



STS Association

STS 202-4

**Edition 1.1
Jan 2022**

STANDARD TRANSFER SPECIFICATION –

Addendum to IEC 62055-52: Electricity metering – Payment systems – Part 52: Standard transfer Specification (STS) – Physical layer protocol for a two-way virtual token carrier for direct local connection

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Revision History

Edition	Clause	Date	Change details from previous edition
Ed 1.1		Jan 2022	Added this table and changed to the new STS logo

INTRODUCTION

The standard transfer specification (STS) is a secure message protocol that allows information to be carried between point of sale (POS) equipment and payment meters and it caters for several message types such as credit, configuration control, display and test instructions. It further specifies devices and codes of practice that allows for the secure management (generation, storage, retrieval and transportation) of cryptographic keys used within the system.

1 Scope

This addendum specifies the following changes/additions to IEC 62055-52:

1.1 Addition of 4 digit manufacturer code field definitions

The introduction of 4 digit manufacturer codes in IEC62055-41 Ed2 requires that the IDResponse message be changed to cater for this. The current message only allows for 2 digits to be returned for the manufacturer code value.

This will require the addition of a new IDResponse Message and related message fields.

1.2 Changes to TokenStatus values

The introduction of a 3 and 4 token key-change set requires the addition of the 3rd and 4th KCT responses in the TokenStatus register.

1.3 Token lockout

The current version of this specification calls for at least 10 tokens to reach maximum token lockout time - this is to be modified to indicate at most 10 tokens to reach maximum lockout time.

1.4 Typographical error corrections

Corrections to various typographical errors.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62055-41 ED 2 - ELECTRICITY METERING – PAYMENT SYSTEMS – Part 41: Standard transfer specification (STS) – Application layer protocol for one-way token carrier systems

IEC62055-52 ELECTRICITY METERING – PAYMENT SYSTEMS – Part 52: Standard transfer specification (STS) – Physical layer protocol for a two-way virtual token carrier for direct local connection.

3 Message Field Definitions

Edition2 of IEC62055-41 makes provision for 2 and 4 digit manufacturer codes. This requires that the message definition table (Table 6 in IEC62055-52) make a similar provision.

Table 6, Clause 6.5, fields 'Y' and 'N', are added to the existing table with the following parameters:

Field	Field number	No. Characters	Character value	Context	Reference
Y	(23)	4	48-57	Manufacturer code	6.4.3

				ASCII "0" – "9" Range 0100 – 9999 4 digit representation of the manufacturer code as defined in 6.1.2.3.2 of IEC62055-41	
N	(24)	1	78	Manufacturer information follows ASCII "N" ; Indicates that manufacturer details are contained in the next 8 characters of the message	6.4.3

Clause 6.4.3 in IEC62055-52 now becomes:

6.4.3 IDResponse message

The server sends the IDResponse message to the client in response to receiving the IDRequest message from the client. The server identifies its payment meter type by sending the manufacturer code and software version code of the server.

For two digit manufacturer code payment meters, the following response is defined:

/	M	X	V	CR	LF
(1)	(22)	(6)	(7)	(4)	(5)

For four digit manufacturer code payment meters, the following response is defined:

/	N	Y	V	CR	LF
(1)	(24)	(23)	(7)	(4)	(5)

See also 6.6.2 for more information on the processing of this message.

3.1 Token Lockout

Clause 6.6.7 currently states the following:

A maximum lockout time of approximately 60s to 120 s shall be reached within at least 10 successive rejections.

This suggests that it may take an indeterminate number of rejections to reach maximum lockout time. This is not the intended functionality of the lockout timer, and the sentence therefore changes to the following:

A maximum lockout time of approximately 60s to 120 s shall be reached within 10 or less successive rejections.

Explanatory note on the operation of the token lockout functionality:

- If the payment meter is not in a token lockout condition and, after two successive incorrect tokens are received by the payment meter, a token lockout timer is activated
- Any further tokens will only be accepted after the timer has expired
- Once the timer has expired, and on the acceptance of a valid token, the token lockout function is reset (and the timer is reset to zero)
- TokenLockout is only affected by an AuthenticationError
- Unsupported token types (FunctionError) will not affect the TokenLockout status.

3.2 Token Status Values

The following TokenStatusValues are added to Table 24 in 6.8.3.7.

Value	Context	Reference
17	3rdKCT This is a Set3rdSectionDecoderKey token that has been entered. The 3rdKCT attribute in TokenResult in the TCDU is True.	IEC62055-41 7.1.5 Table38
18	4thKCT This is a Set4thSectionDecoderKey token that has been entered. The 4thKCT attribute in TokenResult in the TCDU is True.	IEC62055-41 7.1.5 Table38

3.3 Typographical error corrections

Clause	Change
6.6.7	Remove comma after 'and monitors'
6.6.7	Change 'function locates' to 'function is located'