M36 Alarms and safeguards for auxiliary reciprocating internal combustion engines driving generators in unattended machinery spaces

M36 (1980) (Rev.1 1993) (Rev.2 June 2000) (Rev.3 Sep 2008) (Rev.4 July 2013) (Rev.5 Mar 2016) (Rev.6 Dec 2018)

M36.1 General

This UR refers to trunk-piston reciprocating i. c. engines on fuel oil.

M36.2 Alarms

All monitored parameters for which alarms are required to identify machinery faults and associated safeguards are listed in Table 1.

All these alarms are to be indicated at the control location for machinery as individual alarms; where the alarm panel with individual alarms is installed on the engine or in the vicinity, common alarm in the control location for machinery is required.

For communication of alarms from machinery space to bridge area and accommodation for engineering personnel detailed requirements are contained in M29.

Note:

1. The requirements of M36 Rev.3 are to be uniformly implemented by IACS Societies for engines:
   i) when an application for certification of an engine is dated on or after 1 January 2010; or
   ii) which are installed in new ships for which the date of contract for construction is on or after 1 January 2010.

2. The requirements of M36 Rev.4 are to be uniformly implemented by IACS Societies for engines:
   i) when an application for certification of an engine is dated on or after 1 January 2015; or
   ii) which are installed in new ships for which the date of contract for construction is on or after 1 January 2015.

3. The requirements of M36 Rev.5 are to be uniformly implemented by IACS Societies for engines:
   i) when an application for certification of an engine is dated on or after 1 July 2017; or
   ii) which are installed in new ships for which the date of contract for construction is on or after 1 July 2017.

4. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

5. The requirements of M36 Rev.6 are to be uniformly implemented by IACS Societies for engines:
   i) when an application for certification of an engine is dated on or after 1 January 2020; or
   ii) which are installed in new ships for which the date of contract for construction is on or after 1 January 2020.

M36
(cont)

Table 1

Monitored parameters	Alarm	Shut down
Fuel oil leakage from high pressure pipes	x	
Lubricating oil temperature	high	
Lubricating oil pressure	low	x
Activation of oil mist detection arrangements (or activation of the temperature monitoring systems or equivalent devices of: - the engine main and crank bearing oil outlet; or - the engine main and crank bearing) [3]	x	x
Pressure or flow of cooling water	low	
Temperature of cooling water or cooling air	high	
Level in cooling water expansion tank, if not connected to main system	low	
Level in fuel oil daily service tank	low	
Starting air pressure	low	
Overspeed activated		x
Fuel oil viscosity before injection pumps or fuel oil temp before injection pumps[1]	low high	
Exhaust gas temperature after each cylinder[2]	high	
Common rail fuel oil pressure	low	
Common rail servo oil pressure	low	
Speed of turbocharger[4]	high	

Notes:

1. For heavy fuel oil burning engines only.

2. For engine power above 500 kW/cyl.

3. When required by UR M10.8 or by SOLAS Reg. II-1/47.2: for each engine one oil mist detector (or engine bearing temperature monitoring system or equivalent device) having two independent outputs for initiating the alarm and shut-down would satisfy the requirement for independence between alarm and shut-down systems.

4. Only required for turbochargers of Categories B and C. (see M73.5)

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