INTERNATIONAL STANDARD

ISO
7873

ANSI Internat Doc Sed

Control charts for arithmetic average with warning limits

Cartes de contrôle de la moyenne arithmétique à limites de surveillance

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 7873 was prepared by Technical Committee ISO/TC 69, *Applications of statistical methods*, Sub-Committee SC 4, *Statistical process control*.

Annex A forms an integral part of this International Standard. Annexes B, C and D are for information only.

Introduction

The statistical control of processes using arithmetic average control charts with warning limits is a modification of Shewhart control charts. Control charts for the arithmetic average using both warning and action limits are characterized by higher sensitivity to a process level shift.

Arithmetic average control charts with warning limits are able to reveal smaller shifts of the mean value of the controlled quality measure because of additional information obtained from the points being accumulated in the warning zone. In addition, sudden large shifts in process level are detectable if sample average values fall beyond action limits. In comparison with Shewhart control charts, they are more sensitive in the case of minor and slowly forming biases of the quality measure (that is, shifts not exceeding $2,5\sigma/\sqrt{n}$, where σ is the standard deviation of the quality measure and n is the sample size).