## Your Contacts



United Kingdom  
Elster-Instromet  
4 Pate Road, Melton Mowbray,  
Leicestershire LE13 0RG  
T +44 1664 567797  
F +44 1664 410254  
www.elster-instromet.com  
sales@elster-instromet.co.uk

Germany  
Elster GmbH  
Steinern St. 19 - 21  
55252 Mainz -Kastel  
T +48 6134 605 0  
F +49 6134 605 223  
www.elster-instromet.com  
info@elster.com

USA  
Elster American Meter  
2221 Industrial Road  
Nebraska City, NE 68410-6889  
T +1 402 873 8200  
F +1 402 873 7616  
www.elster-meterservices.com

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