Diaphragm-Cell / Force Transducer
MK- and MQ-50…280
Measuring range 0…50 kg up to 0…25 t

Purpose
Weighing, measuring of pressing force

Operating
Strain gauges measure the bending of a diaphragm ring caused by an axial load

Advantages
- Tight, robust, corrosion-protected
- Very flat; high lateral stability
- Six models with wide load ranges
- Load button or axial rocker bearing
- **Options:** Thread connection suitable for pression or tension force;
- Overload protection (at small sizes)

Application
Weighing, force measuring, especially at small height in load direction. Axial force of axis and wheel-shafts. Supporting force at machines or buildings. Flat platforms, bunker scales, weighing skids for fork lifts. **Electronics:** AVS, AV-1, AN-units, DDZ-1/3

Construction
The load cell is a circular or square disk with a circular ring-shaped thinner area forming the measuring diaphragm.

Its lower side is applied with strain gauges connected to a full bridge and to adjusting elements for resistance, ZERO, GAIN and temperature drift.

The cell has a measuring cable or flange connector.The compounded measuring area is protected by a cover with a joint O-ring.

The top side bears a load button or a rocker bearing. Lower side reaches, at more than nominal load, but only at the option "Overload Protection", the screwed ground bed-plate.

At standard models this plate is omitted. But it is deliverable on request, e.g. for ragged mounting surfaces.

Electrical Data

Resistance, nominal….4x350 Ω or 4x700 Ω
" actual value.....see test certificate
Connection, standard. .2m cable LiYCY 4x0.5
" Plug-in-connector.....MS 3102 A 14 S -5P
" for models..... -140, -200, -280
with housing.....at contact A

Exciting volt. 350/700R10..15 V/20..30 V
Lead colours/contacts. -yellow/D;+brown/E
Output(nom.load).....1 mV/V standard*)
Tolerance (20°C).....0.5%; Opt. 0.2%
Lead colours/contacts. -white/B; +green/C
Combined error.....0.5%; typ. 0.25%

ZERO signal(20°C).....< 2% f.s.
= Output signal at.....ZERO load
" temp.-drift/10K.....< 0.4%; Opt. 0.1%
Output " " .....< 0.3%; " "
Nominal temp.-range…- 10°C…+ 70°C
Tolerated range.....- 50°C…+120°C
with plug-in connector or special cable

**)All models are suitable for 2x nominal load and can be calibrated for 2 mV/V on request. We do'nt recommend that for scales with 4 cells one cell often reaching 2 x nominal load.*

Left side: Model MK with load button.
(Rocker bearing on request)

Mechanical Data

Working load.....2 x nom.load
Limiting/Breaking load. 2,5/5x ""
.....(in case of 1 mV/V)

Nom.loads (t)-Dimensions (mm)-Weights (kg)

MK-	50	70	100	140	200	280
Nmin	0.02	0.02	0.2	1	3	10
Nmax	0.5	1	2.5	5	12.5	25
D	50	70	100	140	200	280
Di	34	52	72	96	144	200
Do	13	16	19	37	37	37
M	4M5	6M6	6M8	6M12	6M16	8M20
ØTK	42	60	86	120	172	240
d'	6.5	8.5	10.5	16.5	21	31
b'	35	50	80	100	150	200
d1	-10	12	15	25	40	
d2	-30	35	42	62	105	
h	23*	20	25	30	40	50
h1	30*	25	30	40	50	60
h2	-29.5	38	45	62.5	82	
Wght.	0.2	0.5	1.3	3.4	9	22

Option with h = 20, h1 = 25 on request

Data sheet E02.1 (09/2002)

Right side: Model MQ with rocker bearing
(Load button is available)