

INTRA Sun Monitor

The Sun Monitor is a Quadrant Silicon Detector equipped with a simple aperture optics (no lenses). The detector is sealed in a all weather resistant case. Radiation enters this case through a window made of acrylic glass.

Table 1 Parameters of the Aperture Geometry of the Sun Monitor. Additional apertures – not mentioned in this table – are introduced between view limiting and entrance aperture to reduce the amount of scattered light during periods with non-normal incidence.

Diameter of view limiting aperture:	3.0	mm
Diameter of entrance aperture:	1.5	mm
Diameter of Si-detector:	2.52	mm
Distance between entrance apertures and detector:	4.4	mm
Resulting field of view (with full signal):	± 6.7	$^{\circ}$

The quadrant-detector is a C30843E (produced by the late EG&G – now PerkinElmer Optoelectronics). . No electronics is included in the package. The cable carries the signals of the diode pins.

Figure 1 The Sun Monitor complete with cable and connector. Also shown is the special M20 x 1 nut (near the 4 cm mark of the measuring rod) and an o-ring, which both are used to install the sensor into the monitor flange of INTRA.

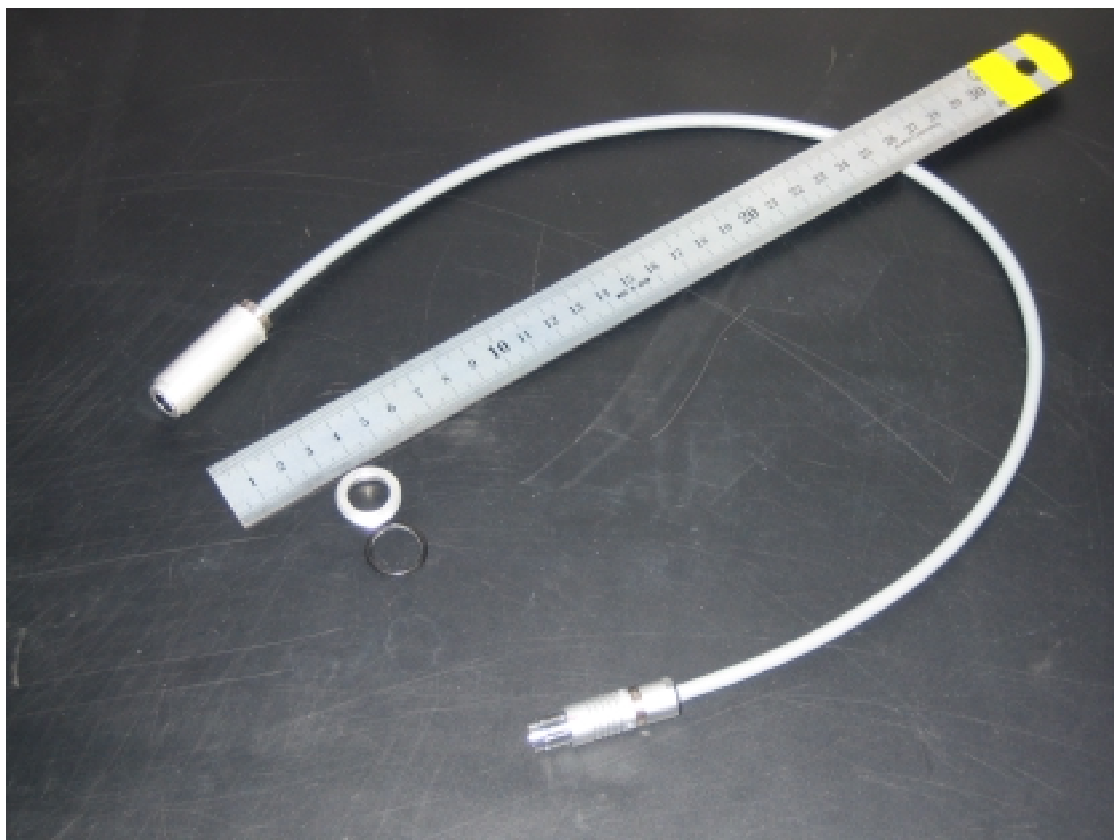


Table 2 Cable and Connector

Cable:	7 x 0.14 mm ² with shield (1)
Length of cable:	app. 0.6 m
Diameter of cable:	9 mm
Connector:	Fischer S 103A056-3 Ø5.7-S

Note 1 2 wires not used

Table 3 Pin Assignments

Signal	color	connector pin	detector pin
-	white	01	-
Ref (case)	brown	02	10
Q4	green	03	03
Q3	yellow	04	02
Q2	grey	05	08
Q1	pink	06	07
-	blue	-	-

Figure 2 Detector: Front View. Also shown are the numbers of the pins on the rear side.

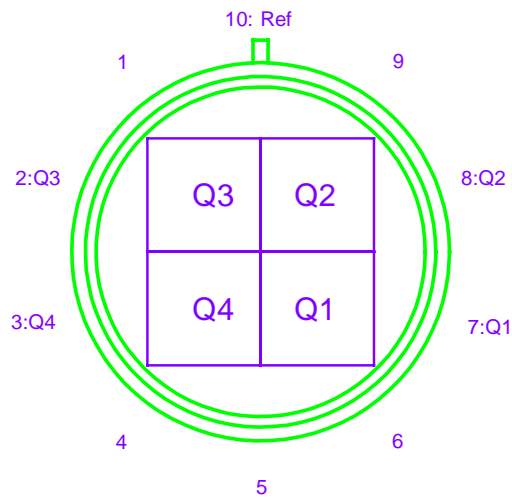


Figure 3 Dimensional Outline of Sun Monitor.
 During assembly, the strip of the detectors case is aligned to point to the 1xØ3-hole near the middle bottom of the case. The hole is sealed with silicon following assembly. The 2.5 mm slit at the rear end of the case is to accept a 2.5 mm bolt that slightly protrudes into the Ø15mm hole into which the case is installed.

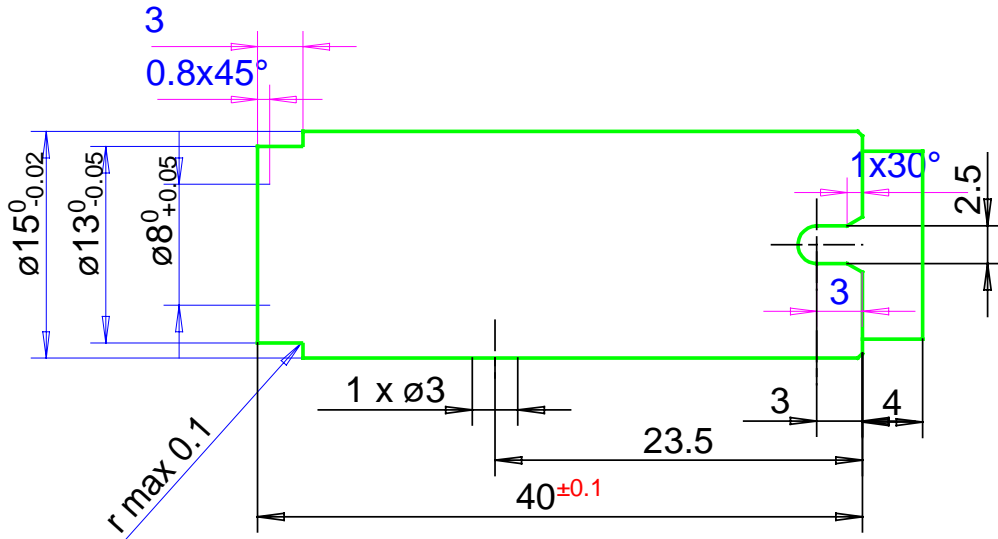


Figure 4 Special M20 x 1 nut used to hold the sun monitor.

